

Auditors' Response to Audit Fee Lowballing: The Change in Audit Hours and Hourly Audit Fees^{*}

SUNYOUNG PARK^{**}

*Seoul National University
Seoul, Korea*

EUGENIA Y. LEE^{***}

*Seoul National University
Seoul, Korea*

JONG-HAG CHOI^{****}

*Seoul National University
Seoul, Korea*

ABSTRACT

This study examines how lowballing auditors adjust audit hours and hourly audit fees. Using Korean data, we first find that both lowballing auditors and other auditors increase audit hours in the first year of an audit engagement. However, only lowballing auditors charge lower hourly audit fees in the initial year. The results suggest that lowballing auditors charge low hourly fees to win a new audit contract while exerting more effort to maintain an appropriate level of audit quality. Our findings mitigate regulators' concern that lowballing auditors would reduce effort and sacrifice audit quality to attract new contracts.

Keywords: auditor change, lowballing, audit hours, hourly audit fees

* We appreciate helpful comments provided by two anonymous reviewers, Wonsuk Ha and other workshop participants at Seoul National University. The third author acknowledges the generous financial support provided by the Institute of Management Research at Seoul National University.

** First author, Ph. D. candidate, College of Business Administration, Seoul National University, e-mail: icecream8491@gmail.com.

*** Corresponding author, Ph. D. candidate, College of Business Administration, Seoul National University, e-mail: padfoot3@snu.ac.kr.

**** Professor, College of Business Administration, Seoul National University, e-mail: acchoi@snu.ac.kr.

INTRODUCTION

Auditor changes occur frequently. When an auditor change occurs, new auditors must incur high start-up costs to understand the new client firms' business and financial reporting practices (Chan 1999; DeAngelo 1981). However, it is common for new auditors to charge substantially lower audit fees in their initial year of audits than in other continuing years of audit engagements (Craswell and Francis 1999; Desir, Casterella, and Kokina 2014; Ettredge and Greenberg 1990; Francis and Simon 1987; Ghosh and Lustgarten 2006; Gul, Fung, and Jaggi 2009; Krauß, Quosigk, and Zülch 2014). This tendency is often called 'initial audit fee discounting' or 'lowballing' to win a new audit contract. Regulators express concerns about lowballing due to its potentially detrimental impact on auditor independence and thus audit quality (Healy 2005; Parker 2002). For example, in the 1970s, both the Metcalf Committee (U.S. Senate 1977) and the Cohen Commission (American Institute of Certified Public Accountants 1978) discuss the potential consequences of lowballing. Ghosh and Lustgarten (2006: 336) summarize this view that lowballing "impairs auditor independence because the audit firm must recoup losses on the initial audit from future audit fees. This creates interest on the part of the auditor in the continued existence of the client and an incentive to give a more favorable audit opinion...."

Notwithstanding these concerns, only few studies have investigated how lowballing affects the new auditor's behavior. Surprisingly, whether and how effort (that is, audit hours) and/or hourly fees comprise the reduction in initial audit fees have not yet been investigated. Audit fees comprise of two components: audit hours and price per audit hours (henceforth "hourly audit fees"). Understanding the source of lowballing is important because it determines whether and to what extent audit outcome, i.e., audit quality, would be affected, and thus, should precede any further discussions on audit quality. This study intends to fill this gap. Specifically, this study asks: when lowballing for a new client, do auditors exert less audit effort or charge lower hourly audit fees?

Lowballing auditors (henceforth "LBAs") may decide to exert less effort to their clients. Due to the substantial audit fee discounting at the time of the auditor change, LBAs may have to exert lower

audit efforts to reduce their audit costs and avoid suffering losses in lowballing engagements (e.g., Blankley, Hurtt, and MacGregor 2012; Gregory and Collier 1996). In this case, LBAs would not have to lower their hourly audit fees (e.g., Johnstone and Bedard 2001; O'Keefe, Simunic, and Stein 1994). Alternatively, LBAs may charge lower hourly audit fees to the clients. Since new clients entail higher risks (Myers, Myers, and Omer 2003), LBAs may have to exert sufficient effort to maintain an appropriate level of audit quality (Gregory and Collier 1996; O'Keefe, Simunic, and Stein 1994), even when they are lowballing to win the contract. In this case, they would have to charge lower hourly audit fees (Blankley, Hurtt, and MacGregor 2012) and absorb temporary losses themselves, or replace senior auditors with junior members and reduce hourly fee rates. Based on these two possibilities, we present two opposing hypotheses on which of the two components auditors would adjust to offer a lower price in their initial audits.

We empirically examine the hypotheses using Korean data. Korean listed firms prepare their financial statements according to the International Financial Reporting Standards. The firms are mandated to have the financial statements audited by an external auditor, who needs to comply with the International Auditing Standards. The global Big 4 auditors are the main players of the Korean audit market as well, auditing more than half of the listed firms.¹⁾ A unique aspect of the Korean market is the public disclosure of audit fees and audit hours, which was mandated since 2003 in an attempt to facilitate investors' assessment and comparison of the adequacy and independence of audits (Financial Supervisory Service 2003). This institutional setting enables us to decompose audit fees into quantities (i.e., audit hours) and unit prices (i.e., hourly audit fees) and examine our research question with a large sample.²⁾ The final

1) Refer to Bae, Choi, and Rho (2016) for the summary of the institutional settings on Korean accounting and auditing market. Although Korean regulations on auditing are similar to those of the other developed countries, the enforcement mechanism in Korea may be slightly weaker, but has improved recently.

2) Note that, although many countries require the disclosure of total audit fees, information on audit hours is rarely available in other countries. Therefore, prior studies examining auditor behavior either examine audit hours with a small sample of survey or proprietary data or simply investigate audit outcomes leaving the audit process as a black box. The use of Korean data enables us to overcome this limitation. Prior studies have utilized Korean data to decompose audit fees into audit hours and hourly audit fees and examined auditor behavior

sample used in the analyses includes 12,682 firm-year observations of Korean listed firms collected for the period from 2005 to 2015.

The empirical findings are summarized as follows. First, we find that auditors increase audit hours while reducing hourly audit fees in the initial audit engagement compared to other years of an audit engagement, revealing that the main source of lowballing comes from a reduction in hourly audit fees rather than audit hours. When we compare the clients of LBAs and non-LBAs in the initial year, we find no significant difference in audit hours, whereas hourly audit fees are significantly smaller for the clients of LBAs than for the clients of non-LBAs. These findings suggest that, despite the lower total audit fees and hourly audit fees charged, LBAs exert greater audit effort in the initial year of audit engagements to deal with the increased audit risk. In fact, the effort levels of LBAs and non-LBAs are not different, suggesting that lowballing does not necessarily accompany sacrificed audit quality.

Our study contributes to the literature in the following ways. First, our findings have important and timely policy implications for regulators worldwide. Contrary to the concerns raised by the regulators, our results clearly suggest that, even after the lowballing, auditors increase their effort level to deal with increased audit risk in the initial year of audits. A few prior studies (e.g., Barua, Lennox, and Raghunandan 2020; Gul, Fung, and Jaggi 2009; Stanley, Brandon, and McMillan 2015) directly investigate the effect of auditors' lowballing on audit quality but fail to find evidence of impaired audit quality in the U.S. for lowballing auditors. Our studies complement the prior studies by explaining that audit quality does not decrease for lowballing auditors because the source of lowballing comes from the unit price rather than from audit effort utilizing a recent, large dataset on audit hours from Korea. These findings, combined together, suggest that the regulators' concerns on the detrimental effects of lowballing may be ungrounded and respond to DeFond and Zhang's (2014) call for a deeper understanding of auditor

with respect to various issues such as industry specialization (Bae, Choi, and Lee 2019; Bae, Choi, and Rho 2016), analyst coverage (Chun and Rhee 2015), financial statement comparability (Ki, Kwak, and Ahn 2015), earnings quality (Kwon and Ki 2011), and mandatory audit firm rotation (Kwon, Lim, and Simnett 2014). Despite the benefits of using detailed data on audit hours, we acknowledge that the use of Korean data may limit the generalizability of our findings to other countries.

lowballing behavior.

Second, this study adds to the literature on audit fees. Audit fees are determined by the level of audit effort and hourly audit fees. Although many studies look into the determinants of audit fees (Bae, Choi, and Rho 2016; Bedard and Johnstone 2004; Causholli et al. 2010; Johnstone and Bedard 2001), they do not differentiate between different components of audit fees and leave the detailed process of audit fee determination as a black box, mainly due to data limitations. Many simply interpret audit fees as a proxy for audit effort. However, the two determinants of audit fees, i.e., audit hours and hourly audit fees, have different implications on audit quality (Bae, Choi, and Rho 2016). By decomposing audit fees into audit effort and hourly audit fees for a large sample, we are able to directly dig into the complexity of an audit process. Specifically, we provide a complete picture of auditors' approach to win a new audit contract through lowballing.

The remainder of the paper is organized as follows. The second section discusses the related prior literature and develops the research hypotheses. The third section explains the research design and empirical model, and the fourth section describes the sample and data. The fifth and sixth sections present the empirical results for the main and additional analyses, respectively. The last section concludes the paper.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Literature on Lowballing

At the time of auditor change, new auditors, compared to previous auditors, tend to charge substantially low audit fees, commonly known as auditor lowballing (Craswell and Francis 1999; Desir, Casterella, and Kokina 2014; Ettredge and Greenberg 1990; Francis and Simon 1987; Ghosh and Lustgarten 2006; Gul, Fung, and Jaggi 2009; Krauß, Quosigk, and Zülch 2014). New auditors charge lower fees as a means to win a new audit contract. Lowballing behavior is not restricted to the auditing industry as suppliers in other industries commonly offer a special introductory price to attract new customers, especially under intense competition.

As introduced previously, several empirical studies document

evidence of lowballing behavior of auditors in their initial audits in different countries (e.g., Craswell and Francis 1999; Desir, Casterella, and Kokina 2014; Ettredge and Greenberg 1990; Francis and Simon 1987; Ghosh and Lustgarten 2006; Simon and Francis 1988; Song, Chung, and Jhang 2020). For example, Ettredge and Greenberg (1990) report that auditors provide a fee discount of around 25 percent for initial engagements in the U.S. Simon and Francis (1988) document that lowballing persists for the early three years of the audit engagement and recovers to the normal level by the fourth year. Desir, Casterella, and Kokina (2014) report that lowballing continues to exist in the more recent period of stricter regulations following the enactment of the Sarbanes-Oxley Act. Craswell and Francis (1999) examine lowballing of Australian auditors and find lowballing is observed in upward (i.e., from non-Big 4 to Big 4) auditor switches.

Theoretical literature explains that lowballing exists as a competitive response of auditors to earn quasi-rents in subsequent audits (DeAngelo 1981; Dye 1991). Since incumbent auditors are able to obtain a stable flow of future audit fees, sometimes even exceeding their audit costs, auditors compete with each other for a new audit contract by offering a lower price to the client. Empirical studies provide evidence consistent with lowballing being a competitive response of auditors. Ghosh and Lustgarten (2006) find that the size of lowballing is much larger in the segment of non-Big 4 auditors than in that of Big 4 auditors, interpreting it as evidence of greater competition in the atomistic non-Big 4 market causing greater lowballing. Similarly, using Korean data, Song, Chung, and Jhang (2020) document that lowballing occurs more frequently when auditors compete more intensively for new clients in a concentrated audit market, suggesting that audit market competition is a driver of lowballing behavior.

Regulators express concerns about auditor lowballing because of its potential negative impact on audit quality. For example, according to an article in Financial Times, regulators were concerned about lowballing because auditors would not be able to perform the adequate amount of audit work if audit fees were too low (Parker 2002). Due to this concern, regulators even discussed about interfering with and potentially halting the contracting process if audit fees were deemed too low compared to the costs. However, regulators were faced with fierce opposition by practitioners

who argued that estimating the *adequate* level of audit costs is impossible. In addition, auditors may become less independent since they would have to secure the subsequent-year audit contracts (Public Company Accounting Oversight Board 2011). Consistent with such concerns, Stanley, Brandon, and McMillan (2015) find that, among clients that have their auditors switched, auditor lowballing is positively associated with the likelihood of using discretionary accruals to meet earnings forecasts.

However, some argue that audit fee lowballing would not have a detrimental impact on audit quality because the losses are expected to be recouped in subsequent years. In this case, the main concern on lowballing would be on the predatory prices that large auditors offer, driving out competitors from the market (Williams 2007) rather than audit quality. According to DeAngelo's (1981) theory, auditors will be able to obtain quasi-rents in the subsequent periods and thus cancel out initial-year temporary losses. This indicates that auditors are willing to incur losses in the initial year for future audits, and thus lowballing would not affect auditors' effort or quality. Magee and Tseng (1990) show that only when all auditors have the same view on the clients' reporting and the reporting issue affects multiple years, lowballing and quasi-rents may become a threat to independence. In an experimental study, Dopuch and King (1996) find that lowballing does not reduce the quality of services. Studies such as Cho, Kwon, and Krishnan (2020), Barua, Lennox, and Raghunandan (2020), and Gul, Fung, and Jaggi (2009) conduct thorough empirical analyses on various contract characteristics and audit fee lowballing and find no evidence of impaired audit quality.

Although regulators have continuously expressed serious concerns on auditor lowballing, theoretical and empirical evidence, collectively, provide mixed results on the effect of lowballing on audit quality. Thus, the debate surrounding auditor lowballing has not yet been resolved. We attempt to offer an insight into this debate by providing a missing link and a deeper understanding of auditors' lowballing behavior.

Hypothesis Development

Lowballing and Audit Effort.

Despite the longstanding debate on lowballing and its potential effects on audit quality, little attention has been paid on the source

of lowballing. Audit fees comprise of audit hours and hourly audit fees. If auditors were to reduce audit fees charged to the audit client in an attempt to win a new client, they would have to adjust either audit hours assigned to the new client or the hourly audit fees charged to the client. Understanding which of the two components are adjusted in lowballing is important because the effect on audit quality is expected to be different. If auditors reduce audit hours to lower the total fees charged to the client, then it is likely that auditors are sacrificing audit quality to avoid losses from the new audit engagement. In contrast, if auditors are simply charging lower hourly audit fees without reducing audit effort, the audit quality of lowballing auditors would be of less concern to the regulators. We discuss each possibility in the following section.

On the one hand, it is possible that auditors offer a price discount by reducing their audit effort in their initial year of audits to reduce audit costs and avoid suffering losses from lowballing engagements. A large portion of audit costs is related to audit effort costs (Bedard and Johnstone 2004; Choi et al. 2008). Accordingly, reducing audit effort (that is, spending fewer audit hours) will most effectively reduce audit costs (Blankley, Hurtt, and MacGregor 2012; Gregory and Collier 1996; Krauß, Quosigk, and Zülch 2014). For example, Schelleman and Knechel (2010) interviewed 119 Dutch audit partners in 1998 about how they adjusted audit hours and labor mix assigned to their clients in response to engagement characteristics. They document that, in their sample, auditors charge lower audit fees and spend fewer audit hours in their initial year audits. Even when reducing total audit effort, auditors may address high audit risks inherent in initial audit engagements (Stein 1994) by assigning more experienced personnel to the engagement (Johnstone and Bedard 2001). Based on this prediction, we present the first hypothesis on lowballing and audit effort as follows.

H1a: Lowballing auditors reduce audit effort in the initial year of an audit engagement.

Lowballing and Hourly Audit Fees.

On the contrary, auditors may choose to maintain their effort level even when they decide to lowball for their clients. Auditors are subject to severe legal penalties in case of an audit failure. To reduce expected liabilities, auditors exert effort and maintain audit

quality at an acceptable level regardless of the level of fees charged (Gregory and Collier 1996; Krauß, Quosigk, and Zülch 2014; O'Keefe, Simunic, and Stein 1994). Moreover, since audit risks tend to be high at the time of initial audit engagements (Myers, Myers, and Omer 2003; Stein, Simunic, and O'Keefe 2014), the auditor needs to increase the level of effort at the initial audit engagement. As such, reducing audit effort during the initial year of audits may be too risky for the auditor. Consistent with this explanation, O'Keefe, Simunic, and Stein (1994) do not find evidence of either audit hours or engagement team labor mix changing at the initial audit engagement in a survey of 249 U.S. partners about audits conducted for the year 1989. Moreover, Caramanis and Lennox (2008) document that audit hours increase for initial audit engagements using proprietary Greek data of 9,738 firm-year observations for the period of 1994–2002.

Instead of reducing audit effort, auditors can simply charge lower hourly audit fees to lower total audit fees and absorb potential losses by themselves. The loss in the initial year would be only temporary since incumbent auditors are able to obtain quasi-rents from continuing audits in subsequent years (Dye 1991). In addition, auditors can reduce hourly audit fees by assigning staff with lower experience and reducing hourly audit fees (Gregory and Collier 1996; Krauß, Quosigk, and Zülch 2014). In this case, auditors would not have to suffer losses. Another is through simply charging lower hourly fees and absorbing the losses internally. Since initial audits incur significant audit risks, LBAs may not be able to reduce audit effort or the involvement of experienced personnel sufficiently to match the price discount offered through lowballing. In this case, they would have no option but to lower hourly audit fees.

Based on this prediction, we present the second hypothesis on lowballing and hourly audit fees as follows.

H1b: Lowballing auditors charge lower hourly audit fees in the initial year of an audit engagement.

RESEARCH DESIGN

Measuring Audit Fee Lowballing

To identify audit fee lowballing, we define an indicator variable,

LOWB, set to 1 if a firm changes its auditor in the current year, and current-year audit fees are lower than the previous-year audit fees, and 0 otherwise. Thus, this variable has a value of 1 if the new auditor charges lower audit fees than the previous auditor, indicating lowballing in the initial audit engagement.

Model Specifications

We examine the effect of audit fee lowballing on audit hours and hourly audit fees following prior studies that examine the determinants of audit fees (e.g., Choi et al. 2008; Craswell, Francis, and Taylor 1995; Davis, Ricchiute, and Trompeter 1993; Francis, Reichelt, and Wang 2005; Huang, Raghunandan, and Rama 2009; Palmrose 1986; Raghunandan and Rama 2006; Simunic 1980; Simunic and Stein 1996). Specifically, we estimate the following regression model for firm i and year t :

$$\begin{aligned} HOUR_{i,t} \text{ (or } HAF_{i,t}) = & \beta_0 + \beta_1 CHANGE_{i,t} + \beta_2 LOWB_{i,t} + \beta_3 BIG4_{i,t} \\ & + \beta_4 ISA_{i,t} + \beta_5 LNTA_{i,t} + \beta_6 LIQUIDITY_{i,t} + \beta_7 LEV_{i,t} + \beta_8 ROA_{i,t} \\ & + \beta_9 LOSS_{i,t} + \beta_{10} INVREC_{i,t} + \beta_{11} OPINION_{i,t} + \beta_{12} FOREIGN_{i,t} \\ & + \beta_{13} SGROWTH_{i,t} + YEAR\ FE + INDUSTRY\ FE + e_{i,t}. \end{aligned} \quad (1)$$

The dependent variables are *HOUR* and *HAF* for testing Hypotheses 1a and 1b, respectively. *HOUR* is the natural logarithm of audit hours, and *HAF* is the natural logarithm of hourly audit fees, calculated as total audit fees divided by audit hours. Variables of interest are *CHANGE* and *LOWB*. *CHANGE* is an indicator variable for auditor switches, and *LOWB* is an indicator for initial-year lowballing by the new auditor as defined in the previous section. Note that *LOWB* equals 0 whenever *CHANGE* equals 0. When *CHANGE* equals 1, *LOWB* equals 1 if current-year audit fees are lower than fees in the last year with the predecessor auditor and equals 0 if current audit fees are equal to or higher than the fees in the previous year with the predecessor auditor. We expect the coefficient on *CHANGE* to be positive (negative) if new auditors, on average, increase (decrease) audit hours or charge higher (lower) hourly audit fees. Similarly, we expect the coefficient on *LOWB* to be positive (negative) if LBAs increase (decrease) audit hours or charge higher (lower) hourly audit fees than non-LBAs do for the initial audit engagement.

We include control variables for factors expected to influence audit hours and hourly audit fees. Since prior literature documents a fee premium for Big 4 auditors (Choi et al. 2008; Hay, Knechel, and Wong 2006), we include *BIG4*, an indicator variable for Big 4 auditors. To control for the fee premium charged by industry specialist auditors (Craswell, Francis, and Taylor 1995; Francis, Reichelt, and Wang 2005), we include *ISA*, an indicator variable for industry specialist auditors. An auditor is identified as an industry specialist if the auditor has the largest market share with greater than 10% difference with the market share of the second largest industry leader (Reichelt and Wang 2010), where an audit market is defined at the two-digit K-SIC industry level in a particular year. To control for the positive relation between firm size and audit fees, we include *LNTA*, the natural logarithm of total assets. *LIQUIDITY* is current assets divided by current liabilities. *LEV* is total liability divided by total assets. *ROA* is the return on assets. *LOSS* is an indicator variable for firms that reports a net loss. *INVREC* is the sum of receivables and inventories divided by total assets. We include *LIQUIDITY*, *LEV*, *ROA*, *LOSS*, and *INVREC* as proxies for client's audit risk (Francis, Reichelt, and Wang 2005; Huang, Raghunandan, and Rama 2009; Raghunandan and Rama 2006; Simunic 1980) since auditors' exposure to audit risk is incorporated into the planning and pricing of audit services (Palmrose 1986; Simunic 1980; Simunic and Stein 1996). *OPINION* is an indicator variable for firms that receive a modified audit opinion. We include *OPINION* in our model because an auditor exerts greater audit effort when issuing an audit opinion other than a clean audit opinion (Davis, Ricchiute, and Trompeter 1993). The percentage of foreign ownership (*FOREIGN*) is included because such owners may demand higher-quality audits (Choi et al. 2008) and thus would pay higher audit fees. Since the demand for audit is greater for high-growth firms than low-growth firms (Choi and Wong 2007), we control for *SGROWTH*, the percentage change in sales from year $t - 1$ to t .

Finally, we include year-fixed effects (*YEAR FE*) and industry-fixed effects (*INDUSTRY FE*) to control for the systematic differences in the dependent variables within a certain year or industry.

SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

Sample and Data

To obtain audit fees and total audit hour data for publicly listed Korean firms, we first retrieve the relevant data from the TS-2000 database. Audit fees and hours data were mandated to be disclosed in the annual reports starting from 2003, which are publicly available on the Financial Supervisory Service's (the equivalent of Securities and Exchange Commission in the U.S.) website. We check the accuracy of the data retrieved from the database by manually inspecting audit fees and audit hours with the companies' annual reports to check the accuracy of the data retrieved from the database. Our sample starts in 2005 to make sure our results are not driven by irregularities in the Korean audit market that occurred in the early 2000s. For example, Big 4 auditors began to dominate the audit market since 2005 after two large auditor mergers that occurred in the early 2000s. In addition, several regulatory changes were made in the early 2000s to increase auditors' legal liability and improve audit quality, similar to those of the Sarbanes-Oxley Act in the U.S. Since many auditor switches occurred in response to the mergers and regulatory changes in these periods, we start our sample after the changes. This allows us to use more reliable data on audit fees and hours, which were disclosed since 2003 but were relatively inaccurate in the early years of disclosure mandates. We retrieved financial data of the sample firms from the DataGuide Pro database.

One unique characteristic of the Korean audit market is the existence of a mandatory auditor designation policy. The Financial Supervisory Service (FSS) designates external auditors to audit firms with high business and audit risks for a certain period (normally one to three years). Unlike the regular auditor changes that audit fees are determined by competitive bidding or negotiation, the audit fees for these designated auditors are set differently at very high levels (e.g., Lee and Ha 2021). Thus, to eliminate potential biases arising from the different behavior of designated auditors, we discard firm-year observations whose auditors were designated by the FSS in the current or prior year. Our sample period ends in 2015 since information on designated auditors is available only up to 2015 due to the cessation of the public release of the list of firms that were designated their auditors since 2016. Moreover, we attempt

Table 1. Sample distribution**Panel A:** Sample distribution by year

| Year | Total sample | CHANGE = 1 | LBAs | Non-LBAs | % of auditor change sample | % of LBAs |
|-------|--------------|------------|------|----------|----------------------------|-----------|
| 2005 | 889 | 158 | 60 | 98 | 17.77 | 6.75 |
| 2006 | 962 | 118 | 48 | 70 | 12.27 | 4.99 |
| 2007 | 998 | 154 | 67 | 87 | 15.43 | 6.71 |
| 2008 | 1,053 | 407 | 213 | 194 | 38.65 | 20.23 |
| 2009 | 1,086 | 138 | 89 | 49 | 12.71 | 8.20 |
| 2010 | 1,126 | 127 | 67 | 60 | 11.28 | 5.95 |
| 2011 | 1,161 | 223 | 79 | 144 | 19.21 | 6.80 |
| 2012 | 1,228 | 105 | 40 | 65 | 8.55 | 3.26 |
| 2013 | 1,348 | 127 | 57 | 70 | 9.42 | 4.23 |
| 2014 | 1,396 | 216 | 116 | 100 | 15.47 | 8.31 |
| 2015 | 1,435 | 195 | 91 | 104 | 13.59 | 6.34 |
| Total | 12,682 | 1,968 | 927 | 1,041 | 15.52 | 7.31 |

Panel B: Sample distribution by industry

| KSIC Code | Description | N | % | LBAs (%) |
|-----------|--|-----|------|----------|
| 10 | Manufacture of food products | 352 | 3.01 | 0.07 |
| 11 | Manufacture of beverages | 58 | 0.5 | 0.05 |
| 13 | Manufacture of textiles, except apparel | 124 | 1.06 | 0.06 |
| 14 | Manufacture of wearing apparel, clothing accessories and fur articles | 197 | 1.69 | 0.07 |
| 17 | Manufacture of pulp, paper and paper products | 255 | 2.18 | 0.05 |
| 20 | Manufacture of chemicals and chemical products; except pharmaceuticals and medicinal chemicals | 901 | 7.72 | 0.07 |
| 21 | Manufacture of pharmaceuticals, medicinal chemical and botanical products | 695 | 5.95 | 0.07 |
| 22 | Manufacture of rubber and plastics products | 354 | 3.03 | 0.08 |
| 23 | Manufacture of other non-metallic mineral products | 279 | 2.39 | 0.07 |
| 24 | Manufacture of basic metals | 647 | 5.54 | 0.09 |
| 25 | Manufacture of fabricated metal products, except machinery and furniture | 318 | 2.72 | 0.07 |

Table 1. (continued)

| KSIC Code | Description | N | % | LBAs (%) |
|-----------|--|-------|-------|----------|
| 26 | Manufacture of electronic components, computer; visual, sounding and communication equipment | 1,779 | 15.24 | 0.08 |
| 27 | Manufacture of medical, precision and optical instruments, watches and clocks | 307 | 2.63 | 0.07 |
| 28 | Manufacture of electrical equipment | 419 | 3.59 | 0.08 |
| 29 | Manufacture of other machinery and equipment | 918 | 7.86 | 0.07 |
| 30 | Manufacture of motor vehicles, trailers and semi-trailers | 665 | 5.7 | 0.05 |
| 31 | Manufacture of other transport equipment | 132 | 1.13 | 0.10 |
| 41 | General construction | 299 | 2.56 | 0.05 |
| 42 | Specialized construction activities | 101 | 0.87 | 0.07 |
| 46 | Wholesale trade on own account or on a fee or contract basis | 803 | 6.88 | 0.08 |
| 47 | Retail trade, except motor vehicles and motorcycles | 187 | 1.6 | 0.07 |
| 49 | Land transport and transport via pipelines | 118 | 1.01 | 0.07 |
| 58 | Publishing activities | 333 | 2.85 | 0.08 |
| 59 | Motion picture, video and television program production, sound recording and music publishing activities | 119 | 1.02 | 0.10 |
| 60 | Broadcasting activities | 60 | 0.51 | 0.00 |
| 61 | Postal activities and telecommunications | 95 | 0.81 | 0.07 |
| 62 | Computer programming, consultancy and related activities | 206 | 1.76 | 0.08 |
| 63 | Information service activities | 108 | 0.92 | 0.07 |
| 70 | Research and development | 31 | 0.27 | 0.10 |
| 71 | Professional services | 682 | 5.84 | 0.07 |
| 72 | Architectural, engineering and other scientific technical services | 52 | 0.45 | 0.12 |
| 75 | Business support service | 66 | 0.57 | 0.03 |
| 85 | Education | 16 | 0.14 | 0.00 |

Table 1 presents the distribution of the final sample either by year or by industry. Panel A provides a frequency of total observations, auditor switching firms, LBAs, and non-LBAs by fiscal year. Panel B provides the frequency of observations by industry. The industry membership is defined in accordance with two-digit industry codes of the Korean Standard Industry Classification.

to eliminate the impact of several regulatory reforms on auditor behavior that took place in Korea between 2016 and 2018. Thus, our final sample covers the period from 2005 to 2015.

We exclude all firms belonging to financial and regulated industries as they are subject to unique institutional and regulatory interventions that may affect the auditor's behavior. The final sample having all necessary data includes 12,682 firm-year observations from 2005 to 2015.

Panel A of table 1 provides a frequency of total observations, auditor switching firms (*CHANGE* = 1), LBAs (*LOWB* = 1), and non-LBAs (*LOWB* = 0) by fiscal year. The number of total firms gradually increases over time. LBAs are relatively evenly distributed throughout our sample period except in the year 2008 (i.e., the year of the global financial crisis). Among 1,968 observations that have their auditor changed (about 15 percent of the total sample), about 47 percent were offered a price discount by LBAs, suggesting that lowballing is commonly observed at the time of auditor change.

Panel B of table 1 provides the frequency of observations by industry. Industry classification is based on the two-digit KSIC code. The percentage of firms with audit fee lowballing is well distributed across industries.

Descriptive Statistics

Table 2 presents the descriptive statistics of all variables used in our study. We winsorize all continuous variables at the bottom and top one percent levels to eliminate bias in the empirical results caused by outliers. The mean values of audit hours and hourly audit fees are 1,158.16 hours and 91 thousand Korean Won, respectively (in raw value). 15.5 percent of the sample experienced auditor switches (*CHANGE* = 1), and 7.3 percent of the sample were offered price discounts for the switches (*LOWB* = 1). 54.0 percent of our sample is audited by a Big 4 auditor (*BIG4* = 1), and 10.3 percent is audited by an industry specialist auditor (*ISA* = 1). We omit further explanations on the control variables since they are self-explanatory, and we do not notice any abnormal distributions.

In panel B of table 2, we report Pearson correlations among selected variables used in our main analyses. The reported correlations are all significant at the one percent level. Hourly audit fees (*HAF*) and audit hours (*HOURL*) are significantly and negatively correlated,

Table 2. Sample characteristics**Panel A:** Descriptive Statistics ($N = 12,682$)

| Variable | Mean | Std | Min | P25 | P50 | P75 | Max |
|------------------|--------|-------|--------|--------|--------|--------|--------|
| <i>HOUR</i> | 6.730 | 0.726 | 4.913 | 6.261 | 6.624 | 7.078 | 9.103 |
| <i>HAF</i> | 11.325 | 0.409 | 10.403 | 11.072 | 11.303 | 11.550 | 12.812 |
| <i>CHANGE</i> | 0.155 | 0.362 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 |
| <i>LOWB</i> | 0.073 | 0.260 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 |
| <i>BIG4</i> | 0.540 | 0.498 | 0.000 | 0.000 | 1.000 | 1.000 | 1.000 |
| <i>ISA</i> | 0.103 | 0.303 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 |
| <i>LNTA</i> | 25.865 | 1.446 | 23.471 | 24.861 | 25.555 | 26.562 | 30.627 |
| <i>LIQUIDITY</i> | 2.241 | 2.189 | 0.319 | 1.014 | 1.499 | 2.513 | 13.159 |
| <i>LEV</i> | 0.437 | 0.199 | 0.067 | 0.276 | 0.438 | 0.585 | 0.905 |
| <i>ROA</i> | 0.014 | 0.103 | -0.479 | -0.003 | 0.030 | 0.066 | 0.204 |
| <i>LOSS</i> | 0.259 | 0.438 | 0.000 | 0.000 | 0.000 | 1.000 | 1.000 |
| <i>INVREC</i> | 0.287 | 0.147 | 0.017 | 0.177 | 0.277 | 0.385 | 0.675 |
| <i>OPINION</i> | 0.001 | 0.035 | 0.000 | 0.000 | 0.000 | 0.000 | 1.000 |
| <i>FOREIGN</i> | 0.065 | 0.110 | 0.000 | 0.002 | 0.014 | 0.072 | 0.530 |
| <i>SGROWTH</i> | 0.121 | 0.383 | -0.599 | -0.053 | 0.059 | 0.196 | 2.247 |

Panel B: Correlations among selected variables

| | | (1) | (2) | (3) | (4) |
|-----|---------------|-----|-------|-------|-------|
| (1) | <i>HOUR</i> | | -0.44 | -0.03 | -0.04 |
| (2) | <i>HAF</i> | | | -0.04 | -0.07 |
| (3) | <i>CHANGE</i> | | | | 0.65 |
| (4) | <i>LOWB</i> | | | | |

Table 2 presents the descriptive statistics for variables used in equation (1). Panel A presents the descriptive statistics, and Panel B presents the Pearson correlation coefficients. All variables are defined in the Appendix.

suggesting that auditors charge less hourly audit fees to clients that require greater audit hours. Both auditor change (*CHANGE*) and lowballing (*LOWB*) indicator variables are negatively correlated with *HOUR* and *HAF*, suggesting that audit hours and hourly audit fees are lower at the time of auditor change and audit fee lowballing. However, since the correlations do not control for other factors that may affect the components of audit fees, we proceed to multivariate

analyses in the subsequent section to investigate our research question.

EMPIRICAL FINDINGS

Test of H1 – Audit Fee Lowballing and Audit Hours

Table 3 presents the results of ordinary least squares (OLS) regressions using Eq. (1) to test hypothesis 1a. In hypothesis 1a, we test whether LBAs reduce audit hours to avoid incurring losses from lowballing engagements or increase audit hours to cope with high audit risks inherent in initial audits. The dependent variable is the natural logarithm of audit hours (*HOUR*). Columns (1) and (3) test the effect of auditor changes (*CHANGE*), and columns (2) and (4) additionally test the effect of lowballing auditors (*LOWB*). Columns (1) and (2) include only industry-fixed effects, and columns (3) and (4) include both year- and industry-fixed effects.

First, we find that the coefficient on *CHANGE* is positive and significant in all columns. For example, in column (1), the coefficient on *CHANGE* is 0.025 (*t*-value = 2.72), suggesting that auditors exert greater audit efforts in initial audit engagements consistent with arguments made by Gregory and Collier (1996) and O'Keefe, Simunic, and Stein (1994). In addition, we find that the coefficient on *LOWB* is insignificant in both columns (2) and (4). The insignificant coefficient suggests that LBAs exert as much audit efforts as non-LBAs, putting more audit efforts for initial audit engagements than for continuous audit engagements to reduce higher audit risks inherent in new audits. Thus, LBAs do not put less audit effort than non-LBAs, inconsistent with hypothesis 1a.^{3),4)}

3) In an analysis of audit hours, Schelleman and Knechel (2010) find a negative coefficient on initial audits (included as a control variable). Our findings on increased audit effort for LBAs contradict their findings. Since Schelleman and Knechel (2010) conduct their survey to collect audit hour data in 1997, whereas our sample period starts in 2005, we believe it is most likely that the different results are caused by increased audit regulations after the Enron Scandal and the collapse of Arthur Andersen in 2002. Under more stringent legal liabilities that auditors face since 2002 than before, auditors are less likely to compromise audit quality even when they offer a lowballing price to attract new clients. We believe the impact of regulations and time trends on auditors' lowballing behavior would be an excellent avenue for future research.

Table 3. Changes in Audit Hours for Lowballing Auditors

| Dep. Variable = <i>HOUR</i> | (1) | (2) | (3) | (4) |
|-----------------------------|----------------------|----------------------|----------------------|----------------------|
| <i>CHANGE</i> | 0.025*** (2.72) | 0.027** (1.97) | 0.043*** (4.84) | 0.043*** (3.32) |
| <i>LOWB</i> | | -0.004 (-0.22) | | 0.000 (0.01) |
| <i>BIG4</i> | 0.227*** (13.14) | 0.227*** (13.11) | 0.246*** (14.46) | 0.246*** (14.43) |
| <i>ISA</i> | 0.115*** (5.30) | 0.115*** (5.29) | 0.120*** (5.45) | 0.120*** (5.45) |
| <i>LNTA</i> | 0.367*** (40.35) | 0.367*** (40.35) | 0.348*** (35.43) | 0.348*** (35.43) |
| <i>LIQUIDITY</i> | -0.002 (-0.41) | -0.002 (-0.41) | -0.003 (-0.83) | -0.003 (-0.83) |
| <i>LEV</i> | 0.035 (0.56) | 0.035 (0.56) | (0.038) (0.61) | 0.038 (0.61) |
| <i>ROA</i> | -0.443*** (-5.59) | -0.443*** (-5.59) | -0.417*** (-5.56) | -0.417*** (-5.56) |
| <i>LOSS</i> | 0.056*** (3.60) | 0.056*** (3.60) | 0.046*** (3.05) | 0.046*** (3.04) |
| <i>INVREC</i> | 0.057 (0.81) | 0.057 (0.8) | 0.059 (0.84) | 0.059 (0.84) |
| <i>OPINION</i> | -0.144 (-1.03) | -0.144 (-1.03) | -0.099 (-0.77) | -0.099 (-0.77) |
| <i>FOREIGN</i> | 0.260*** (2.77) | 0.260*** (2.77) | 0.346*** (3.59) | 0.346*** (3.59) |
| <i>SGROWTH</i> | -0.077*** (-7.30) | -0.077*** (-7.30) | -0.026** (-2.50) | -0.026** (-2.50) |
| Year FE | No | No | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes |
| Observations | 12,682 | 12,682 | 12,682 | 12,682 |
| Adj. R ² | 0.654 | 0.654 | 0.677 | 0.677 |

Table 3 reports the results of testing the relation between auditor fee lowballing and audit hours using OLS. *t*-statistics for the coefficients are calculated based on standard errors clustered at the firm level and are presented in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively, in two-tailed tests.

In terms of the control variables, we find that both Big 4 (*BIG4*) and industry specialist (*ISA*) auditors spend more audit hours for their audits, potentially revealing how these auditors can provide higher quality audit service. In addition, auditors tend to put more audit hours in firms that are larger (*LNTA*), are less profitable (*ROA* and *LOSS*), have a higher percentage of foreign ownership (*FOREIGN*), and experience lower growth (*SGROWTH*). These findings are consistent with those reported in prior studies (e.g., Craswell, Francis, and Taylor 1995; Francis, Reichelt, and Wang 2005; Huang, Raghunandan, and Rama 2009; Raghunandan and Rama 2006; Simunic 1980). Thus, auditors included in our sample exhibit characteristics that are similar to those observed in prior studies. The reported explanatory power of the model (the adjusted R^2) ranges from 65.4 to 67.7 percent, suggesting that our model explains the audit hours reasonably well.

Test of H2 – Audit Fee Lowballing and Hourly Audit Fees

Table 4 presents OLS regression results for testing hypothesis 1b using Eq. (1). The dependent variable is hourly audit fees (*HAF*). Columns (1) and (3) test the effect of auditor changes (*CHANGE*), and columns (2) and (4) additionally test the effect of lowballing auditors (*LOWB*). Columns (1) and (2) include only industry-fixed effects, and columns (3) and (4) include both year- and industry-fixed effects.

In columns (1) and (3), we find significantly negative coefficients on *CHANGE*. For example, in column (1), the coefficient on *CHANGE* is negative (−0.060) and highly significant (t -value = −7.13), suggesting

4) To corroborate our findings on audit effort, we also directly examine the effect of lowballing on audit quality. Specifically, we use the absolute value of discretionary accruals using two different approaches by Dechow, Sloan, and Sweeney (1995) and Kothari, Leone, and Wasley (2005) as a proxy for audit quality. From Eq. (1), we additionally control for operating cash flows, the market-to-book ratio, Z-Score, existence of external financing, and cash flow volatility; and exclude *ROA*, *INVREC*, *OPINION*, and *FOREIGN*. Untabulated results reveal that, although the average audit quality is lower in the initial year of audits, LBAs do not provide audit services of inferior quality than do non-LBAs. Thus, we find no evidence on either reduced audit effort or impaired audit quality for lowballing auditors. Nevertheless, since our analysis on audit quality is only preliminary, we believe further detailed examination should be conducted on how lowballing affects audit quality in future research.

that auditors, on average, charge lower hourly audit fees for initial audit engagements.

However, the results change dramatically in columns (2) and (4) when we add *LOWB* in the regression model. In column (2), the coefficient on *CHANGE* is still negative (-0.001) but becomes insignificant (t -value = -0.09), suggesting that non-LBAs do not lower hourly audit fees. In contrast, the coefficient on *LOWB* is negative (-0.126) and highly significant (t -value = -6.55), suggesting that LBAs charge lower hourly audit fees consistent with hypothesis 1b. Thus, the negative coefficient on *CHANGE* reported in column (1) is caused by LBAs. Unlike LBAs, non-LBAs do not lower hourly audit fees in the initial year of audit engagements. The results in columns (3) and (4) are consistent with those in columns (1) and (2).

Combined with the findings in table 3, the results suggest that LBAs charge lower audit fees to new clients by reducing hourly audit fees but do not reduce audit effort. Thus, the results may provide an explanation for the inconclusive evidence on how initial-year lowballing affects audit quality (e.g., Barua, Lennox, and Raghunandan 2020; Gul, Fung, and Jaggi 2009).⁵⁾

For the control variables, the coefficients on *BIG4* and *ISA* are negative and significant, suggesting that Big 4 and industry specialist auditors charge lower hourly fees. Combined with the significantly positive coefficient on the variables reported in table 3, the results suggest that Big 4 and industry specialist auditors exert more audit effort but charge less hourly fees, consistent with the findings of Bae, Choi, and Rho (2016). In addition, we report that auditors charge higher hourly audit fees for highly levered firms (*LEV*) and more

5) The lower hourly audit fees of LBAs may be driven either by LBAs simply charging lower hourly audit fees and absorbing the temporary losses to attract new clients, or by LBAs replacing senior auditors with junior ones to reduce audit costs. In the latter case, audit quality may be impaired even when there is no reduction in audit hours. We provide preliminary evidence on this issue by examining the labor mix of auditors. Specifically, utilizing the disclosure on the composition of audit members since 2014, we examine whether the percentage of audit hours spent per audit team members' position differ for LBAs. In untabulated tests, we find no evidence of changes in the percentage of labor hours spent by different positions of audit team members. Combined with the results on audit quality in the previous footnote, we carefully conclude that LBAs are assuming temporary losses to attract new clients. However, since our additional tests are only preliminary, further investigation is required to provide conclusive evidence.

Table 4. Changes in Hourly Audit Fees for Lowballing Auditors

| Dep. Variable = HAF | (1) | (2) | (3) | (4) |
|---------------------|----------------------|----------------------|----------------------|----------------------|
| <i>CHANGE</i> | -0.060*** (-7.13) | -0.001 (-0.09) | -0.077*** (-8.91) | -0.015 (-1.18) |
| <i>LOWB</i> | | -0.126*** (-6.55) | | -0.132*** (-7.01) |
| <i>BIG4</i> | -0.112*** (-6.88) | -0.114*** (-7.00) | -0.126*** (-7.85) | -0.128*** (-7.98) |
| <i>ISA</i> | -0.043** (-2.35) | -0.045** (-2.46) | -0.050*** (-2.68) | -0.052*** (-2.78) |
| <i>LNTA</i> | -0.012* (-1.69) | -0.012* (-1.68) | 0.003 (0.43) | 0.003 (0.43) |
| <i>LIQUIDITY</i> | -0.003 (-0.63) | -0.003 (-0.61) | -0.001 (-0.28) | -0.001 (-0.25) |
| <i>LEV</i> | 0.119* (2.21) | 0.115** (2.14) | 0.123** (2.29) | 0.119** (2.22) |
| <i>ROA</i> | -0.087 (-1.23) | -0.089 (-1.27) | -0.097 (-1.39) | -0.099 (-1.43) |
| <i>LOSS</i> | -0.023 (-1.60) | -0.023 (-1.64) | -0.014 (-1.01) | -0.015 (-1.06) |
| <i>INVREC</i> | -0.006 (-0.1) | -0.007 (-0.12) | -0.003 (-0.05) | -0.004 (-0.06) |
| <i>OPINION</i> | 0.161 (1.17) | 0.158 (1.14) | 0.130 (1.01) | 0.125 (0.98) |
| <i>FOREIGN</i> | 0.250*** (3.27) | 0.252*** (3.29) | 0.164** (2.07) | 0.167** (2.10) |
| <i>SGROWTH</i> | 0.026** (2.51) | 0.025** (2.43) | -0.004 (-0.36) | -0.005 (-0.49) |
| Year FE | No | No | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes |
| Observations | 12,682 | 12,682 | 12,682 | 12,682 |
| Adj. R ² | 0.048 | 0.051 | 0.087 | 0.091 |

Table 4 reports the results of testing the relation between audit fee lowballing and hourly audit fees using OLS. All variables are defined in the Appendix. *t*-statistics for the coefficients are calculated based on standard errors clustered at the firm level and are presented in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively, in two-tailed tests.

complex firms (*FOREIGN* and *SGROWTH*).

Test Using Propensity-Score Matching

The analyses in previous sections provide evidence on the impacts of auditor change and audit fee lowballing on the components of audit fees. However, we note that differences in sample characteristics between firms with and without auditor changes may drive our main results. For example, firms with hidden audit risks, which are not captured well by our model, may switch auditors and, at the same time, cause auditors to exert greater audit effort. Therefore, correlated omitted variables such as audit risks may simultaneously determine both auditor change and audit hours.

In this section, we examine whether differences in auditor responses (i.e., adjustment of audit hours and hourly audit fees) between firms with and without auditor change are driven by the difference in average characteristics of the firms. We employ a propensity-score matching model to control for differences in firm characteristics and auditor characteristics between the two groups and re-estimate the effects of auditor change on auditor behavior.

We first run a logit model to predict the probability that a firm changes its auditor. We match firms that change their auditors to firms that do not change their auditors and have the closest propensity score within the same year and industry. Consistent with suggestions made by Shipman, Swanquist, and Whited (2017), we include all control variables used in our main analyses in the first-stage prediction model. We successfully match 1,961 auditor change firm-year observations with an equal number of firm-year observations without auditor change. To examine whether the matching procedure successfully reduces the differences in firm characteristics between the two groups, we report the covariate balance in panel A of table 5. Before matching, there exist clear statistical differences among many variables, as reported in column (3). In contrast, we achieve a very strong covariate balance after matching, as none of the control variables are significantly different across the treatment and control samples at the one percent level as reported in column (6).

In panel B of table 5, we replicate the results of tables 3 and 4 using the matched sample. In columns (1) and (2), the dependent variable is *HOURLY*, and in columns (3) and (4), the dependent variable is *HAF*.

Table 5. Propensity-Score Matching of Firms with and without Auditor Change**Panel A:** Covariate balance

| | Full sample | | | Propensity score matched sample | | |
|------------------|---------------|------------------|------------|---------------------------------|------------------|------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Change sample | No Change sample | Difference | Change sample | No Change sample | Difference |
| | (mean) | (mean) | (means) | (mean) | (mean) | (means) |
| <i>BIG4</i> | 0.461 | 0.554 | -0.093*** | 0.461 | 0.554 | -0.093 |
| <i>ISA</i> | 0.089 | 0.104 | -0.015** | 0.088 | 0.091 | -0.003 |
| <i>LNTA</i> | 25.721 | 25.890 | -0.169*** | 25.719 | 25.719 | 0.000 |
| <i>LIQUIDITY</i> | 2.213 | 2.247 | -0.034 | 2.216 | 2.243 | -0.027 |
| <i>LEV</i> | 0.440 | 0.436 | 0.004 | 0.439 | 0.444 | -0.005 |
| <i>ROA</i> | 0.007 | 0.016 | -0.009*** | 0.007 | 0.005 | 0.002 |
| <i>LOSS</i> | 0.287 | 0.254 | 0.033*** | 0.286 | 0.295 | -0.009 |
| <i>INVREC</i> | 0.285 | 0.288 | -0.003 | 0.285 | 0.288 | -0.003 |
| <i>OPINION</i> | 0.002 | 0.001 | 0.001 | 0.002 | 0.001 | 0.001 |
| <i>FOREIGN</i> | 0.056 | 0.066 | -0.010*** | 0.056 | 0.066 | -0.010 |
| <i>SGROWTH</i> | 0.129 | 0.119 | 0.010 | 0.129 | 0.119 | 0.010 |
| Observations | 1,968 | 10,714 | | 1,961 | 1,961 | |

Panel B: Regression results using propensity-score-matched sample

| Dependent variables | Hypotheses 1a and 1b | | | |
|---------------------|----------------------|--------------------|----------------------|----------------------|
| | (1) | (2) | (3) | (4) |
| | <i>HOUR</i> | <i>HOUR</i> | <i>HAF</i> | <i>HAF</i> |
| <i>CHANGE</i> | 0.038*** (3.17) | 0.040*** (2.72) | -0.071*** (-6.03) | -0.010 (-0.67) |
| <i>LOWB</i> | | -0.005 (-0.28) | | -0.130*** (-6.78) |
| Control variables | Included | Included | Included | Included |
| Year FE | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes |
| Observations | 3,922 | 3,922 | 3,922 | 3,922 |
| Adj. R ² | 0.657 | 0.657 | 0.095 | 0.107 |

Table 5 presents the results of using a propensity-score matching approach for auditor changes. Panel A presents the characteristics of the sample with and without auditor changes in the full sample and in the propensity-score-matched sample. Panel B presents the regression results testing Hypotheses 1a and 1b with the propensity-score-matched sample. All variables are defined in the Appendix. *t*-statistics for the coefficients are calculated based on standard errors clustered at the firm level and are presented in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively, in two-tailed tests.

We report the results of the test variables only and omit those of other control variables in panel B of table 5 (and in panel B of table 6) for brevity. We find that all results are qualitatively similar to those tabulated previously, alleviating the concern that our empirical results are due to the endogeneity of auditor changes.

We again note that the characteristics of firms hiring LBAs and non-LBAs may be systematically different and thus drive the main findings of the study. For example, firms with high bargaining power over the auditor may hire auditors who are willing to provide large price discounts in the initial year and also pressure the auditor to exert greater effort. To address potential differences between LBA- and non-LBA-hiring firms, we again employ a propensity-score matching model. Specifically, restricting the sample to auditor-changing firms, we run a logit model to predict the probability that a firm hires an LBA. We match firms that hire LBAs to those that hire non-LBAs with the closest propensity score within the same year and industry. We successfully match 692 LBA firm-year observations with an equal number of non-LBA firm-year observations.

To examine the effectiveness of the matching procedure, we review the covariate balance for our sample observations and report the results in panel A of table 6. Before matching, we observe significant differences in sample distributions across many variables as reported in columns (1) to (3). After matching, we achieve a very balanced sample as none of the control variables are significantly different across the treatment and control samples at the one percent level as reported in columns (4) to (6).

Results of replicating those in tables 3 and 4 using the matched sample are reported in panel B of table 6. In column (1), the dependent variable is *HOUR*, and in column (2), the dependent variable is *HAF*. Again, the results after matching are consistent with those reported previously in terms of the signs and significance of the coefficients.

ADDITIONAL ANALYSES

We perform a number of sensitivity tests to ensure that our results are not driven by methodological choices. We briefly explain the results of sensitivity analyses in this section without tabulation.

Table 6. Propensity Score Matching of Lowballing Auditors and Non-Lowballing Auditors for Auditor Change Sample**Panel A:** Covariate balance

| | Auditor Change sample | | | Propensity score matched sample | | |
|------------------|-----------------------|-------------------|-----------------------|---------------------------------|-------------------|-----------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | LBA (mean) | Non-LBA (mean) | Difference (means) | LBA (mean) | Non-LBA (mean) | Difference (means) |
| <i>BIG4</i> | 0.404 | 0.508 | -0.104*** | 0.449 | 0.437 | 0.012 |
| <i>ISA</i> | 0.062 | 0.108 | -0.046*** | 0.073 | 0.061 | 0.012 |
| <i>LNTA</i> | 25.636 | 25.787 | -0.151** | 25.693 | 25.714 | -0.021 |
| <i>LIQUIDITY</i> | 2.407 | 2.037 | 0.370*** | 2.223 | 2.190 | 0.033 |
| <i>LEV</i> | 0.419 | 0.459 | -0.040*** | 0.438 | 0.436 | 0.002 |
| <i>ROA</i> | 0.006 | 0.007 | -0.001 | 0.006 | 0.006 | 0 |
| <i>LOSS</i> | 0.286 | 0.291 | -0.005 | 0.281 | 0.300 | -0.019 |
| <i>INVREC</i> | 0.280 | 0.289 | -0.009 | 0.289 | 0.284 | 0.005 |
| <i>OPINION</i> | 0.001 | 0.002 | -0.001 | 0.001 | 0 | 0.001 |
| <i>FOREIGN</i> | 0.054 | 0.055 | -0.001 | 0.053 | 0.053 | 0 |
| <i>SGROWTH</i> | 0.111 | 0.147 | -0.036** | 0.129 | 0.121 | 0.008 |
| Observations | 927 | 1,041 | | 751 | 751 | |

Panel B: Regression results using propensity-score-matched sample

| Dependent variables | Hypotheses 1a and 1b | |
|---------------------|----------------------|----------------------|
| | (1) | (2) |
| | <i>HOURLY</i> | <i>HAF</i> |
| <i>LOWB</i> | 0.019 (0.86) | -0.149*** (-6.91) |
| Control variables | Included | Included |
| Year FE | Yes | Yes |
| Industry FE | Yes | Yes |
| Observations | 1,502 | 1,502 |
| Adj. R ² | 0.642 | 0.104 |

Table 6 presents the results of using a propensity-score matching approach for lowballing and non-lowballing auditors within the sample of firms that switched auditors. Panel A presents the characteristics of the sample with lowballing auditors and other auditors in the full sample and in the propensity-score-matched sample. Panel B presents the regression results testing Hypotheses 1a and 1b with the propensity-score-matched sample. All variables are defined in the Appendix. *t*-statistics for the coefficients are calculated based on standard errors clustered at the firm level and are presented in parentheses. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels, respectively, in two-tailed tests.

Audit Hours and Hourly Audit Fees of LBAs in Subsequent Years

In our previous analyses, we investigate the contemporaneous relationship between audit fee lowballing and auditors' response. We further examine the behavior of new auditors and LBAs by testing audit hours and hourly audit fees in the second and third years of the audit engagement.

In terms of audit hours, we find that auditors, including both LBAs and non-LBAs, exert higher effort in the second year of the initial engagement as well, suggesting that the auditors' behavior in initial audit engagements persists beyond the first year of audits. However, we find that the audit hours of non-LBAs revert to the normal level in the third year, such that audit hours exerted in the third year do not significantly differ from those of longer-tenured auditors. The audit hours of LBAs also revert to the normal level in the third year.

With respect to hourly audit fees, auditors' behavior in the initial year of audits continues to be observed in the second year: non-LBAs charge similar levels of audit fees as in other years of audits, and only LBAs charge lower audit fees. In the third year of audits, non-LBAs charge rather higher hourly audit fees than the average audit fees in other years of audits. However, LBAs continue to charge hourly audit fees that are lower than non-LBAs in the third year, suggesting that LBAs discount of hourly audit fees persists at least up to three years of the auditor's tenure.

Excluding Upward and Downward Auditor Changes

Big 4 auditors have a greater reputation to protect. Since they suffer greater losses from reputational damage, Big 4 auditors are expected to charge higher audit fees and provide higher-quality audits (DeAngelo 1981). A number of empirical studies document evidence of Big 4 auditors providing higher audit quality and charging higher audit fees than non-Big 4 auditors (e.g., Boone, Khurana, and Raman 2010; Craswell, Francis, and Taylor 1995; DeFond and Zhang 2014; Eshleman and Guo 2014).

Since Big 4 auditors charge a premium for their audits, our results may be driven by auditor changes across different types of auditors. For example, if LBAs identified in this study are in fact selecting downward auditor changes, i.e., Big 4 to non-Big 4 auditor changes,

and non-LBAs are capturing upward auditor changes, i.e., non-Big 4 to Big 4 changes, then the reported findings may be an artifact of different audit technologies that different types of auditors employ. To address this issue, we replicate our main analyses after excluding observations of auditor changes that occur across different types of auditors. Our main findings remain robust with this restricted sample of lateral auditor changes.⁶⁾

Continuous Variable of Lowballing

In the main analyses, we use an indicator variable, *LOWB*, to identify auditors that charge low audit fees in the initial engagement year. Alternatively, we construct a continuous proxy for lowballing as the percentage change in audit fees in the initial year of audits, i.e., changes in audit fees from year $t - 1$ to year t divided by audit fees in year $t - 1$. All results previously reported are replicated with the alternative proxy. Thus, we conclude that our findings are robust to considering the magnitude of lowballing.

Effect of the Global Financial Crisis

Panel A of table 1 reveals that auditor changes occurred most frequently in year 2008 at the time of the global financial crisis. A total of 407 auditor changes occurred in 2008, which outnumbers the average of 179 auditor changes per year that occurred during our sample period. These frequent auditor changes in 2008 may be a consequence of the crisis. To remove the potential effect of the global financial crisis on our findings, we remove all observations from year 2008 and reperform our empirical analysis. We find that our results do not change qualitatively for this modification.

6) We also examine whether a lowballing auditor's behavior differs for upward or downward auditor switches. In untabulated tests, we do not find any evidence of upward or downward auditor switches exhibiting different lowballing behavior. In addition, our main results remain robust to controlling for potential differential effects of auditor switching across different auditor types. However, we interpret such results with caution since the power of the tests are small due to the small sample of upward auditor switches.

CONCLUSION

Summary and Discussions

In this paper, we investigate how auditors change their audit hours and hourly audit fees when providing a fee discount in the initial year of an audit engagement. Comparing LBAs to non-LBAs in their initial audit engagement year, we find that LBAs charge significantly lower hourly audit fees than non-LBAs but do not exert less audit effort. The finding suggests that LBAs reduce hourly fees to win an audit contract but do not necessarily reduce audit hours to avoid losses. We interpret it as evidence that auditors put a sufficient amount of effort to provide an appropriate level of audit quality in the initial year of audits, despite the lower fees expected from the engagement.

Regulators in many different countries are currently considering, or have already adopted, a mandatory auditor rotation policy. Requiring firms to change auditors periodically through this policy increases the frequency of auditor changes. In this case, auditors will have to compete for a new client more often, and competition would intensify in the audit market. Accordingly, we expect that lowballing will occur more frequently and in a greater magnitude if a mandatory auditor rotation policy is adopted. By examining the response of auditors to a lowballing engagement, our study provides in-depth, valuable, and timely insights into the potential changes in auditor behavior that may accompany auditor rotation requirements.

Limitations

While our findings would be of interest to regulators, accounting and auditing scholars, and other various related parties, we acknowledge the following potential limitations of our study. First, we do not differentiate the reasons for auditor change in our empirical analysis because we are not able to obtain detailed information on why Korean firms changed their auditors. If auditor lowballing is systematically related to certain types of auditor changes, our findings could be distorted. For example, new auditors may systematically respond differently to clients whose previous auditor was dismissed by the client and to clients whose previous auditor has resigned.

Second, although our findings provide important implications for

the audit quality of lowballing auditors, we do not directly investigate audit quality in our analyses. Rather, we provide a detailed analysis of an auditor's lowballing behavior itself, which enables us to understand lowballing more thoroughly and advance our discussions on the consequences of lowballing. Thus, our study complements prior studies that directly examine audit quality and should be understood in conjunction with them to depict a complete picture. Nevertheless, given that the fundamental concern of regulators lies in the potential impairment of audit quality, we recommend future studies to further look into how lowballing affects audit quality.

Third, our study examines lowballing in a voluntary auditor rotation setting. While we attempt to provide valuable implications on the controversy surrounding the benefits and costs of mandatory auditor rotation, our study examines auditor changes in a voluntary rotation regime. Thus, it is not clear whether the behaviors of firms and auditors under voluntary contracting can be generalized to those under mandatory rotation requirements. Accordingly, our results should be interpreted with caution in terms of policy implications.

Fourth, since we use data from a single country, Korea, our findings may not be generalized to auditor behavior in other countries. A firm's audit environment and accounting enforcement levels differ significantly across countries (Brown, Preiato, and Tarca 2014), which may, in turn, cause auditors to behave differently. For example, auditors who are exposed to greater legal liabilities in certain countries may not necessarily charge lower fees in their initial audit engagements. Similarly, auditors with a smaller liability exposure may not increase audit effort even when initial audits are riskier.

Fifth, several regulatory reforms took place in Korea after 2015, in which our sample period ends. The regulatory reforms that occurred after the end of our sample period may have systematically changed the way auditors behave. Thus, one may need to further examine how regulatory reforms would change auditor behavior in initial audit engagements to ensure that our results are valid in more recent periods. We recommend future studies look into these issues more deeply.

APPENDIX

Variable Definitions

| Variable Name | Definition |
|-----------------------------------|---|
| <i>Dependent variables</i> | |
| <i>HOUR</i> | The natural logarithm of audit hours; |
| <i>HAF</i> | The natural logarithm of audit fees per hour; |
| <i>Test variables</i> | |
| <i>CHANGE</i> | An indicator variable that equals 1 for firms that changed their auditor in the current year, and 0 otherwise; |
| <i>LOWB</i> | An indicator variable that equals 1 for firms that changed their auditor and, at the same time, paid lower audit fees in the current year than in the preceding year, and 0 otherwise; |
| <i>Control variables</i> | |
| <i>BIG4</i> | An indicator variable that is 1 if a company is audited by a Big 4 auditor, and 0 otherwise; |
| <i>ISA</i> | An indicator variable that equals 1 if the firm is audited by an audit firm that is an industry specialist, where an industry specialist is defined as the auditor having the largest market share in a two-digit KSIC category with greater than 10% difference in market share with the second largest industry leader in an audit market (Reichelt and Wang 2010); |
| <i>LNTA</i> | The natural logarithm of total assets; |
| <i>LIQUIDITY</i> | Current assets divided by current liabilities; |
| <i>LEV</i> | Total liabilities divided by total assets; |
| <i>ROA</i> | Net income divided by total assets; |
| <i>LOSS</i> | An indicator variable that equals 1 if the firm reports a net loss, and 0 otherwise; |
| <i>INVREC</i> | The sum of inventories and receivables divided by total assets; |
| <i>OPINION</i> | An indicator variable that is 1 if the firm receives a modified audit opinion, and 0 otherwise; |
| <i>FOREIGN</i> | The percentage of foreign ownership; |
| <i>SGROWTH</i> | Growth in sales from the preceding year. |

REFERENCES

- American Institute of Certified Public Accountants (AICPA) (1978), *Commission on Auditors' Responsibilities: Report, Conclusions, and Recommendations*, New York, NY: AICPA.
- Bae, G. S., S. U. Choi, and J. E. Lee (2019), "Auditor Industry Specialization and Audit Pricing and Effort," *Auditing: A Journal of Practice & Theory*, 38(1), 51–75.
- Bae, G. S., S. U. Choi, and J. H. Rho (2016), "Audit Hours and Unit Audit Price of Industry Specialist Auditors: Evidence from Korea," *Contemporary Accounting Research*, 33(1), 314–340.
- Barua, A., C. Lennox, and A. Raghunandan (2020), "Are Audit Fees Discounted in Initial Year Audit Engagements?" *Journal of Accounting and Economics*, 69(2–3), 101–281.
- Bedard, J. C. and K. M. Johnstone (2004), "Earnings Manipulation Risk, Corporate Governance Risk, and Auditors' Planning and Pricing Decisions," *The Accounting Review*, 79(2), 277–304.
- Blankley, A. I., D. N. Hurltt, and J. E. MacGregor (2012), "Abnormal Audit Fees and Restatements," *Auditing: A Journal of Practice & Theory*, 31(1), 79–96.
- Boone, J., I. K. Khurana, and K. Raman (2010), "Do the Big 4 and the Second-Tier Firms Provide Audits of Similar Quality?" *Journal of Accounting and Public Policy*, 29(4), 300–352.
- Brown, P., J. Preiato, and A. Tarca (2014), "Measuring Country Differences in Enforcement of Accounting Standards: An Audit and Enforcement Proxy," *Journal of Business Finance & Accounting*, 41(1–2), 1–52.
- Caramanis, C. and C. Lennox (2008), "Audit Effort and Earnings Management," *Journal of Accounting and Economics*, 45(1), 116–138.
- Causholli, M., M. D. Martinis, D. Hay, and W. R. Knechel (2010), "Audit Markets, Fees and Production: Towards an Integrated View of Empirical Audit Research," *Journal of Accounting Literature*, 29, 167–215.
- Chan, D. (1999), "Low-Balling and Efficiency in a Two-Period Specialization Model of Auditing Competition," *Contemporary Accounting Research*, 16(4), 609–642.
- Cho, M., S. Y. Kwon, and G. V. Krishnan (2020), "Audit Fee Lowballing: Determinants, Recovery, and Future Audit Quality," *Journal of Accounting and Public Policy*. Advance online publication. <https://doi.org/10.1016/j.jaccpubpol.2020.106787>
- Choi, J.-H., J.-B. Kim, X. Liu, and D. A. Simunic (2008), "Audit Pricing, Legal Liability Regimes, and Big 4 Premiums: Theory and Cross-Country Evidence," *Contemporary Accounting Research*, 25(1), 55–99.
- Choi, J.-H. and T. J. Wong (2007), "Auditors' Governance Functions and

- Legal Environments: An International Investigation," *Contemporary Accounting Research*, 24(1), 13–46.
- Chun, H. M. and C. S. Rhee (2015), "Analyst Coverage and Audit Efforts: Empirical Approach to Audit Hours," *Journal of Applied Business Research*, 31(3), 55–99.
- Craswell, A. and J. Francis (1999), "Pricing Initial Audit Engagements: A Test of Competing Theories," *The Accounting Review*, 74(2), 201–115.
- Craswell, A., J. Francis, and S. Taylor (1995), "Auditor Brand Name Reputations and Industry Specializations," *Journal of Accounting and Economics*, 20(3), 297–322.
- Davis, L., D. Ricchiute, and G. Trompeter (1993), "Audit Effort, Audit Fees, and the Provision of Non-Audit Services to Audit Clients," *The Accounting Review*, 68(1), 135–150.
- DeAngelo, L. E. (1981), "Auditor Size and Audit Quality," *Journal of Accounting and Economics*, 3(3), 183–199.
- Dechow, P. M., R. G. Sloan, and A. P. Sweeney (1995), "Detecting Earnings Management," *The Accounting Review*, 70(2), 193–225.
- DeFond, M. and J. Zhang (2014), "A Review of Archival Auditing Research," *Journal of Accounting and Economics*, 58(2–3), 275–326.
- Desir, R., J. R. Casterella, and J. Kokina (2014), "A Reexamination of Audit Fees for Initial Audit Engagements in the Post-SOX Period," *Auditing: A Journal of Practice & Theory*, 33(2), 59–78.
- Dopuch, N. and R. R. King (1996), "The Effects of Lowballing on Audit Quality: An Experimental Markets Study," *Journal of Accounting, Auditing & Finance*, 11(1), 45–68.
- Dye, R. (1991), "Informationally Motivated Auditor Replacement," *Journal of Accounting and Economics*, 14(4), 347–374.
- Eshleman, J. D. and P. Guo (2014), "Do Big 4 Auditors Provide Higher Audit Quality After Controlling for the Endogenous Choice of Auditor?" *Auditing: A Journal of Practice & Theory*, 33(4), 197–219.
- Ettredge, M. and R. Greenberg (1990), "Determinants of Fee Cutting on Initial Audit Engagements," *Journal of Accounting Research*, 28(1), 198–210.
- Financial Supervisory Service (2003), *Amendments to Accounting Information Disclosure Requirements to Increase Transparency of Public Corporations* (January 6) Available at: https://www.fss.or.kr/fss/kr/promo/bodobbs_view.jsp?s_kind=&s_title=&page=&seqno=7808 (accessed on July 14, 2021).
- Francis, J. R., K. Reichelt, and D. Wang (2005), "The Pricing of National and City-Specific Reputations for Industry Expertise in the U.S. Audit Market," *The Accounting Review*, 80, 113–136.
- Francis, J. R. and D. T. Simon (1987), "A Test of Audit Pricing in the Small-Client Segment of the U.S. Audit Market," *The Accounting Review*, 62,

- 145–157.
- Ghosh, A. and S. Lustgarten (2006), "Pricing of Initial Audit Engagements by Large and Small Audit Firms," *Contemporary Accounting Research*, 23(2), 333–368.
- Gregory, A. and P. Collier (1996), "Audit Fees and Auditor Change: An Investigation of the Persistence of Fee Reduction by Type of Change," *Journal of Business Finance & Accounting*, 23(1), 13–28.
- Gul, F. A., S. Fung, and B. Jaggi (2009), "Earnings Quality: Some Evidence on the Role of Auditor Tenure and Auditors' Industry Expertise," *Journal of Accounting and Economics*, 47(3), 265–287.
- Hay, D. C., W. R. Knechel, and N. Wong, (2006), "Audit Fees: A Meta-Analysis of the Effect of Supply and Demand Attributes," *Contemporary Accounting Research*, 23(1), 141–191.
- Healy, P. (2005), *The Challenges Facing Auditors and Analysts in U.S. Capital Markets*, The Saxe Lecture in Accounting, Delivered at Baruch College, New York, NY, April 4. Available at: [http://newman.baruch.cuny.edu/DIGITAL/saxe/saxe 2005/healy 05.html](http://newman.baruch.cuny.edu/DIGITAL/saxe/saxe%2005/healy%2005.html) (accessed on September 10, 2018).
- Huang, H-W., K. Raghunandan, and D. Rama (2009), "Audit Fees for Initial Audit Engagements Before and After SOX," *Auditing: A Journal of Practice and Theory*, 28(1), 171–190.
- Johnstone, K. M. and J. C. Bedard (2001), "Engagement Planning, Bid Pricing, and Client Response in the Market for Initial Audit Engagements," *The Accounting Review*, 76(2), 199–220.
- Ki, E., S. Kwak, and H. Ahn (2015), "The Effect of the Interaction Between Financial Statement Comparability and Complexity of Client Firms on the Audit Efforts," *Korean Accounting Review*, 40(3), 43–81.
- Kothari, S. P., A. J. Leone, and C. E. Wasley (2005) "Performance Matched Discretionary Accrual Measures," *Journal of Accounting and Economics*, 39, 163–197.
- Krauß, P., B. M. Quosigk, and H. Zülch (2014), "Effects of Initial Audit Fee Discounts on Audit Quality: Evidence from Germany," *International Journal of Auditing*, 18, 40–56.
- Kwon, S. Y. and E. Ki (2011), "The Effect of Accruals Quality on the Audit Hour and Audit Fee," *Korean Accounting Review*, 36(4), 95–137.
- Kwon, S. Y., Y. Lim, and R. Simnett (2014), "The Effect of Mandatory Audit Firm Rotation on Audit Quality and Audit Fees: Empirical Evidence from the Korean Audit Market," *Auditing: A Journal of Practice & Theory*, 33(4), 167–196.
- Lee, E. Y. and W. Ha (2021), "Auditors' Response to Corporate Fraud: Evidence from Audit Fees and Auditor Turnover," *Managerial Auditing Journal*, 36(3), 405–436.
- Magee, R. and M. Tseng (1990), "Audit Pricing and Independence," *The*

- Accounting Review*, 65(2), 315–336.
- Myers, J., L. Myers, and T. Omer (2003), “Exploring the Term of the Auditor-Client Relationship and the Quality of Earnings: A Case for Mandatory Auditor Rotation?” *The Accounting Review*, 78(3), 779–799.
- O’Keefe, T. B., D. A. Simunic, and M. T. Stein (1994), “The Production of Audit Services: Evidence from a Major Public Accounting Firm,” *Journal of Accounting Research*, 32(2), 241–262.
- Palmrose, Z.-V. (1986), “Audit Fees and Auditor Size: Further Evidence,” *Journal of Accounting Research*, 24(1), 97–110.
- Parker, A. (2002), *Accounting Profession Clashes with Regulator Over Attack on “Lowballing”*, Financial Times (June 29), 2.
- Public Company Accounting Oversight Board (2011), *Concept Release on Auditor Independence and Audit Firm Rotation*, PCAOB Release No. 2011-006 (August 16).
- Raghunandan, K. and D. V. Rama (2006), “SOX Section 404 Material Weakness Disclosures and Audit Fees,” *Auditing: A Journal of Practice & Theory*, 25(1), 99–114.
- Reichelt, K. J. and D. Wang (2010), “National and Office-Specific Measures of Auditor Industry Expertise and Effects on Audit Quality,” *Journal of Accounting Research*, 48(3), 647–689.
- Schelleman, C. and W. R. Knechel (2010), “Short-Term Accruals and the Pricing and Production of Audit Services,” *Auditing: A Journal of Practice & Theory*, 29(1), 221–250.
- Shipman, J. E., Q. T. Swanquist, and R. L. Whited (2017), “Propensity Score Matching in Accounting Research,” *The Accounting Review*, 92(1), 213–244.
- Simon, D. T. and J. R. Francis (1988), “The Effects of Auditor Change on Audit Fees: Tests of Price Cutting and Price Recovery,” *The Accounting Review*, 63(2), 255–269.
- Simunic, D. A. (1980), “The Pricing of Audit Services: Theory and Evidence,” *Journal of Accounting Research*, 18, 161–190.
- Simunic, D. A. and M. T. Stein (1996), “The Impact of Litigation Risk on Audit Pricing: A Review of the Economics and the Evidence,” *Auditing: A Journal of Practice & Theory*, 15 (Supplement), 119–133.
- Song, B., J. Chung, and G.-J. Jhang (2020), “Audit Market Concentration and Auditor Change: The Effect on Audit Fees,” *Korean Accounting Journal*, 29(2), 87–119.
- Stanley, J. D., D. M. Brandon, and J. J. McMillan (2015), “Does Lowballing Impair Audit Quality? Evidence from Client Accruals Surrounding Analyst Forecasts,” *Journal of Accounting and Public Policy*, 34(6), 625–645.
- Stein, M. T., D. A. Simunic, and T. B. O’Keefe (1994), “Industry Differences in the Production of Audit Services,” *Auditing: A Journal of Practice &*

Theory, 13(Supplement), 128–142.

U. S. Senate (1977), *Subcommittee on Reports, Accounting and Management of the Committee on Government Operations*, The Accounting Establishment, Washington, DC: U.S. Government Printing Office.

Williams, P. (2007), *Competition: Playing Lowball*. *Accountancy Age* (July 12). Available at: <https://www.accountancyage.com/aa/feature/1763994/competition-playing-low-ball> (accessed on September 10, 2018).

Received May 13, 2021

Revised July 29, 2021

Accepted October 2, 2021

