

# The Adoption of the Standard Audit Hours Policy, Increases in Audit Hours and Audit Fees, and Market Responses to Earnings: A Study of the Korean Stock Market\*

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Using the earnings response coefficient (ERC) from a returns-earnings model, this study examines the impact of the Standard Audit Hours Policy (hereafter, SAHP), introduced in 2019, on the informativeness of earnings for companies listed in the Korean stock markets over the period from 2017 to 2020. We further explore whether earnings informativeness is enhanced by increases in audit hours and audit fees following the adoption of the SAHP. First, our analysis does not reveal any consistently significant evidence suggesting that the adoption of the SAHP has enhanced the overall informativeness of earnings. Second, our analysis shows that firms with audit hours exceeding the year-industry average, as well as those with increased per-hour audit fees, do not demonstrate a significant improvement in earnings informativeness. This result holds true regardless of auditor size and persists across periods before and after the implementation of the SAHP. Third, our findings indicate that firms paying audit fees above the year-industry average achieve significantly greater earnings informativeness, especially when engaging non-Big 4 auditors and during the period following the adoption of the SAHP. Overall, the results of this study suggest that the effects of the SAHP on earnings informativeness differ by auditor size. Specifically, the post-SAHP increase in audit fees enhances the performance of smaller audit firms, leading to more favorable market responses to earnings information audited by these audit firms.

Key Words: Standard Audit Hours Policy, increase in audit hours, increased per-hour audit fees, auditor size, earnings informativeness

## 1. Introduction

In October 2017, Korean regulatory authorities conducted an extensive amendment of

the “Act on External Audit of Stock Companies (hereafter, External Audit Act),” announcing the introduction of the Standard Audit Hours Policy (SAHP) as part of accounting system reforms. The SAHP has been in effect since

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2019, with the goal of improving audit quality and protecting the interests of investors and other stakeholders.<sup>1)</sup> It requires a phased application of standard audit hours for companies, which are categorized into 11 groups based on asset size, following industry-specific time-tables and adjustment factors.

The implementation of the SAHP has brought significant changes to the audit environments. Before the introduction of this policy, the audit industry operated under a system where companies could freely select and appoint their auditors, leading to a tendency for audit fees to be discounted due to price competition among auditors. This resulted in contracts with lower audit fees, which in turn led to auditors exerting less efforts, causing a decline in audit quality due to reduced audit hours. The introduction of the SAHP acts as a form of mandatory regulation on auditors, dictating standard audit hour requirements. This has resulted in an increase in actual audit hours to meet the standards. This reflects the direct impact of the SAHP on the cost structure of audit services, as audit firms invest additional time and resources to meet the enhanced regulatory standards. As a result, the escalation in actual audit hours, driven by compliance with the SAHP, has precipitated a rise in audit fees.

Nonetheless, the surge in audit fees following

the implementation of the SAHP has raised concerns within the business community about the rising costs of audits. They argue that the unprecedented and rapid increase in audit fees exacerbates the financial burden on companies. Meanwhile, the Korean Institute of Certified Public Accountants (KICPA), representing the audit industry in Korea, contends that despite the substantial increase in audit costs, profitability per audit hour has actually declined when evaluated against hourly audit fees, especially when compared to figures from a decade ago.<sup>2)</sup> They also argue that the increase in audit fees and audit hours is a necessary aspect of the process of normalizing what was previously an absurdly low standard. Furthermore, they state that an increase in audit fees is inevitable to guarantee audit quality for the protection of investors and other stakeholders. Hence, amidst ongoing debates between companies and the audit industry concerning the surge in audit fees subsequent to the rollout of the SAHP, exploring how investors assess the increases in audit hours and audit fees following the adoption of the SAHP is highly relevant and timely, with respect to the effectiveness of the SAHP.

This study investigates whether the adoption of the SAHP in Korea improves earnings informativeness, utilizing the earnings response

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1) "The Korean Institute of Certified Public Accountants may determine the standard audit hours an auditor should spend to improve the audit quality and to protect interested persons, including investors. ..." (Paragraph 2 of Article 16, External Audit Act)

2) "Audit costs surge by 50% - audit fees double. Listed companies say, 'a significant increase at once is a burden': Accounting industry says, 'cost of structural change for establishing transparent accounting.'" (Seoul Finance, February 19, 2021)

coefficient (ERC) from a returns-earnings model. We further explore whether the increases in audit hours and audit fees following the implementation of the SAHP enhance earnings informativeness from the investors' standpoint. Moreover, this study examines whether investors differentiate in their response to accounting earnings audited by Big 4 versus non-Big 4 auditors, comparing the periods before and after the implementation of the SAHP. On the other hand, regarding audit fees, a consistent upward trend has been observed since Korea has adopted the International Financial Reporting Standards (IFRS) in 2011, which continued with the introduction of the SAHP. Despite this increase, auditors have raised concerns that the increased workload and heightened complexity of audits have resulted in a decrease in hourly audit fees. This has sparked debates about how the change in audit fees influences audit quality. Thus, this study additionally tests whether the increases in hourly audit fees in the post-SAHP period are associated with improved earnings informativeness, as a reflection of investors' assessment of the quality of accounting information.

Prior research examining the impact of the SAHP has predominantly concentrated on assessing shifts in audit environments and improvements in auditors' performance (Kim and Jeong, 2020; Lee et al., 2021; Park et al., 2021; Cho et al., 2022; Jung et al., 2022; Park and Jeon, 2022; Shim et al., 2022; Kim and Park, 2023). While previous studies provide empirical evidence of the effectiveness of

the SAHP, they fall short of exploring another critical objective of the SAHP: protecting the interests of investors and other stakeholders. In other words, there is a notable scarcity of studies that evaluate the efficacy of the SAHP as perceived by the stock markets, especially from the investors' perspective. The controversy over the increased audit fees between companies and the audit industry following the introduction of the SAHP is more than just an issue between these two groups. It is crucial to verify whether the information environments for stock market investors, who utilize accounting information produced by companies, have improved after the implementation of the SAHP. If stock market investors make investment decisions within an information environment where audit quality is perceived to have improved due to the increased audit hours and fees following the introduction of the SAHP, this would align with the intentions of regulatory authorities behind the adoption of the SAHP. Conversely, if the increase in audit hours and audit fees does not lead to perceived market reactions indicating enhanced audit quality from the investors' perspective, it would be challenging to conclude that the SAHP has been effective in protecting investors and other stakeholders as intended by the regulatory authorities. In this context, this study analyzes whether stock market investors, as users of accounting information, perceive the increases in audit hours and audit fees as an enhancement in audit quality, as reflected by an incremental increase in the ERC.

Using 6,768 firm-year observations from the Korean stock markets, this study scrutinizes the market responses of investors to earnings to assess the effectiveness of the SAHP, by comparing the two-year periods before and after its implementation from 2017 to 2020. First, we find only limited evidence showing that the introduction of SAHP increases market responses to earnings. We note an increase in the ERC in the post-SAHP-introduction period (2019~2020) compared to the previous period (2017~2018), but this increase is observed solely in the case of *RET\_EWI* (equal weighted index returns). There is no corresponding rise in the other dependent variables, *RET\_MKT* (market adjusted returns) and *RET\_SIZE* (market size adjusted returns). Second, our findings do not indicate that companies with audit hours exceeding the year-industry average experience any further increase in the ERC. This is consistent across the entire sample, as well as in additional analyses that segment the periods before and after the introduction of SAHP (2017~2018 vs. 2019~2020) and when categorizing by auditor size (Big 4 vs. non-Big 4). On the other hand, this result differs from prior studies which analyze from the perspective of audit quality (Shim et al., 2022; Kim and Park, 2023).

This indicates that contrary to the claims in practice that an increase in audit hours would enhance audit quality and improve accounting transparency, investors do not perceive an increase in audit hours as an apparent improvement in audit quality from the ERC perspective. Finally, we find that companies with increased audit fees exceeding the year-industry average show an additional increase in the ERC. Moreover, additional analysis reveals that during the post-SAHP period (2019~2020) and particularly in companies audited by non-Big 4 auditors, there is a notable incremental increase in the ERC. These findings could be evidence that aligns with the SAHP's intended purpose of protecting investors and other stakeholders.

This study provides the following implications. First, investors react more sensitively to the increase in audit fees than to the increase in audit hours. One reason for this could be that media, which works as a source of information for investors, more often report on audit fees and their increase rather than on audit hours.<sup>3)</sup> Second, investors show a more sensitive and positive response to the increase in audit fees linked to earnings, especially for non-Big 4 auditors, which are perceived to have lower audit quality compared to Big 4 auditors. This

3) We analyze 16 articles mentioning standard audit hours or audit fees, published by CEOSCORE DAILY from December 15 to December 21 in 2021, to count how often the terms "audit fees", "audit hours", and "per-hour audit fees" are mentioned. The results show that the word "audit fees" appears 123 times, "audit hours" 29 times, and "per-hour audit fees" only 4 times. As evident from the contents of these articles, when mentioning standard audit hours related to specific companies or industries, "audit fees" are significantly more frequently mentioned in the contents, while "audit hours" or "per-hour audit fees" are mentioned far less frequently in comparison. Therefore, investors are in an information environment where they are more frequently exposed to information about audit fees rather than audit hours or per-hour audit fees when seeking information on industries or listed companies or interest.

suggests that the SAHP is more effective for non-Big 4 auditors. Third, there have been claims in practice that the excessive increase in audit fees following the SAHP implementation has not only burdened large companies but also small and medium-sized companies. However, since non-Big 4 auditors primarily audit small and medium-sized companies, if companies audited by non-Big 4 auditors with increased audit fees have enhanced the informativeness of earnings from investors' perspective, then the increased audit fees for small and medium-sized companies post-SAHP implementation should not be viewed merely as an increase in cost burden but rather as a form of investment, as suggested by our findings. Lastly, it is observed that investors do not show any reaction to the increase in per-hour audit fees when perceiving information linked to earnings. One reason for this might be that while per-hour audit fees are an important indicator of auditors' profitability and of interest to practitioners and researchers, the increase in per-hour audit fees might be less important or less familiar to investors compared to the increase in audit fees, hence the lack of significant findings.

This study contributes to the literature in several ways. First, this study holds significance as the first study to examine the effectiveness of the SAHP from the investors' perspective. Second, beyond just the SAHP itself, this study, by focusing on the increase in audit hours and audit fees that accompanies the SAHP, provides a useful insight on protecting investors

and other stakeholders by linking and analyzing whether such increase in audit hours or audit fees has led to an increase in the ERC. Notably, the empirical findings of this study offer valuable implications to regulatory authorities and policy makers by demonstrating that, in the post-SAHP period, companies audited by non-Big 4 auditors with increased audit fees exceeding the industry average, exhibit an additional increase in the ERC. Additionally, this study contributes by presenting evidence on the perceived market reaction to the audit quality in relation to the introduction of the SAHP. Lastly, the finding that, particularly for smaller auditors, an increase in audit fees translates into a higher informativeness of accounting earnings from investors' perspective offers policy implications to regulatory authorities and policy makers. This is especially relevant given the deepening conflicts between companies and auditors over the increased audit costs in the post-SAHP period. Specifically, the empirical evidence that the incremental increase in the ERC for companies with increased audit fees shows a differential response depending on auditor size (Big 4 vs. non-Big 4) could be useful for future policy formulation.

This paper is structured as follows. Section II describes the institutional backgrounds pertinent to our study, formulates hypotheses, and outlines the research models designed to test these hypotheses. Section III details the sampling process and presents descriptive statistics. Section IV discusses the empirical

findings. Finally, Section V offers conclusions drawn from this study.

## II. Institutional Backgrounds, Hypothesis Development, and Research Design

### 2.1 Institutional Backgrounds and Hypothesis Development

In Korea, the audit industry operates under a voluntary auditor selection policy, allowing companies to choose their auditors at their discretion. This fosters competitive pricing among auditors, often resulting in lower audit fees. Consequently, reduced audit fees lead to auditors exerting less effort, resulting in fewer audit hours and a subsequent decline in audit quality.

The implementation of the SAHP in 2019 represents a substantial transformation in the audit environments in Korea. The SAHP categorizes companies undergoing audits into 11 groups based on their asset size and ap-

plies a standard audit hour per industry. This system is rolled out following industry-specific timetables and adjustment factors. The SAHP serves as a mandatory regulation stipulating the minimum hours auditors must dedicate to their work, which, in turn, increases the actual audit hours to meet the standard audit hours. The increase in actual audit hours justifies the realization of audit fees, suggesting that the introduction of the SAHP leads to an increase in actual audit hours and prompts the realization of audit fees in the audit industry.

Prior to the adoption of the SAHP, companies held a relatively strong position in setting audit fees. However, the introduction of the SAHP, supported by regulatory enforcement, leads to a shift in the decision-making power over audit fees from managers to auditors in the contractual agreements between companies and their auditors. Consequently, audit fees increase as actual audit hours increase in accordance with the application of standard audit hours, reflecting the changed dynamics in audit fee determination.<sup>4)</sup>

The adoption of the SAHP imposes a con-

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4) The following is reported in a newspaper article, based on an independent investigation conducted by CEOSCORE DAILY on the audit fee details of 428 listed companies in Korea from 2017 to 2021. "Increased from 123 billion won in 2017 to 290.4 billion won this year... The increase is more pronounced after the implementation of the new External Audit Act. The smaller the company's sales size, the higher the rate of increase in compensation... The burden of expense outlays is exacerbated. KT&G, Hanjin, and Haesung Industrial have the highest rate of increase in compensation by size... Audit hours have increased the most for Samsung Electronics... According to a survey of audit fee details for 428 listed companies in Korea from 2017 to 2021, the compensation paid by domestic listed companies to auditors has more than doubled in four years, nearing 300 billion won this year. Especially after the implementation of the new External Audit Act, which legally establishes the standard audit hours that auditors must invest according to company size and characteristics, the increase has been significant. Looking at sales size, companies with over 5 trillion won saw their audit fees increase by 2.1 times, while those under 1 trillion won experienced a 2.8-fold increase. The smaller the sales, the higher the rate of increase in audit fees, and the burden of audit fee expenditures has also increased. ... Out of these companies, 417 that disclosed the total required time for financial audits showed a significant increase in audit hours from 1,641,122 hours in 2017 to 2,481,661 hours in 2019, and 2,796,615 hours this year. Around the implementation

siderable cost burden on companies, primarily due to the sharp increase in audit fees resulting from it, rather than the mere increase in the auditors' input hours (Kim and Jeong, 2020). This issue has escalated into a tense conflict between companies and auditors, becoming a social issue within the business community, and has also drawn significant attention from regulatory authorities. Therefore, we first investigate whether the application of the SAHP after its introduction in 2019 has led to an increase in audit hours and audit fees, and consequently, whether it has enhanced audit quality and improved the transparency of financial information from the perspective of investors through the increased informativeness of earnings. Previous studies have also reported that the application of the SAHP increased audit hours compared to before (Lee et al., 2021), actual audit fees increased more than standard audit hours (Kim et al., 2021), and the quality of earnings or audit quality has improved (Kim and Jeong, 2020; Park et al., 2021; Cho et al., 2022). Particularly, Kim and Jeong (2020) and Cho et al. (2022) report that discretionary accruals are restrained after the introduction of the SAHP, suggesting that audit quality measured by discretionary accruals improved after the introduction of the SAHP. Furthermore,

Park (2022) reports significant increases in the frequency and amount of provisional earnings adjustments after the SAHP's introduction. Particularly, Donovan et al. (2014) argue that audit quality in a regulated environment surpasses that resulting from the demand for audit quality by auditors and audited companies in an unregulated situation. This suggests that audit quality in a regulated environment is more effective than that arising from auditors' voluntary efforts or companies' demand for quality. The introduction of the SAHP in 2019 was a result of regulatory changes made to the External Audit Act, as part of an effort by regulatory authorities to create a more controlled audit environment. Based on such prior studies and the premise that the actual audit quality has improved after the introduction of the SAHP, it can be inferred that in the stock markets, investors' confidence in disclosed earnings information may rise due to the increased audit efforts by auditors following the SAHP's introduction.

To explore whether the audit quality has increased after the introduction of the SAHP from investors' perspective, this study sets the following hypothesis.

*H1: The adoption of the Standard Audit Hours Policy (SAHP) will enhance the*

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of the new External Audit Act in 2018, there was an increase of 845,539 hours (51.2%). During the same period, audit fees also increased from 123 billion won in 2017 to 214.6 billion won in 2019, and 290.4 billion won this year, marking a 74.5% increase around 2018. When looking at the rate of increase in audit fees by sales size, the smaller the sales, the higher the rate of increase. This means that the smaller the company, the greater the burden of audit fee expenditures. ...” (Source: “Listed companies spent 300 billion won this year on audit fees alone... A 2.4-fold increase in four years”, December 15, 2021, CEOSCORE DAILY)

*informativeness of earnings from the investors' perspective.*

This study further explores whether the increase in audit hours and audit fees following the adoption of the SAHP subsequently enhances audit quality and improves the transparency of accounting information. As in the guidelines for the SAHP by the KICPA, low independence of auditors and insufficient audit hours are pointed out as major causes of poor audit quality (KICPA, 2022). Thus, it is generally expected that audit quality will improve with an increase in audit hours.

Prior studies use audit hours as a proxy for auditors' efforts because they represent the most critical input factor auditors commit to their auditing tasks. Thus, they argue that an increase in audit hours is indicative of increased audit efforts, which, in turn, contributes to enhanced audit quality (Caramanis and Lennox, 2008; Kim and Jeon, 2016; Park and Jeon, 2018; Kim and Jeong, 2020; Cho et al., 2022; Shim et al., 2022; Kim and Park, 2023). DeFond and Zhang (2014) view audit hours, audit fees, and auditor size as input-based metrics when discussing proxies for audit quality.

Building on prior research, this study sets the following hypothesis to investigate whether companies with increased audit hours, indicating greater audit efforts by auditors, demonstrate enhanced earnings informativeness from investors' perspective in the stock markets compared to companies without increased

audit hours.

*H2: Firms with increased audit hours after the adoption of the SAHP will exhibit a stronger positive relationship between earnings and stock returns compared to those without increased audit hours.*

In addition to increased audit hours, high audit fees reflect greater audit efforts or heightened audit risks, as discussed by Caramanis and Lennox (2008). Previous studies argue that there is a positive relationship between audit fees and audit quality because higher audit fees increase auditors' efforts (Coulton et al., 2007; Hoitash et al., 2007; Park and Choi, 2009; Choi et al., 2010; Asthana and Boone, 2012; Eshleman and Guo, 2014; Choi et al., 2015; Park and Cho, 2017; Park and Jeon, 2018).

The introduction of the SAHP has significantly increased the rate of audit fee increases. Therefore, it is necessary to examine whether the substantial increase in audit fees borne by companies in the business sector serves as signaling information that enhances audit quality and increases the transparency of financial information. In this context, this study sets the following hypothesis to examine whether companies with increased audit fees enhance the informativeness of accounting earnings from investors' perspective compared to those without such increases.

*H3: Firms with increased audit fees after*

*the adoption of the SAHP will exhibit a stronger positive relationship between earnings and stock returns compared to those without increased audit fees.*

## 2.2 Research Design

Prior studies often use the ERC derived from a returns-earnings model to show whether earnings quality has improved or whether auditing has enhanced the quality of accounting information (e.g., Collins and Salatka, 1993; Teoh and Wong, 1993; Gul et al., 2003; Ghosh and Moon, 2005; Krishnan et al., 2005; Griffin and Lont, 2010; Menon and Williams, 2010). Following those prior studies, this study examines the effects of adopting the SAHP on the informativeness of earnings by investigating whether there is an increase in the ERC in the returns-earnings model. Furthermore, this study explores whether the increase in audit hours and audit fees after the adoption of SAHP enhances the informativeness of earnings from the investors' perspective, as indicated by an increase in the ERC of accounting earnings. To achieve the goals, this study tests the three hypotheses by estimating the following models (1) to (3):

$$\begin{aligned}
 RET_t = & \beta_0 + \beta_1 \Delta NI_t + \beta_2 SAHP_t \\
 & + \beta_3 \Delta NI_t \times SAHP_t + \beta_4 BIG4_t + \beta_5 SIZE_t \\
 & + \beta_6 LEV_t + \beta_7 MTB_t + \beta_8 LOSS_t + \beta_9 BETA_t \\
 & + \beta_{10} FOR_t + \beta_{11} AGE_t + \beta_{12} RET_{t-1} \\
 & + \beta_{13} IACA_t + \beta_{14} PAD_t + \beta_{15} KOSDAQ_t \\
 & + Industry FE + \varepsilon_t \dots\dots\dots (1)
 \end{aligned}$$

$$\begin{aligned}
 RET_t = & \beta_0 + \beta_1 \Delta NI_t + \beta_2 \Delta AHI\_pos_t \\
 & + \beta_3 \Delta NI_t \times \Delta AHI\_pos_t + \beta_4 BIG4_t + \beta_5 SIZE_t \\
 & + \beta_6 LEV_t + \beta_7 MTB_t + \beta_8 LOSS_t + \beta_9 BETA_t \\
 & + \beta_{10} FOR_t + \beta_{11} AGE_t + \beta_{12} RET_{t-1} + \beta_{13} IACA_t \\
 & + \beta_{14} PAD_t + \beta_{15} KOSDAQ_t + Industry FE \\
 & + Year FE + \varepsilon_t \dots\dots\dots (2)
 \end{aligned}$$

$$\begin{aligned}
 RET_t = & \beta_0 + \beta_1 \Delta NI_t + \beta_2 \Delta AFI\_pos_t \\
 & + \beta_3 \Delta NI_t \times \Delta AFI\_pos_t + \beta_4 BIG4_t + \beta_5 SIZE_t \\
 & + \beta_6 LEV_t + \beta_7 MTB_t + \beta_8 LOSS_t + \beta_9 BETA_t \\
 & + \beta_{10} FOR_t + \beta_{11} AGE_t + \beta_{12} RET_{t-1} + \beta_{13} IACA_t \\
 & + \beta_{14} PAD_t + \beta_{15} KOSDAQ_t + Industry FE \\
 & + Year FE + \varepsilon_t \dots\dots\dots (3)
 \end{aligned}$$

where  $RET_t$  is monthly buy-and-hold returns estimated over a 12-month period spanning from April of year  $t$  to March of the following year  $t + 1$ . We use three different estimates for  $RET_t$ : (1) monthly buy-and-hold returns adjusted by market returns ( $RET\_MKT_t$ ), (2) monthly buy-and-hold returns adjusted by equally weighted index returns ( $RET\_EWI_t$ ), and (3) monthly buy-and-hold returns adjusted by size-adjusted returns ( $RET\_SIZE_t$ ).  $\Delta NI_t$  is the change in net income for year  $t$ , measured as  $(NI_t - NI_{t-1}) / AT_t$ .  $SAHP_t$  is an indicator variable which is equal to one if an observation is obtained after the adoption of the SAHP and otherwise, zero. The variable of interest in Equation (1) for H1 is the interaction term,  $\Delta NI_t \times SAHP_t$ . If the results align with the expectation of H1, we anticipate that the interaction term will exhibit a significant positive value ( $\beta_3 > 0$ ). To test H2 (H3), we measure  $\Delta AH$  ( $\Delta AF$ ) by subtracting the prior

period's audit hours (audit fees) from the current period's audit hours (audit fees) and then, dividing the result by the prior period's audit hours (audit fees) to calculate the rate of increase. We also measure an indicator variable for the increase of  $\Delta AH$  ( $\Delta AF$ ) to minimize the issue of multicollinearity. Additionally, since more companies experience increases rather than decreases in audit hours ( $\Delta AH$ ) and audit fees ( $\Delta AF$ ) following the introduction of the SAHP, this study measures  $\Delta AH$  and  $\Delta AF$  by subtracting the year-industry average values. These are referred to as  $\Delta AHI$  and  $\Delta AFI$ , respectively. When constructing the variable of interest, the indicator variable form  $\Delta AHI\_pos$  ( $\Delta AFI\_pos$ ) is a dummy variable that is one if  $\Delta AHI$  ( $\Delta AFI$ ) is positive (+) and zero, otherwise. In other words,  $\Delta AHI\_pos$  ( $\Delta AFI\_pos$ ) has a value of one if audit hours (audit fees) increase beyond the average of the year-industry, and zero, otherwise. The variable of interest in Equation (2) for H2 is the interaction term,  $\Delta NI_t \times \Delta AHI\_pos_t$ , and for H3 in Equation (3), it is the interaction term,  $\Delta NI_t \times \Delta AFI\_pos_t$ . If the outcomes align with the expectations of H2 and H3, then the variables of interest in Equation (2) and (3) are both expected to exhibit significant positive (+) coefficients ( $\beta_3 > 0$ ).

We control for the following variables in our models.  $BIG4_t$  is an indicator variable which is equal to one if a firm's auditor is a Big 4 audit firm for year  $t$ .  $SIZE_t$  is the natural logarithm of total assets ( $AT_t$ ) for year  $t$ .  $LEV_t$  is leverage measured as total liabilities divided

by total assets for year  $t$ .  $MTB_t$  is market-to-book ratio for year  $t$ .  $LOSS_t$  is an indicator variable which is equal to one if a firm reports losses for year  $t$  and otherwise, zero.  $BETA_t$  is the beta of a firm for year  $t$ , calculated using the market model.  $FOR_t$  is foreigners' ownership for year  $t$ .  $AGE_t$  is the natural logarithm of (1 + firm age) for year  $t$ .  $RET_{t-1}$  is stock returns measured over a 12-month spanning from April of year  $t-1$  to March of the following year  $t$ . It is included in the models to control for the mean reversion characteristics of stock returns.  $RET_{t-1}$  is estimated in accordance with the measurement of the corresponding dependent variable. On the other hand, to control for the effects of other regulations implemented by the new External Audit Act, aimed at enhancing the quality of auditors' work, this study controls for the effects of the internal accounting control audit (IACA) system and the periodic auditor designation (PAD) system.  $IACA_t$  is an indicator variable which is equal to one if a firm is required to be audited by the internal accounting control system for year  $t$ , and otherwise zero.  $PAD_t$  is an indicator variable which is equal to one if an auditor is periodically designated in the company/year in year  $t$ , and otherwise, zero. Therefore, if the variable of interest in Equation (1),  $\Delta NI_t \times SAHP_t$  shows significant values, it can be confirmed that such results are not due to the influence of the internal accounting control audit (IACA) system or the periodic audit designation (PAD) system.  $KOSDAQ_t$  is an indicator variable which is equal to one if

a firm is listed in the KOSDAQ market in year  $t$ , and otherwise, zero. Meanwhile, in Equation (1), since the SAHP corresponds to a period of dummy variable, year dummies are excluded to avoid redundancy, and only industry dummies are included. In contrast, Equations (2) and (3) consider both year and industry fixed effects.

### III. Sampling Process and Descriptive Statistics

#### 3.1 Sample Process

This study examines the effects of the SAHP over the period of two-years before and after its implementation from 2017 to 2020. For this purpose, we choose samples that meet all of the following criteria among companies listed on the Korean stock markets (KOSPI & KOSDAQ markets): (1) firms whose fiscal year ends in December, excluding those in the financial industry, (2) firms whose audit hour and audit fee data are available at TS2000 database run by the Korean Listed Companies Association (KLCA), (3) firms whose financial data, auditors, foreign ownership, and stock prices are available at the KISVALUE database, which is operated by NICE Information Inc., (4) firms whose capital is not eroded, and (5) firms whose audit hours are above 100 hours and audit fees are greater than one thousand won (KRW) (Park and Park, 2007;

Kwon and Ki, 2011; Park and Jeon, 2018). This study notes that the interest variables,  $\Delta AH_{pos}$  and  $\Delta AF_{pos}$ , can be measured only if audit hours and audit fees data are available for both the previous and current periods. Therefore, the data used in this study covers the period from 2016 to 2020. The final sample that meets all the conditions consisted of data from 6,768 companies/years during the analysis period. Meanwhile, all the variables, except for dummy variables and those for which natural logarithms are taken, are winsorized at the top and bottom 1%.

Table 1 presents the sample distribution by year (Panel A) and industry (Panel B). Panel A of Table 1 shows that the year 2018 has the highest number of observations within the analysis period, totaling 1,701, compared to 2017, which has the lowest at 1,676. However, there is not a significant difference in the number of observations across the years. On the other hand, in Panel B of Table 2, while the regression analysis uses industry dummy variables based on a mid-level classification, a broad classification is presented instead. For the full sample, the manufacturing industry has the highest frequency (64.7%), followed by the service industry (21.2%), wholesale and retail (7.0%), others (4.2%), and construction (2.9%) in descending order. This pattern is similar for both Big 4 and non-Big 4 samples.

Table 2 presents the annual changes in audit hours and audit fees used in the analysis ( $\Delta AH$ ,  $\Delta AF$ ), as well as the distribution of their respective increases ( $\Delta AH_{pos}$ ,  $\Delta AF_{pos}$ ) by

〈Table 1〉 Sample Distribution by Year and Industry

Panel A: Year						
	2017	2018	2019	2020	Totals	
Num	1,676	1,701	1,693	1,698	6,768	
Panel B: Industry						
Industry	Full Sample		Big 4 Sample		Non-Big 4 Sample	
	Num	%	Num	%	Num	%
Manufacturing	4,377	64.7	1,787	58.0	2,590	70.3
Wholesale and retail	477	7.0	215	7.0	262	7.1
Construction	194	2.9	95	3.1	99	2.7
Services	1,436	21.2	837	27.1	599	16.3
Others	284	4.2	149	4.8	135	3.7
Total	6,768	100.0	3,083	100.0	3,685	100.0

Table 1 presents the sample distribution by year (Panel A) and industry (Panel B). The sample period covers from 2017 to 2020. Panel B reports the sample distribution by a broad industry classification although the regression analysis use a mid-level classification.

year. This is reported for the entire sample, as well as divided into Big 4 and non-Big 4 samples.

In Panel A of Table 2, for the entire sample, the change in audit hours ( $\Delta AH$ ) is 8.4% in 2017.  $\Delta AH$  starts to rise significantly in 2018 by an additional 6.3% to 14.7%. This is because the External Audit Act is fully revised and passed through the National Assembly in September 2017, indicating that the audit hours begin to increase from the year before the introduction of the SAHP. In 2019,  $\Delta AH$  is 16%. In the second year of the introduction of the SAHP (2020),  $\Delta AH$  becomes 19.1%. On the other hand, the increase rate in audit fees ( $\Delta AF$ ) is 5.9% in 2017, lower than the 8.4% increase in audit hours ( $\Delta AH$ ).  $\Delta AF$  jumps to 17.5% in 2018 and further increases to 25.8% in 2019 and 40.8% in 2020. Furthermore, we can observe a steeper increase in the rate of

audit fees compared to the increase in audit hours along with the adoption of the SAHP. For instance, if we calculate the cumulative  $\Delta AH$  from 2017 to 2020, it is 0.582 (= 0.084 + 0.147 + 0.160 + 0.191), and the cumulative  $\Delta AF$  for the same period is 0.90. Therefore, compared to 2016, over four years until 2020, the increase rate of audit hours is 58%, while the increase rate of audit fees is 90%. In other words, the increase rate of audit fees is higher than that of audit hours during the same period. This suggests that the per-hour audit fee for auditors increased by about 1.55 times (= 0.90/0.58) before and after the introduction of the SAHP.

Panel A of Table 2 shows that the indicator variable for the increase in audit hours ( $\Delta AH_{pos}$ ) increases from 0.563 to 0.776 throughout the sample period spanning from 2017 to 2020. The indicator variable for the increase

〈Table 2〉 Changes in Audit Hours and Audit Fees by Year

Panel A: Full Sample				
Variable	2017	2018	2019	2020
$\Delta AH_t$	0.084	0.147	0.160	0.191
$\Delta AF_t$	0.059	0.175	0.258	0.408
$\Delta AH\_pos_t$	0.563	0.673	0.763	0.776
$\Delta AF\_pos_t$	0.391	0.590	0.734	0.797
Num	1,676	1,701	1,693	1,698
Panel B: Big 4 Sample				
Variable	2017	2018	2019	2020
$\Delta AH_t$	0.084	0.148	0.164	0.191
$\Delta AF_t$	0.057	0.176	0.268	0.400
$\Delta AH\_pos_t$	0.570	0.681	0.709	0.650
$\Delta AF\_pos_t$	0.424	0.767	0.846	0.828
Num	840	797	755	691
Panel C: Non-Big 4 Sample				
Variable	2017	2018	2019	2020
$\Delta AH_t$	0.083	0.145	0.155	0.191
$\Delta AF_t$	0.060	0.174	0.249	0.413
$\Delta AH\_pos_t$	0.555	0.666	0.807	0.862
$\Delta AF\_pos_t$	0.359	0.434	0.644	0.777
Num	836	904	938	1,007

Table 2 presents the changes in audit hours and audit fees by year during the sample period from 2017 to 2020. Panel A reports the changes in audit hours and audit fees for full sample. Panel B reports the changes in audit hours and audit fees for Big 4 sample. Panel C reports the changes in audit hours and audit fees for non-Big 4 sample.  $\Delta AH_t$  is the change in audit hours for year  $t$ , measured as  $(AH_t - AH_{t-1})/AH_{t-1}$ .  $\Delta AF_t$  is the change in audit fees for year  $t$ , measured as  $(AF_t - AF_{t-1})/AF_{t-1}$ .  $\Delta AH\_pos_t$  is an indicator variable which is equal to one if audit hours ( $AH_t$ ) increase for year  $t$ , and otherwise zero (e.g.,  $\Delta AH_t > 0$ ).  $\Delta AF\_pos_t$  is an indicator variable which is equal to one if audit fees ( $AF_t$ ) increase for year  $t$ , and otherwise zero (e.g.,  $\Delta AF_t > 0$ ).  $\Delta AH_t$  and  $\Delta AF_t$  are winsorized at the top and bottom 1%.

in audit fees ( $\Delta AF\_pos$ ) also increases during the sample period but the magnitude of the increases is greater than that of  $\Delta AH\_pos$ . For example, it is 0.391 in 2017, lower than  $\Delta AH\_pos$  by 17.2%, but it is 0.797 in 2020, greater than  $\Delta AH\_pos$  by 2.1%.

Panel B of Table 2 indicates that within the Big 4 sample,  $\Delta AH\_pos$  rises from 0.570 to 0.709 from 2017 to 2019 but decreasing to 0.650 in 2020. Conversely, Panel C of Table 2 shows that for the non-Big 4 sample,  $\Delta AH\_$

$pos$  exhibits a consistent upward trend throughout the sample period, culminating at 0.862. On the other hand, Panel B presents that for the Big 4 sample,  $\Delta AF\_pos$  increases from 0.424 to 0.846 from 2017 to 2019 but slightly decreases in 2020 to 0.828. However, Panel C reveals that for the non-Big4 sample,  $\Delta AF\_pos$  increases prior to the adoption of the SAHP and then significantly surges following the SAHP implementation period.

〈Table 3〉 Descriptive Statistics

Variable	Num	Mean	Median	STD	Min	Max
Dependent variables						
$RET\_MKT_t$	6,768	0.035	-0.033	0.481	-0.872	1.838
$RET\_EWI_t$	6,768	0.146	0.020	0.585	-0.878	2.007
$RET\_SIZE_t$	6,768	-0.005	-0.075	0.455	-0.980	1.620
$\Delta NI_t$	6,768	-0.003	-0.001	0.113	-0.435	0.461
Test variables						
$SAHP_t$	6,768	0.501	1.000	0.500	0.000	1.000
$\Delta AHI\_pos_t$	6,768	0.336	0.000	0.472	0.000	1.000
$\Delta AFI\_pos_t$	6,768	0.359	0.000	0.480	0.000	1.000
$\Delta AFHI\_pos_t$	6,768	0.412	0.000	0.492	0.000	1.000
Control variables						
$BIG4_t$	6,768	0.456	0.000	0.498	0.000	1.000
$SIZE_t$	6,768	26.058	25.814	1.369	22.310	33.068
$LEV_t$	6,768	0.362	0.359	0.200	0.027	0.864
$MTB_t$	6,768	1.872	1.235	1.923	0.275	11.155
$LOSS_t$	6,768	0.333	0.000	0.471	0.000	1.000
$BETA_t$	6,768	0.878	0.868	0.405	-0.083	1.941
$FOR_t$	6,768	0.073	0.030	0.104	0.000	0.530
$AGE_t$	6,768	3.281	3.296	0.647	0.693	4.820
$RET\_MKT_{t-1}$	6,768	0.016	-0.036	0.440	-0.848	1.770
$RET\_EWI_{t-1}$	6,768	-0.018	-0.073	0.449	-0.883	1.855
$RET\_SIZE_{t-1}$	6,768	-0.009	-0.066	0.413	-0.927	1.604
$IACA_t$	6,768	0.066	0.000	0.249	0.000	1.000
$PAD_t$	6,768	0.029	0.000	0.166	0.000	1.000
$KOSDAQ_t$	6,768	0.613	1.000	0.487	0.000	1.000

Table 3 presents the summary statistics of the variables used in our analysis. All the variables are defined in Appendix A.

### 3.2 Descriptive Statistics

Table 3 presents the summary statistics of the variables used in this study. Among the four dependent variables, the average and median for  $RET\_MKT$  are 0.035 and -0.033, respectively. The mean (median) for  $RET\_EWI$  is 0.146 (0.020). Additionally, the mean (median) for  $RET\_SIZE$  is -0.005 (-0.075). It

is evident that the mean and median values vary considerably depending on the method of calculating RET. The mean (median) for  $\Delta NI$  is -0.003 (-0.001).

The average of our main interest variable,  $SAHP$ , is 0.501, indicating that approximately half of the sample is divided into periods before and after the introduction of SAHP. The average of  $\Delta AHI\_pos$  (whether the increase in

audit hours compared to the previous year exceeds the year-industry average) is 0.336, and the average of  $\Delta AFI\_pos$  (whether the increase in audit fees compared to the previous year exceeds the year-industry average) is 0.359. The average of  $\Delta AFHI\_pos$  used in the additional analysis is 0.412. Although not reported in this table, the average of  $\Delta AH\_pos$  (whether there is an increase in audit hours compared to the previous year) is 0.694, and the average of  $\Delta AF\_pos$  (whether there is an increase in audit fees compared to the previous year) is 0.629. This suggests that, following the introduction of SAHP, there are more companies with increased audit hours and audit fees than those without. In other words, since the distributions of  $\Delta AH\_pos$  and  $\Delta AF\_pos$  exceed 60%, this study uses  $\Delta AHI\_pos$  and  $\Delta AFI\_pos$  as interaction variables of interest for hypotheses H2 and H3.

The average of  $BIG4$  is 0.456, indicating that there are slightly more firm-year observations related to non-Big 4 auditors in our sample than Big 4 auditors. The mean (median) of the natural logarithm of firm size ( $SIZE$ ) is 26.058 (25.814), with the original value of this variable being 1,106,461 (162,548) million won (KRW). The mean (median) of  $LEV$  is 0.362 (0.359), showing that equity is higher than debt, and the mean (median) of  $MTB$  is 1.872 (1.235), indicating that the market value of the listed companies in the sample is higher than their book value. The average of  $LOSS$  is 0.333, meaning that 33.3% of the companies in the sample incurred losses. The mean

(median) of  $BETA$  is 0.878 (0.868), which is lower than 1, and the mean and median of  $FOR$  are 0.073 and 0.030, respectively, showing more than a two-fold difference, suggesting that foreign investors tend to concentrate their investments in preferred stocks. The mean (median) of  $AGE$  is 3.281 (3.296), with the value before taking the natural logarithm being 31 (26) years. The means (medians) for the return variables,  $RET\_MKT_{t-1}$ ,  $RET\_EWI_{t-1}$ , and  $RET\_SIZE_{t-1}$  are 0.016 (-0.036), -0.018 (-0.073), and -0.009 (-0.006), respectively. The average of  $IACA$  is 0.066, and the average of  $PAD$  is 0.029, meaning that 6.6% of the companies in our sample are subject to internal accounting control system audits, and 2.9% are subject to periodic auditor designation. The average of  $KOSDAQ$  is 0.613, indicating that there are more KOSDAQ-listed companies than the KOSPI-listed companies in our sample.

## IV. Empirical Results

### 4.1 Market Responses to Earnings after the Adoption of the Standards Audit Hours Policy (H1)

Table 4 reports the results of the multivariate regression analysis for the hypothesis H1 using the model in Equation (1). The regression analysis employs the ordinary least squares (OLS) method and presents results

〈Table 4〉 Market Responses to Earnings after the Adoption of Standard Audit Hours Policy (SAHP)

Variable	$RET\_MKT_t$ (1)	$RET\_EWI_t$ (2)	$RET\_SIZE_t$ (3)
<i>Intercept</i>	-0.529*** (-3.198)	-0.012 (-0.066)	-1.356*** (-8.418)
$\Delta NI_t$	0.353*** (4.300)	0.377*** (4.654)	0.273*** (3.598)
$SAHP_t$	0.097*** (7.915)	0.059*** (4.397)	-0.007 (-0.602)
$\Delta NI_t \times SAHP_t$	0.124 (0.972)	0.261* (1.884)	0.089 (0.715)
$BIG4_t$	-0.037*** (-3.066)	-0.052*** (-3.992)	-0.018 (-1.537)
$SIZE_t$	0.019*** (3.091)	-0.003 (-0.437)	0.051*** (8.408)
$LEV_t$	-0.064* (-1.931)	-0.113*** (-3.129)	-0.140*** (-4.348)
$MTB_t$	0.092*** (17.602)	0.109*** (18.064)	0.093*** (17.715)
$LOSS_t$	-0.123*** (-8.752)	-0.130*** (-8.309)	-0.137*** (-10.289)
$BETA_t$	-0.095*** (-6.666)	0.007 (0.451)	-0.023* (-1.681)
$FOR_t$	-0.421*** (-6.764)	-0.483*** (-6.980)	-0.444*** (-7.429)
$AGE_t$	0.011 (1.299)	0.025*** (2.661)	0.002 (0.226)
$RET_{t-1}$	-0.273*** (-20.082)	-0.350*** (-23.269)	-0.210*** (-14.210)
$IACA_t$	-0.058** (-2.387)	0.231*** (8.091)	-0.007 (-0.311)
$PAD_t$	0.077** (2.522)	0.433*** (14.143)	0.045 (1.564)
$KOSDAQ_t$	-0.011 (-0.804)	0.033** (2.314)	-0.013 (-0.960)
Industry FE	Included	Included	Included
Adj. R <sup>2</sup>	0.163	0.219	0.150
F-value	22.77***	51.36***	19.20***
Num	6,768	6,768	6,768

Table 4 reports the regression results of the effect of the SAHP on the relationship between earnings and stock returns.  $\Delta NI_t$  is the change in net income for year  $t$ , measured as  $(NI_t - NI_{t-1})/AT_t$ .  $NI_t$  indicates net income for year  $t$  and  $AT_t$  indicates total assets at the end of year  $t$ .  $SAHP_t$  is an indicator variable which is equal to one if it is after the adoption of SAHP and otherwise, zero. The  $t$ -statistics in the parentheses are derived using robust standard errors to adjust for clustering effects and heteroskedasticity. All the variables are defined in Appendix A. \*, \*\*, and \*\*\* denote statistical significance at the 10, 5, and 1 percent levels, respectively

from a clustering regression that controls for variables at the firm level. Additionally, the results account for industry fixed effects. To avoid overlapping controls between variables, the model in Equation (1) is analyzed considering only the industry dummies, excluding the year dummies, as *SAHP* represents a period dummy variable.

The dependent variables for models (1) to (3) are *RET\_MKT*, *RET\_EWI*, and *RET\_SIZE*, respectively. Examining the results in Table 5, the explanatory power of the models for *RET\_MKT*, *RET\_EWI*, and *RET\_SIZE* is 0.163, 0.219, and 0.150, respectively. This shows that *RET\_EWI* demonstrates the highest explanatory power, whereas *RET\_SIZE* exhibits the lowest. We assess potential multicollinearity among variables using the variance inflation factor (VIF) as a diagnostic tool. For example, in Panel A of Table 4, the variable with the highest VIF values across models (1) to (3) is size, with 2.64, 2.64, and 2.67, respectively. Considering that multicollinearity becomes problematic when the VIF value is above 10, this result indicates that multicollinearity is not a significant issue.

The variable of interest,  $\Delta NI$ , representing a change in earnings, shows a significant positive relationship with all dependent variables, including *RET\_MKT*, *RET\_EWI*, and *RET\_SIZE*.

Additionally, *SAHP* has a significant positive relationship when the dependent variables are *RET\_MKT* and *RET\_EWI*. However, the interaction variable,  $\Delta NI \times SAHP$ , which is

the variable of interest in the first hypothesis (H1), generally shows positive values for the dependent variables (*RET\_MKT*, *RET\_EWI*, and *RET\_SIZE*), but it is only significant at the 10% level for *RET\_EWI*. It is not statistically significant for *RET\_MKT* and *RET\_SIZE*. Therefore, the first hypothesis (H1), which anticipates an increase in the informativeness of earnings following the introduction of the SAHP, receives limited evidence, as it is supported in only one of the three measurements for the dependent variable.

For other control variables, *SIZE*, *MTB*, *IACA*, and *PAD* generally show a significant positive relationship with the dependent variables, while *BIG4*, *LEV*, *LOSS*, *BETA*, *FOR*, and *RET<sub>t-1</sub>* show a significant negative relationship. These results indicate a lack of clear evidence for the first hypothesis which anticipates an improvement in the informativeness of earnings from investors' perspective following the 2019 introduction of the SAHP. Hence, the findings in Table 4, evaluating the effectiveness of adopting the SAHP from investors' perspective, do not consistently reveal a positive response from stock market participants showing that the introduction of SAHP alone enhances the informativeness of accounting earnings reported by companies. In other words, the incremental increase in the ERC following the introduction of SAHP is limited compared to the period before its introduction. These findings suggest that the intention of the KICPA to enhance audit quality and improve the transparency of accounting information for invest-

ors and other stakeholders, by introducing the SAHP in 2019, has not yet shown clear effectiveness in the two years (2019~2020) following its introduction compared to the previous period (2017~2018).

This study finds that the direct effectiveness of the SAHP introduction is not readily observable. However, since the introduction of the SAHP has increased audit hours and, as a result, audit fees, it is necessary to examine whether the increase in audit hours and audit fees leads to an enhancement in the informativeness of accounting earnings from investors' perspective. Therefore, subsequent analyses in this study will focus on the results at the individual firm level for companies with increased audit hours and audit fees.

#### 4.2 Increases in Audit Hours and Audit Fees in the Post-SAHP Period and the Earnings Response Coefficient (H2 & H3)

Panel A of Table 5 reports the results of the multivariate regression analysis for the second hypothesis (H2), employing the estimation of Equation (2). As with Table 4, the dependent variables for models (1) to (3) are *RET\_MKT*, *RET\_EWI*, and *RET\_SIZE*. The interaction variable,  $\Delta NI \times \Delta AHI_{pos}$ , central to H2, shows positive values regardless of the dependent variables, but no statistically significant results are observed. In other words, companies with audit hours increased beyond the year-industry average do not show an incremental increase in the ERC compared to

those that do not. Hence, we do not find evidence from investors' perspective supporting H2, which expects that the increase in audit hours for companies would strengthen the positive relationship between earnings and returns more than for those without such an increase.

Panel B of Table 5 presents the results of the multivariate regression analysis for H3 using the model in Equation (3). The interaction variable,  $\Delta NI \times \Delta AFI_{pos}$ , central to H3, shows statistically significant positive values for all dependent variables *RET\_MKT*, *RET\_EWI*, and *RET\_SIZE*. This means that for companies where audit fees increase more than the year-industry average, the ERC significantly and incrementally increases compared to those where it does not. This indicates that investors in the stock markets perceive the informativeness of earnings more positively in companies with increased audit fees than in those without. Therefore, H3, which anticipates that companies with increased audit fees would strengthen the positive relationship between earnings and stock returns from investors' perspective, is supported by evidence.

Overall, the results in Table 5 suggest that stock market investors perceive an improvement in audit quality and a consequent incremental increase in the ERC more in response to increase in audit fees than in audit hours. This may be because investors in the stock markets are more familiar with the monetary measure of audit fees than the meas-

〈Table 5〉 Market Responses to Earnings for the Increases in Audit Hours and Audit Fees

Panel A: Increase in audit hours above the year-industry average			
Variable	$RET\_MKT_t$ (1)	$RET\_EWI_t$ (2)	$RET\_SIZE_t$ (3)
<i>Intercept</i>	-0.609*** (-3.809)	-0.181 (-1.132)	-1.359*** (-8.414)
$\Delta NI_t$	0.382*** (4.982)	0.369*** (4.766)	0.282*** (3.857)
$\Delta AHI\_pos_t$	-0.026** (-2.127)	-0.026** (-2.196)	-0.019* (-1.647)
$\Delta NI_t \times \Delta AHI\_pos_t$	0.057 (0.430)	0.070 (0.542)	0.108 (0.842)
$BIG4_t$	-0.024** (-2.017)	-0.022* (-1.864)	-0.016 (-1.361)
$SIZE_t$	0.018*** (2.978)	0.010* (1.677)	0.050*** (8.254)
$LEV_t$	-0.060* (-1.849)	-0.057* (-1.770)	-0.141*** (-4.383)
$MTB_t$	0.089*** (17.360)	0.087*** (17.125)	0.094*** (17.771)
$LOSS_t$	-0.126*** (-9.110)	-0.123*** (-9.070)	-0.137*** (-10.300)
$BETA_t$	-0.055*** (-3.722)	-0.047*** (-3.188)	-0.014 (-0.968)
$FOR_t$	-0.418*** (-7.021)	-0.414*** (-7.016)	-0.451*** (-7.508)
$AGE_t$	0.009 (1.038)	0.008 (0.965)	0.002 (0.217)
$RET_{t-1}$	-0.239*** (-17.118)	-0.237*** (-16.811)	-0.211*** (-14.329)
$IACA_t$	-0.078** (-3.165)	0.003 (0.118)	0.006 (0.256)
$PAD_t$	0.039 (1.203)	0.055* (1.723)	0.069** (2.244)
$KOSDAQ_t$	-0.014 (-1.075)	0.023* (1.772)	-0.013 (-0.972)
Industry FE	Included	Included	Included
Adj. R <sup>2</sup>	0.188	0.459	0.152
F-value	30.12***	119.40***	17.65***
Num	6,768	6,768	6,768

〈Table 5〉 Market Responses to Earnings for the Increases in Audit Hours and Audit Fees (continue)

Panel B: Increase in audit fees above the year-industry average			
Variable	$RET\_MKT_t$	$RET\_EWI_t$	$RET\_SIZE_t$
	(1)	(2)	(3)
<i>Intercept</i>	-0.599*** (-3.741)	-0.171 (-1.066)	-1.346*** (-8.347)
$\Delta NI_t$	0.311*** (3.877)	0.307*** (3.823)	0.208*** (2.704)
$\Delta AFI\_pos_t$	-0.007 (-0.591)	-0.008 (-0.699)	-0.005 (-0.463)
$\Delta NI_t \times \Delta AFI\_pos_t$	0.259** (2.000)	0.249* (1.927)	0.327*** (2.582)
$BIG4_t$	-0.026** (-2.173)	-0.024** (-2.030)	-0.017 (-1.459)
$SIZE_t$	0.018*** (2.890)	0.010 (1.591)	0.050*** (8.177)
$LEV_t$	-0.061* (-1.894)	-0.059* (-1.817)	-0.141*** (-4.413)
$MTB_t$	0.089*** (17.306)	0.087*** (17.064)	0.094*** (17.761)
$LOSS_t$	-0.126*** (-9.144)	-0.124*** (-9.116)	-0.137*** (-10.302)
$BETA_t$	-0.055*** (-3.728)	-0.047*** (-3.194)	-0.014 (-0.979)
$FOR_t$	-0.414*** (-6.970)	-0.410*** (-6.962)	-0.447*** (-7.459)
$AGE_t$	0.009 (1.079)	0.008 (1.008)	0.002 (0.252)
$RET_{t-1}$	-0.238*** (-17.128)	-0.236*** (-16.817)	-0.210*** (-14.304)
$IACA_t$	-0.079*** (-3.212)	0.002 (0.068)	0.006 (0.239)
$PAD_t$	0.029 (0.926)	0.045 (1.446)	0.062** (2.044)
$KOSDAQ_t$	-0.015 (-1.127)	0.022* (1.725)	-0.014 (-1.034)
Industry FE	Included	Included	Included
Adj. R <sup>2</sup>	0.189	0.459	0.153
F-value	29.93***	118.80***	17.56***
Num	6,768	6,768	6,768

Table 5 presents the regression results of the effects of the increases in audit hours and audit fees on earnings informativeness. The  $t$ -statistics in the parentheses are derived using robust standard errors to adjust for clustering effects and heteroskedasticity. All the variables are defined in Appendix A. \*, \*\*, and \*\*\* denote statistical significance at the 10, 5, and 1 percent levels, respectively.

ure of audit hours. Therefore, in the context of the ERC, an increase in audit fees is a more reliable indicator of improved audit quality and a strengthened relationship between earnings and returns. In this vein, the results from Table 5 show that investors consider an increase in audit fees to be more credible indicator of increased ERC than an increase in audit hours.

#### 4.3 Sensitivity Analysis

The results for the hypotheses, H2 and H3, presented in Table 4 and Table 5, are based on the entire sample. In this section, we divide the total sample period (2017~2020) into pre- and post-SAHP introduction periods (2017~2018 vs. 2019~2020), and the results are reported in Table 6. Panel A of Table 6 reports the results for the interaction variable,  $\Delta NI \times \Delta AHI_{pos}$ , related to H2. However, it does not show statistically significant positive coefficients for the three dependent variables ( $RET\_MKT$ ,  $RET\_EWI$ , and  $RET\_SIZE$ ) in either the pre-SAHP (2017~2018) or post-SAHP (2019~2020) periods. This means there is no significant difference in the results when analyzing the entire period (2017~2020) and dividing it into pre- and post-SAHP introduction periods.

Conversely, in Panel B of Table 6, the interaction variable  $\Delta NI \times \Delta AFI_{pos}$  shows statistically significant positive coefficients for all three dependent variables ( $RET\_MKT$ ,  $RET\_EWI$ , and  $RET\_SIZE$ ) in the post-SAHP period

(2019~2020), but not in the pre-SAHP period (2017~2018), supporting H3. This indicates that the results for the entire sample in Panel A of Table 6 are primarily driven by the period following the introduction of the SAHP. In other words, stock market investors perceive an improvement in audit quality where audit fees increase beyond the year-industry average after the implementation of the SAHP, compared to those that do not. The results from Panel B of Table 6 suggest that the third hypothesis (H3) is predominantly supported in the post-SAHP period. Additionally, these findings align with those of Jung et al. (2022), which examines audit quality, indicating that investors perceive enhanced reliability in the earnings of companies with increased audit fees following SAHP's introduction and respond accordingly.

Next, we reexamine the second and third hypotheses (H2 & H3) by dividing the sample based on auditor size (Big 4 vs. non-Big 4) to see whether there is a differential market reaction when the audit is conducted by Big 4 or non-Big 4.

Panel A of Table 7 reports the results for the interaction variable  $\Delta NI \times \Delta SAHP$ , related to the first hypothesis (H1), which do not exhibit statistically significant coefficients for any of the dependent variables ( $RET\_MKT$ ,  $RET\_EWI$ , and  $RET\_SIZE$ ), in either the Big 4 or non-Big 4 samples. This means that, compared to the overall sample results in Table 4, no significant positive values are observed when dividing the sample into Big 4

〈Table 6〉 Market Responses to Earnings for the Increases in Audit Hours and Audit Fees before and after the Adoption of Standard Audit Hours Policy (SAHP)

Panel A: Increase in audit hours in the pre- and the post-SAHP period						
Variable	Before SAHP(2017~2018)			After SAHP(2019~2020)		
	<i>RET_MKT<sub>t</sub></i>	<i>RET_EWI<sub>t</sub></i>	<i>RET_SIZE<sub>t</sub></i>	<i>RET_MKT<sub>t</sub></i>	<i>RET_EWI<sub>t</sub></i>	<i>RET_SIZE<sub>t</sub></i>
	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta NI_t$	0.365*** (3.654)	0.342*** (3.414)	0.275*** (2.943)	0.390*** (3.279)	0.391*** (3.252)	0.298*** (2.590)
$\Delta AHI_{pos_t}$	-0.008 (-0.530)	-0.008 (-0.516)	-0.007 (-0.460)	-0.039** (-2.173)	-0.042** (-2.334)	-0.029* (-1.661)
$\Delta NI_t \times \Delta AHI_{pos_t}$	0.067 (0.417)	0.104 (0.651)	0.116 (0.769)	-0.009 (-0.043)	-0.012 (-0.062)	0.065 (0.332)
Controls	Included	Included	Included	Included	Included	Included
Industry FE	Included	Included	Included	Included	Included	Included
Year FE	Included	Included	Included	Included	Included	Included
Adj. R <sup>2</sup>	0.255	0.227	0.190	0.162	0.542	0.143
F-value	22.81***	16.25***	10.94***	14.73***	109.60***	11.66***
Num	3,377	3,377	3,377	3,391	3,391	3,391

  

Panel B: Increase in audit fees in the pre- and the post-SAHP period						
Variable	Before SAHP(2017~2018)			After SAHP(2019~2020)		
	<i>RET_MKT<sub>t</sub></i>	<i>RET_EWI<sub>t</sub></i>	<i>RET_SIZE<sub>t</sub></i>	<i>RET_MKT<sub>t</sub></i>	<i>RET_EWI<sub>t</sub></i>	<i>RET_SIZE<sub>t</sub></i>
	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta NI_t$	0.382*** (3.599)	0.369*** (3.477)	0.288*** (2.894)	0.209* (1.727)	0.211* (1.750)	0.112 (0.951)
$\Delta AFI_{pos_t}$	0.007 (0.517)	0.008 (0.561)	0.011 (0.077)	-0.026 (-1.455)	-0.026 (-1.445)	-0.020 (-1.119)
$\Delta NI_t \times \Delta AFI_{pos_t}$	0.020 (0.123)	0.030 (0.188)	0.089 (0.574)	0.441** (2.261)	0.436** (2.242)	0.530*** (2.780)
Controls	Included	Included	Included	Included	Included	Included
Industry FE	Included	Included	Included	Included	Included	Included
Year FE	Included	Included	Included	Included	Included	Included
Adj. R <sup>2</sup>	0.255	0.227	0.190	0.162	0.543	0.146
F-value	22.72***	16.28***	11.01***	14.73***	108.80***	11.75***
Num	3,377	3,377	3,377	3,391	3,391	3,391

Table 6 reports the regression results of the effects of the increases in audit hours and audit fees on earnings informativeness before and after the implementation of the SAHP. Panel A reports the effect of the increase in audit hours above the year-industry average ( $\Delta AHI_{pos}$ ) on the relationship between earnings and stocks returns in the pre- and the post-SAHP period. Panel B shows the results of the effect of the increase in audit fees above the year-industry average ( $\Delta AFI_{pos}$ ) on the relationship between earnings and stock returns in the pre- and the post-SAHP period. The  $t$ -statistics in the parentheses are derived using robust standard errors to adjust for clustering effects and heteroskedasticity. All the variables are defined in Appendix A. \*, \*\*, and \*\*\* denote statistical significance at the 10, 5, and 1 percent levels, respectively.

(Table 7) Comparison between Big 4 and Non-Big 4 Sample

Panel A: Adoption of SAHP						
Variable	Big 4 sample			Non-Big 4 sample		
	$RET\_MKT_t$ (1)	$RET\_EWI_t$ (2)	$RET\_SIZE_t$ (3)	$RET\_MKT_t$ (4)	$RET\_EWI_t$ (5)	$RET\_SIZE_t$ (6)
$\Delta NI_t$	0.249*** (2.565)	0.328*** (3.431)	0.163* (1.832)	0.409*** (3.212)	0.386*** (3.071)	0.350*** (2.937)
$SAHP_t$	0.067*** (3.741)	-0.022 (-1.111)	0.007 (0.402)	0.122*** (7.180)	0.113*** (6.154)	-0.020 (-1.263)
$\Delta NI_t \times SAHP_t$	0.235 (1.287)	0.260 (1.172)	0.139 (0.806)	0.068 (0.392)	0.283 (1.546)	0.042 (0.246)
Control Variables	Included	Included	Included	Included	Included	Included
Industry FE	Included	Included	Included	Included	Included	Included
Year FE	Included	Included	Included	Included	Included	Included
Adj. R <sup>2</sup>	0.152	0.240	0.137	0.193	0.426	0.174
F-value	9.868***	26.91***	8.051***	16.10***	28.68***	14.51***
Num	3,083	3,083	3,083	3,685	3,685	3,685

  

Panel B: Increase in audit hours above the year-industry average						
Variable	Big 4 sample			Non-Big 4 sample		
	$RET\_MKT_t$ (1)	$RET\_EWI_t$ (2)	$RET\_SIZE_t$ (3)	$RET\_MKT_t$ (4)	$RET\_EWI_t$ (5)	$RET\_SIZE_t$ (6)
$\Delta NI_t$	0.394*** (3.423)	0.364*** (3.138)	0.248** (2.230)	0.375*** (3.683)	0.374*** (3.636)	0.313*** (3.248)
$\Delta AHI\_pos_t$	-0.007 (-0.472)	-0.007 (-0.475)	-0.001 (-0.097)	-0.025 (-1.353)	-0.029 (-1.532)	-0.025 (-1.396)
$\Delta NI_t \times \Delta AHI\_pos_t$	-0.136 (-0.763)	-0.130 (-0.724)	-0.072 (-0.407)	0.143 (0.782)	0.160 (0.894)	0.189 (1.065)
Control Variables	Included	Included	Included	Included	Included	Included
Industry FE	Included	Included	Included	Included	Included	Included
Year FE	Included	Included	Included	Included	Included	Included
Adj. R <sup>2</sup>	0.194	0.515	0.139	0.194	0.427	0.176
F-value	14.94***	68.84***	7.653***	18.95***	61.38***	13.38***
Num	3,083	3,083	3,083	3,685	3,685	3,685

  

Panel C: Increase in audit fees above the year-industry average						
Variable	Big 4 sample			Non-Big 4 sample		
	$RET\_MKT_t$ (1)	$RET\_EWI_t$ (2)	$RET\_SIZE_t$ (3)	$RET\_MKT_t$ (4)	$RET\_EWI_t$ (5)	$RET\_SIZE_t$ (6)
$\Delta NI_t$	0.361*** (3.272)	0.336*** (3.012)	0.223** (2.101)	0.275** (2.435)	0.284** (2.530)	0.206* (1.913)
$\Delta AFI\_pos_t$	0.008 (0.566)	0.005 (0.317)	0.008 (0.568)	-0.016 (-0.883)	-0.012 (-0.637)	-0.009 (-0.534)
$\Delta NI_t \times \Delta AFI\_pos_t$	-0.049 (-0.276)	-0.061 (-0.338)	-0.002 (-0.011)	0.409** (2.305)	0.400** (2.266)	0.476*** (2.773)
Control Variables	Included	Included	Included	Included	Included	Included
Industry FE	Included	Included	Included	Included	Included	Included
Year FE	Included	Included	Included	Included	Included	Included
Adj. R <sup>2</sup>	0.194	0.515	0.139	0.196	0.428	0.178
F-value	14.96***	67.73***	7.655***	18.77***	60.85***	13.34***
Num	3,083	3,083	3,083	3,685	3,685	3,685

Table 7 reports the regression results of the adoption of the SAHP, the increases in audit hours and audit fees above the year-industry average between Big 4 and non-Big 4 samples. Panel A reports the effect of the adoption of the SAHP ( $SAHP_t$ ) on the relationship between earnings and stocks returns for the Big 4 and non-Big4 samples. Panel B shows the results of the effect of the increase in audit hours above the year-industry average ( $\Delta AHI\_pos$ ) on the relationship between earnings and stock returns for the Big 4 and non-Big4 samples. The  $t$ -statistics in the parentheses are derived using robust standard errors to adjust for clustering effects and heteroskedasticity. All the variables are defined in Appendix A. \*, \*\*, and \*\*\* denote statistical significance at the 10, 5, and 1 percent levels, respectively.

and non-Big 4 groups. Notably, even the results that show a significant positive value at the 10% level for *RET\_EWI* in the overall sample are no longer statistically significant when the samples are divided based on the auditors' size.

In Panel B of Table 7, the interaction variable  $\Delta NI \times \Delta AHL_{pos}$ , related to the second hypothesis (H2), does not exhibit statistically significant coefficients for any of the dependent variables (*RET\_MKT*, *RET\_EWI*, and *RET\_SIZE*), in either Big 4 or non-Big 4 sample. It suggests that even after the increase in audit hours post-SAHP introduction, no significant difference is observed in investors' perceived market reaction in terms of audit quality compared to the period before its implementation.

Conversely, in Panel C of Table 7, the interaction variable  $\Delta NI \times \Delta AFL_{pos}$  shows statistically significant positive coefficients for all three dependent variables (*RET\_MKT*, *RET\_EWI*, and *RET\_SIZE*) in the non-Big 4 auditor sample. However, it does not show any significant coefficient on the interaction variable in the Big 4 auditor sample. Therefore, we conclude that the overall sample results in Panel B of Table 5 are primarily driven by the non-Big 4 auditor sample. This suggests that while Big 4 auditors are perceived to have relatively high audit quality and may maintain audit quality despite audit fee reductions, investors perceive an improvement in audit quality and an increase in the reliability of earnings when audit fees increase for companies audited by non-Big 4 auditors,

leading to an increase in the ERC.

We further examine the results of Panel C of Table 7 by dividing Big 4 and non-Big 4 samples into pre- and post-SAHP introduction periods (2017~2018 vs. 2019~2020).

Panel A of Table 8 reports that, for the Big 4 auditor sample, the interaction variable  $\Delta NI \times \Delta AFL_{pos}$  does not exhibit a statistically significant positive coefficient for the dependent variables (*RET\_MKT*, *RET\_EWI*, and *RET\_SIZE*) in both pre- and post-SAHP introduction periods.

On the other hand, Panel B of Table 8 shows that for the non-Big 4 auditor sample, the interaction variable  $\Delta NI \times \Delta AFL_{pos}$  is not significant for any of the three dependent variables in the pre-SAHP introduction period (2017~2018). However, in the post-SAHP introduction period (2019~2020),  $\Delta NI \times \Delta AFL_{pos}$  exhibits statistically significant positive values for all three dependent variables. These results indicate that the significant positive values of  $\Delta NI \times \Delta AFL_{pos}$ , observed in Panel C of Table 8, are primarily attributed to the increase in audit fees for non-Big 4 auditors after the SAHP introduction.

The findings from Table 8 suggest that the introduction of the SAHP in 2019 leads to an incremental increase in the ERC, particularly when audit fees rise above the industry average. This effect appears in companies audited by non-Big 4 auditors rather than by Big 4 auditors.

We further investigate investors' response to companies with increased per-hour audit fees. This metric is measured as the audit fees

(Table 8) Effect of the Increase in Audit Fees for Big 4 and Non-Big 4 Samples before and after the SAHP

Panel A: Big 4 sample						
Variable	Before SAHP(2017~2018)			After SAHP(2019~2020)		
	$RET\_MKT_t$	$RET\_EWI_t$	$RET\_SIZE_t$	$RET\_MKT_t$	$RET\_EWI_t$	$RET\_SIZE_t$
	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta NI_t$	0.377*** (3.107)	0.352*** (2.804)	0.243** (2.114)	0.332* (1.702)	0.313 (1.646)	0.203 (1.096)
$\Delta AFI\_pos_t$	0.008 (0.427)	0.006 (0.344)	0.011 (0.639)	0.007 (0.297)	0.005 (0.232)	0.010 (0.392)
$\Delta NI_t \times \Delta AFI\_pos_t$	-0.127 (-0.576)	-0.124 (-0.535)	-0.048 (-0.222)	-0.030 (-0.102)	-0.026 (-0.090)	0.055 (0.190)
Control Variables	Included	Included	Included	Included	Included	Included
Industry FE	Included	Included	Included	Included	Included	Included
Year FE	Included	Included	Included	Included	Included	Included
Adj. R <sup>2</sup>	0.253	0.240	0.190	0.191	0.631	0.127
F-value	10.49***	9.846***	5.622***	9.616***	67.69***	8.345***
Num	1,637	3,083	1,637	1,446	1,637	1,446
Panel B: Non-Big 4 sample						
Variable	Before SAHP(2017~2018)			After SAHP(2019~2020)		
	$RET\_MKT_t$	$RET\_EWI_t$	$RET\_SIZE_t$	$RET\_MKT_t$	$RET\_EWI_t$	$RET\_SIZE_t$
	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta NI_t$	0.345** (2.032)	0.342*** (2.036)	0.282** (1.753)	0.171 (1.121)	0.183 (1.197)	0.114 (0.767)
$\Delta AFI\_pos_t$	0.008 (0.350)	0.012 (0.493)	0.010 (0.448)	-0.034 (-1.315)	-0.032 (-1.223)	-0.028 (-1.125)
$\Delta NI_t \times \Delta AFI\_pos_t$	0.159 (0.704)	0.182 (0.811)	0.252 (1.156)	0.569** (2.364)	0.559** (2.319)	0.627*** (2.681)
Control Variables	Included	Included	Included	Included	Included	Included
Industry FE	Included	Included	Included	Included	Included	Included
Year FE	Included	Included	Included	Included	Included	Included
Adj. R <sup>2</sup>	0.270	0.233	0.211	0.161	0.493	0.180
F-value	14.33***	9.695***	7.472***	8.616***	53.64***	9.924***
Num	1,740	1,740	1,740	1,945	1,945	1,945

Table 8 presents the regression results of the effect of the increase in audit fees above the year-industry average ( $\Delta AFI\_pos$ ) before (2017~2018) and after (2019~2020) the implementation of the SAHP for the Big 4 and non-Big 4 samples. Panel A reports the effect of  $\Delta AFI\_pos$  on the relationship between earnings and stocks returns in the pre- and the post-SAHP periods for the Big 4 sample. Panel B reports the effect of  $\Delta AFI\_pos$  on the relationship between earnings and stocks returns in the pre- and the post-SAHP periods for the non-Big 4 sample. The  $t$ -statistics in the parentheses are derived using robust standard errors to adjust for clustering effects and heteroskedasticity. All the variables are defined in Appendix A. \*, \*\*, and \*\*\* denote statistical significance at the 10, 5, and 1 percent levels, respectively.

divided by the audit hours invested in the audit engagement, serving as a profitability performance indicator for auditors. More specifically, this study uses a change in per-hour audit fee ( $\Delta AFH$ ), calculated by subtracting the previous period's per-hour audit fee from the current period's, then standardizing by the previous period's fee. Similar to  $\Delta AHI_{pos}$  and  $\Delta AFI_{pos}$ , we create an indicator variable,  $\Delta AFHI_{pos}$ , which is set to be one if the change in per-hour audit fee equals or exceeds the mean within the sample's industry-year group.

Table 9 reports the results, focusing on  $RET\_MKT$  as the dependent variable due to

space constraints. The untabulated results for the other dependent variables,  $RET\_EWI$  and  $RET\_SIZE$ , are substantially similar to those for  $RET\_MKT$  reported. The results indicate that the interaction variable  $\Delta NI \times \Delta AFHI_{pos}$  does not exhibit statistically significant coefficients across the entire sample period (2017~2020), in either the pre- or post-SAHP introduction periods (2017~2018 vs. 2019~2020), or when the sample is divided by auditor size (Big 4 vs. non-Big 4).

Overall, there is no evidence to suggest that companies with increased per-hour audit fees experience an incremental increase in the ERC compared to those that do not. These

<Table 9> Additional Test

Variable	$RET\_MKT_t$				
	Full Period (2017~2020) (1)	Before SAHP (2017~2018) (2)	After SAHP (2019~2020) (3)	Big 4 Auditors (2017~2020) (4)	Non-Big 4 Auditors (2017~2020) (5)
$\Delta NI_t$	0.443*** (5.187)	0.416*** (4.082)	0.440*** (3.338)	0.342*** (2.715)	0.491*** (4.399)
$\Delta AFHI_{pos_t}$	-0.017 (-1.514)	-0.015 (-1.118)	-0.017 (-0.969)	0.002 (0.150)	-0.024 (-1.430)
$\Delta NI_t \times \Delta AFHI_{pos_t}$	-0.081 (-0.642)	-0.055 (-0.368)	-0.111 (-0.567)	0.005 (0.024)	-0.137 (-0.799)
Control Variables	Included	Included	Included	Included	Included
Industry FE	Included	Included	Included	Included	Included
Year FE	Included	Included	Included	Included	Included
Adj. R <sup>2</sup>	0.188	0.255	0.161	0.194	0.194
F-value	30.04***	22.80***	14.52***	15.03***	18.94***
Num	6,768	3,377	3,391	3,083	3,685

Table 9 presents the results of the additional regression analysis of the effect of the increases in both audit hours and audit fees above the year-industry average ( $\Delta AFHI_{pos}$ ) on earnings informativeness over the sample period and in the pre- and post-SAHP periods and for Big 4 and non-Big 4 samples. The  $t$ -statistics in the parentheses are derived using robust standard errors to adjust for clustering effects and heteroskedasticity. All the variables are defined in Appendix A. \*, \*\*, and \*\*\* denote statistical significance at the 10, 5, and 1 percent levels, respectively.

results indicate that stock market investors do not show a positive response to the increase in the informativeness of earnings for companies with increased per-hour fees. The findings in Table 10 suggest that while the increase in per-hour audit fees is a very important profitability performance indicator for auditors, stock market investors may find information in the increase in per-hour audit fees less familiar than increase in audit fees or it may be a less familiar concept to market participants, hence not observing a positive ERC response in companies with increased per-hour fees.

## V. Conclusion

This study investigates whether the introduction of the SAHP in 2019, which significantly increased both audit hours and audit fees, enhances audit quality, and thereby improves the informativeness of earnings. Additionally, we explore whether the increase in audit hours or audit fees enhances the reliability of earnings from the perspective of stock market investors by examining market reactions through the returns-earnings model. To this end, we analyze Korean firms listed on the Korean stock markets from 2017 to 2020, covering two years before and after the implementation of the SAHP.

We find no evidence that the informativeness of accounting earnings increases after the introduction of SAHP. This suggests that,

despite the KICPA's announcement that the SAHP would enhance audit quality and protect stakeholders, including investors, the SAHP itself does not result in a positive market reaction among stock market investors. Secondly, although the SAHP aims to increase auditors' hours to enhance audit quality and improve accounting transparency, there is no evidence from investors' perspective that the increase in audit hours enhances the informativeness of earnings. This result is consistent across the entire sample, when dividing the sample by auditor size (Big 4 vs. non-Big 4), and when comparing the periods before and after the SAHP implementation (2017~2018 vs. 2019~2020). Thirdly, the results show no evidence that increased audit fees from Big 4 auditors enhance the informativeness of earnings in either the pre- or post-SAHP implementation periods. Conversely, for non-Big 4 auditors, companies with increased audit fees demonstrate enhanced earnings informativeness primarily before the SAHP implementation (2017~2018). Post-SAHP implementation (2019~2020), companies with audit fees exceeding the year-industry average are perceived by investors to have improved earnings informativeness.

This study may have the following limitations. First, it examines the impacts only for the two-year periods before and after the implementation of the SAHP, which may not be sufficient to fully analyze the effects of the system. Since the successful establishment of the SAHP in the audit industry takes time, it

is necessary to analyze longer time-series data in the future research. Second, there may be correlated omitted variable problems in our regression models, which necessitates careful interpretation of the empirical results. Additionally, this study focuses on the effectiveness of the SAHP, specifically from investors' perspectives. However, to verify more comprehensive effects of the SAHP, it is necessary to consider other capital market participants as well, such as credit rating agencies, bond investors, and financial analysts.

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## (Appendix A) Variable Descriptions

Variable	Description
$RET_t$	Monthly buy-and-hold returns over a 12-month period spanning from April of year $t$ to March of the following year $t+1$ .
$RET\_MKT_t$	Monthly buy-and-hold returns over a 12-month period spanning from April of year $t$ to March of the following year $t+1$ , adjusted by market returns.
$RET\_EWI_t$	Monthly buy-and-hold returns over a 12-month period spanning from April of year $t$ to March of the following year $t+1$ , adjusted by equally weighted index returns.
$RET\_SIZE_t$	Monthly buy-and-hold returns over a 12-month period spanning from April of year $t$ to March of the following year $t+1$ , adjusted by size-adjusted returns.
$\Delta NI_t$	Change in net income for year $t$ , measured as $(NI_t - NI_{t-1})/AT_t$ . $NI_t$ indicates net income for year $t$ and $AT_t$ indicates total assets at the end of year $t$ .
$SAHP_t$	An indicator variable which is equal to one if it is after the adoption of Standard Audit Hours Policy (SAHP) and otherwise, zero.
$\Delta AH_t$	Change in audit hours for year $t$ , measured as $(AH_t - AH_{t-1})/AH_{t-1}$ .
$\Delta AF_t$	Change in audit fees for year $t$ , measured as $(AF_t - AF_{t-1})/AF_{t-1}$ .
$\Delta AH\_pos_t$	An indicator variable which is equal to one if audit hours ( $AH_t$ ) increase for year $t$ , and otherwise zero.
$\Delta AF\_pos_t$	An indicator variable which is equal to one if audit fees ( $AF_t$ ) increase for year $t$ , and otherwise zero.
$\Delta AH\_pos_t$	An indicator variable which is equal to one if the change in audit hours ( $\Delta AH_t$ ) is above the year-industry average for year $t$ , and otherwise zero.
$\Delta AF\_pos_t$	An indicator variable which is equal to one if the change in audit fees ( $\Delta AF_t$ ) is above the year-industry average for year $t$ , and otherwise zero.
$\Delta AFHI\_pos_t$	An indicator variable which equals one if $\Delta AFH$ (change in audit fee per hour) of a firm $i$ in year $t$ equals or exceeds the mean $\Delta AFH$ of firms within the same year-industry group, and zero otherwise. $\Delta AFH = (\text{audit fee per hour}_t - \text{audit fee per hour}_{t-1}) / \text{audit fee per hour}_{t-1}$ .
$BIG4_t$	An indicator variable which is equal to one if a firm's auditor is a BIG 4 audit firm for year $t$ , and otherwise zero.
$SIZE_t$	Natural logarithm of total assets ( $AT_t$ ) for year $t$ .
$LEV_t$	Total liabilities ( $LT_t$ ) divided by total assets ( $AT_t$ ) for year $t$ . $LT_t$ indicates total liabilities at the end of year $t$ .
$MTB_t$	Market-to-book ratio for year $t$ , measured as market value of equity divided by book value of equity.
$LOSS_t$	An indicator variable which is equal to one if a firm reports losses for year $t$ , and otherwise zero.
$BETA_t$	Beta of a firm for year $t$ , calculated using the market model.
$FOR_t$	Foreign ownership for year $t$ .
$AGE_t$	Natural logarithm of one plus a firm's age for year $t$ .
$IACA_t$	An indicator variable which is equal to one if a firm is required to be audited by the internal accounting control audit (IACA) system for year $t$ , and otherwise zero.
$PAD_t$	An indicator variable which is equal to one if a firm is under the periodic auditor designation (PAD) system for year $t$ , and otherwise zero.
$KOSDAQ_t$	An indicator variable which is equal to one if a firm is listed on the Korea Securities Dealers Automated Quotations (KOSDAQ) market for year $t$ , and otherwise zero.

## 표준감사시간제도의 도입과 감사시간 및 감사보수의 증가에 따른 이익 정보의 자본시장 반응: 한국주식시장 연구\*

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### 요 약

본 연구에서는 2019년 도입된 표준감사시간제도가 투자자 측면에서 이익정보력을 증가시키는데 기여를 하는지, 또한 이 제도의 도입으로 인한 감사시간 및 감사보수의 증가가 수익률-이익 관계를 향상시키는지 분석해 보았다. 우선 우리나라 상장기업들을 대상으로 수익률-이익 모형에서 측정한 이익반응계수(earnings response coefficient, ERC)를 이용하여 표준감사시간제도 도입 전후(2017년부터 2020년까지)의 이익의 정보력 변화를 살펴보았다. 연구결과는 첫째, 평균적으로 표준감사시간제도 도입이 투자자 측면에서 이익정보력을 향상시킨다는 일관된 결과를 쉽게 관찰하지는 못하였다. 둘째, 연도-산업 평균치를 차감한 감사시간이 증가한 기업들의 경우와 시간당 감사보수가 증가된 기업들의 경우는 그렇지 않은 기업들에 비해 이익정보력이 향상되었다는 결과를 관찰할 수 없었다. 셋째, 연도-산업 평균치를 차감한 감사보수가 증가한 기업들의 경우는 투자자 측면에서 이익정보력이 향상되었음을 알 수 있었다. 하지만, 이 결과는 주로 중소형(non-Big 4) 감사인에게 감사를 받은 기업들에서 관측이 되었고, 또한 표준감사시간제도 도입 이후(2019~2020)에 주로 나타났다. 이러한 발견은 표준감사시간제도가 규모가 큰 회계법인보다 상대적으로 규모가 작은 감사인에게 더 긍정적인 영향을 미쳤음을 보여준다. 이 연구는 그동안 대형(Big 4) 회계법인으로부터 주로 감사품질 제고를 기대해왔던 것과 달리 표준감사시간제도의 도입 이후에는 규모가 작은 중소형 회계법인에서 감사보수가 증가하면 주식시장의 투자자들이 감사품질이 향상되는 것으로 인식하여 긍정적으로 반응한다는 점을 시사한다. 이 연구는 회계실무를 담당하는 회계법인뿐만이 아니라 회계규제기관이나 정책입안자에게 감사품질 제고와 관련한 중요한 시사점을 제공한다는 점에서 의의가 있다.

주제어: 표준감사시간제도, 감사시간의 증가, 시간당 감사보수의 증가, 회계법인의 규모, 이익정보력

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