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Key Audit Matters for Production-To-Order Industry and Conservatism

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Abstract: In this study, the effects of key audit matters (KAMs), one of the measures recently introduced to improve accounting transparency in the production-to-order industry in terms of corporate sustainability, are examined. After the introduction of KAMs, auditors should publicly disclose key audit matters that had been internally judged in the past. In cases where these are missing or misunderstood, the range of the auditor's liability may increase. Thus, from the viewpoint of the auditor, the description of KAMs can be recognized as the disclosure of internal judgments and an increase in the risk of litigation. It is judged that, to this end, auditors will perform their auditing work more conservatively in cases where they should describe KAMs. The results of analysis of companies to which KAMs are applied indicate that auditors carried out audits more conservatively for such companies. As such, the result can be interpreted as indicating that, due to the introduction of KAMs, auditors evaluate their risk highly and carry out audits more conservatively in order to reduce the risk. This study is meaningful in that it empirically analyzes the effects of the introduction of the recently implemented KAMs. In addition, this study provides implications for enterprises that prepare financial statements, supervisory institutions that conduct supervision, auditors, and capital market participants, as it presents the finding that, with the introduction of KAMs, auditors perform their work with more conservative perspectives. In addition, the findings of this study provide a basis for future studies on KAMs.

Keywords: key audit matters (KAMs); production-to-order industry; conservatism; auditors

JEL Classification: M41; M42

1. Introduction

This study examines the effects of key audit matters (KAMs), a recently introduced measure to improve the accounting transparency of the production-to-order industry, in terms of corporate sustainability. Concretely, this study analyzes whether auditors carry out audits more conservatively in the case of firms that adopt key audit matters.

Recently, the accounting cliff phenomenon, in which unrealized profits are converted into massive losses in a lump, has occurred mainly in production-to-order industries, such as shipbuilding and construction. If the accounting cliff phenomenon is repeated, damage to investors will occur, and the reliability of accounting in the production-to-order industries will be doubted; ultimately, the efficiency of the capital market may become compromised. Therefore, the Financial Services Commission introduced KAM in order to improve the accounting transparency of those production-to-order industries which use the input method and to ensure the reasonable investment judgment of investors. In Korea's production-to-order industries, KAM is mandatory for audit reports on financial statements from fiscal year 2016. Key audit means intensively auditing those targets that require the most careful

attention in the course of carrying out an accounting audit. Key auditing entries are matters that require the most careful attention of companies and auditors in the course of carrying out an audit of financial statements. KAMs require auditors to include key auditing entries in their audit reports along with an intensive audit of the key auditing entries; that is, in the cases where auditors audit companies that apply the input method, the auditors should select key auditing entries and describe, in detail, the reasons why the key auditing entries were selected, as well as the audit procedures and audit results, in their audit reports.

In the past, the key auditing entries occurring in the auditing process have been internally judged by auditors and were not disclosed to the public. Auditors reported only their audit opinions, which were formed based on the evidence collected in the auditing process, in their audit reports. However, due to the introduction of KAM, an auditor should disclose their key auditing entries, which had been internally judged in the past, to the public; that is, together with the audit procedures and results. KAMs are expected to improve the transparency of audit procedures and financial reporting as they require auditors to describe key auditing entries along with related audit procedures and results; they are also expected to ensure the reasonable judgment of investors by informing them of which matters the auditors paid attention to during their auditing work.

However, in cases where key auditing entries are missing or misunderstood, the range of the auditor's liability may increase. If litigation is proceeded with due to the foregoing, it is highly likely that the contents of the key auditing entries will be used as evidential materials. Lee et al. (2015) also mentioned that the issue of the legal liability of auditors for their professional judgments should be considered as the range of judgment and liability of auditors has expanded; that is, from the viewpoint of auditors, the description of key auditing entries can be recognized as the disclosure of internal judgments and an increase in the risk of litigation. Therefore, auditors must make an effort to more properly evaluate their internal judgments and reduce the risk of litigation. It has been judged that, to that end, auditors will perform their auditing work more conservatively in cases where they should describe key auditing entries. Therefore, in this paper, we are interested in the key audit matters, which are an important factor for a firm's survival and growth.

With the background as such, this study analyzes whether auditors carried out audits more conservatively after the introduction of the key audit matters. Companies interested in this study are those that adopted KAM in 2016. In other words, this study compares the conservatism of auditors in 2015 before the introduction of KAM and in 2016 after the introduction. The results of an analysis of companies to which KAMs have been applied indicate that auditors carried out audits more conservatively for such companies. The result, as such, can be interpreted as indicating that, due to the introduction of key audit matters, auditors evaluate their risk highly and carry out audits more conservatively in order to reduce the risk.

Previous studies related to KAMs mainly conducted questionnaire studies. This study differs from those previous studies in that it empirically analyzed the effect of the introduction of KAMs. Our findings are judged to have provided useful information on key audit matters, which may be useful for financial statement writers, supervisory institutions, auditors, and capital market participants. Finally, our findings indicate that users give greater importance to key auditing entries and confirm the role of KAM, enhancing the accounting transparency.

The composition of this paper is as follows. Following the introduction, in Section 2, previous studies are summarized, and research hypotheses are derived based on the previous studies. In Section 3, the study methods for verifying the study hypotheses are explained. In Section 4, the results of analysis of the study hypotheses are presented. Finally, in Section 5, the findings of this study are summarized and organized, and the limitations of the study are presented.

2. Literature Review and Research Hypotheses

2.1. Literature Review

Although conservatism has been defined diversely depending on the researcher, it generally refers to recognizing costs immediately (i.e., when the costs are expected to be incurred) and delaying the recognition of revenues until they are realized when the revenues are expected. Conservative accounting has the advantage of reducing the potential risks of litigation and political costs of firms (Basu 1997; Watts 2003). Many previous studies have presented evidence for the positive effects of conservatism. Louis et al. (2012) reported that the cash holding values of firms with strong conservative inclinations were evaluated to be higher than those of firms with weak conservative inclinations. Kim and Park (2014) found that the ratios of cash holdings reflecting on the corporate value of firms with strong conservative inclinations were higher. This can be said to be evidence that conservatism plays a role in reducing agency costs. However, such effects of conservatism mainly appear when foreign ownership is 0%, and the opposite effects have appeared when foreign ownership exceeded 25%.

Francis et al. (2013) found that there were significant positive (+) relationships between conservatism and corporate values and argued that conservatism is helpful to investors. Kim et al. (2013) showed that conservative inclinations, at the time of capital increases with consideration, were positively (+) related to short-term price responses. Ahmed et al. (2002) reported that higher conservative inclinations led to a smaller amount of profit being available for the dividends of the firm, such that excessive dividends were suppressed, leading to higher corporate bond ratings, and in turn, reducing the costs of borrowed capital. Zhang (2008) analyzed conservatism from the viewpoint of creditors and found that creditors applied lower interest rates to firms with stronger conservative inclinations. Li (2015) analyzed the relationships between conservatism and the cost of borrowed capital based on data from 35 countries and identified that there were significant negative (−) relationships between conservatism and the costs of borrowed capital. Jeon and Lee (2010) reported that higher conservative inclinations led to higher KIS (Korea Investors Service) credit scores. Garcia Lara et al. (2011) reported that the stronger the conservative inclination, the lower the pre- and post-capital cost measures were.

On the other hand, there has been a negative evaluation that conservatism distorts the correspondence between revenues and costs, thereby conflicting with neutrality and reducing the usefulness of financial reporting (Paek and Lee 2004; Moon et al. 2006; Gigler et al. 2009). Paek and Lee (2004) reported that the higher the conservative inclination, the lower the earnings persistence and the smaller the price/earnings multiple were. Moon et al. (2006) also reported that the higher the conservative inclination, the longer the firm's long-term rate of returns was; furthermore, the higher the conservative inclination, the larger the number of foreign investors was. Yang and Kim (2014) found that higher levels of earnings transparency led to lower costs of equity capital and that a stronger conservative inclination led to a higher costs of equity capital. Kim and Kim (2015) reported that the higher the conservative inclination, the lower the future earnings response coefficient was, indicating that investors could not reasonably judge future earnings as they did not accurately recognize the characteristics of conservatism. Kim and Lee (2015) analyzed the difference in investment outcomes between foreign investors and local investors and the effects of conservatism and international accounting standards on the difference in investment outcomes. According to the results of the analysis, foreign investors recorded more excellent investment outcomes than local investors. In addition, the higher the firm's conservative inclination, the greater the difference in the investment outcomes between foreign investors and local investors was. Furthermore, the difference in the investment outcomes between foreign investors and local investors increased after the introduction of the international accounting standards.

Although there are studies that have verified the effects of conservatism, such as the studies described above, there have also been studies that examined the determinants of conservatism. Such studies mainly focused on corporate governance in relation to agency problems. Beatty et al. (2008)

found that as agent costs increased, creditors revised debt fulfillment clauses more conservatively, and the firm performed more conservative accounting, in line with the creditor's demand. Nikolaev (2010) studied conservatism according to debt fulfillment clauses and found that the conservative inclinations of firms increased when debt fulfillment clauses were broadly set. LaFond and Roychowdhury (2008) judged that conservative inclinations vary according to agency costs and examined the relationship between the managerial stock ownership and conservatism. According to the results of analysis, the lower the managerial stock ownership, the higher the agency cost was, leading to increases in the demand for conservative accounting. Ahmed and Duellman (2007) reported that a higher proportion of outside directors led to a stronger conservative inclination, and Garcia Lara et al. (2007) demonstrated that, in cases where the CEO was the chairman of the board, the ability of the board to check was limited, such that the conservatism was weakened.

Meanwhile, Kim and Bae (2006) examined the characteristics of South Korean firms affecting conservatism. According to the results of the analysis, conservative inclinations were shown to be higher when the other debt ratio was higher, when the foreign ownership was higher, and among listed companies. Choi and Yoon (2006) found that the higher the level of overall corporate governance, the stronger the conservative inclination was. In addition, major stakeholder ownership did not affect conservatism, but foreign ownership was shown to be positively (+) related to conservatism. Oh (2006) also reported that the conservative inclination decreased when the audit fee increased and when major stakeholder ownership was higher, and the conservative inclination increased as foreign ownership increased. Kim and Hwang (2008) showed that managerial stock ownership and conservatism were in a U-shaped, nonlinear relationship and identified that the higher the ratio of outside directors in the board, the stronger the conservatism was. Kim et al. (2011) saw that with higher agency costs, investors would demand conservative accounting to reduce the agency costs, and they examined the relationship between agency costs and conservatism. According to the results of the analysis, the higher the agent cost, the higher the conservative inclination was.

Kim and Choi (2006) studied the effects of the characteristics of the audit committee and the board on conservatism. According to the results of the study, the conservative inclination was stronger when the number of outside directors on the board was larger, when accounting or financial experts were appointed on the board, and when the activity of the board was higher. Kim and Bae (2007) also analyzed the relationships between board characteristics and conservatism. According to the results of the study, the higher the independence of the outside directors and the higher the activity of the outside directors, the stronger the conservative inclination was. In addition, it has been identified that the conservative inclination was stronger when an audit committee existed, when the level of independence of the audit committee was higher, and when the activity of the audit committee was higher.

There have also been studies that examined conservatism in terms of auditors. DeFond and Subramanyam (1998) argued that, as it has been shown that a higher risk of litigation leads to smaller discretionary accruals, auditors prefer conservative accounting in cases where the risk of litigation is high. Francis and Krishnan (2002) examined the effects of the Private Securities Litigation Reform Act, which was introduced to reduce the risk of litigation in the United States on auditors. According to the results of the analysis, auditor conservatism was moderated after the introduction of the Private Securities Litigation Reform Act. Large accounting firms performed audits more conservatively because their losses due to the deterioration of their reputation due to litigation were larger (Kim et al. 2003; Khurana and Raman 2004; Paek and Yoo 2005).

Lee et al. (2013) examined whether conservative inclinations were different according to audit opinions. According to the results of the analysis, the firms that received unqualified audit opinions showed a stronger conservative inclination than those that received adverse audit opinions. Kwon et al. (2015) examined the effects of an audit partner's industry expertise on conservatism. The results of the analysis indicated that the conservative inclination of the firm being audited was high when the firm's audit partner had industry expertise. In addition, the shorter the audit period, the stronger the relationship between the audit partner's industry expertise and conservatism. Shin and Kim (2015)

studied whether the conservative inclination of auditors changed after the enforcement of the Internal Accounting Control System and the Securities-Related Class Action Act. According to the results of the study, the conservatism of auditors was relaxed after the introduction of the Internal Accounting Control System but was strengthened after the enforcement of the Securities-Related Class Action Act. Ha et al. (2015) analyzed the relationship between auditor designation and conservatism. According to the results of the analysis, the conservative inclinations of firms which designated auditors were stronger than those of firms that did not designate any auditor. In addition, it was shown that the conservative inclination was stronger during the period when auditors were designated than before or after the designation of auditors.

The above-mentioned studies examined the determinants that affect conservatism. Combining the results of those studies that examined the determinants in terms of auditors, it can be seen that the conservative inclinations of auditors differed according to the risk of litigation or audit risk as judged by the auditors; that is, if auditors judged the risk of litigation (audit risk) to be high, they performed more conservative audits in order to lower the risk of litigation. On reviewing the key audit matters which have been applied to the production-to-order industry in recent years, it can be seen that, due to the key audit matters, the internal information of auditors will be disclosed, and the range of the auditor's responsibilities will increase. Therefore, when key audit matters are applied, auditors may judge the risk of litigation to be high. Therefore, it has been judged that, in the case of companies being audited to which key audit matters are applied, the conservatism of the auditors will increase to lower the risk of litigation. In this respect, this study examines whether the conservatism of auditors increases due to KAMs.

In relation to KAMs, questionnaire studies have mainly been used. Through questionnaire surveys, Christensen et al. (2014) argued that the possibility to change investment decisions should be higher when an audit report including key audit matters is presented compared to when the existing audit report is presented, and that the possibility to change investment decisions would be higher when some contents are disclosed as key audit matters, compared to when the same contents are disclosed as notes on financial statements. Brasel et al. (2016) provided theory and experimental evidence that critical audit matters disclosures, under certain conditions, reduce auditor liability judgments as jurors perceive that undetected fraudulent misstatements are more foreseeable to the plaintiff (i.e., the financial statement user suing the auditor). Gimbar et al. (2016) also reported that the use of either imprecise standards or critical audit matters reduces the extent to which jurors perceive this constraint to exist, leading to increased auditor liability. In relation to auditor litigation risk, Vinson et al. (2019) investigated the effects of critical audit matters removal and duration on jurors' assessments of auditor negligence when there is a subsequent material misstatement due to fraud in the account related to the critical audit matters. The results showed that removal of critical audit matters increases auditor liability. Lennox et al. (2016) examined, using U.K. firms, whether disclosure of risks of material misstatement (RMM) was informative to investors. Using short-window event study tests, they found that auditors' risk disclosures were not incrementally informative, while further analyses using long-window tests reported that auditors' risk disclosures were informative to investors.

Meanwhile, Pinto and Morais (2019) found that a higher number of business segments (complexity) and more precise accounting standards lead to the disclosure of a higher number of KAMs. They also found that a positive association exists between the audit fee and the number of KAMs disclosed. Reid (2015) reported that companies employing auditors that tend to provide more detailed audit reports have more significant reductions in information asymmetry. Additionally, Sierra-García et al. (2019) reported that auditor and client characteristics are determinants of the number of KAMs disclosed and, moreover, determine the type of KAMs disclosed in the audit reports.

Sirois et al. (2018) found that KAMs have attention-directing impact, in that participants access KAM-related disclosures more rapidly and pay relatively more attention to them when KAMs are communicated in the auditor's report. However, when exposed to an auditor's report with several KAMs, participants devote less attention to the remaining parts of the financial statements. Kim et al.

(2016) conducted a questionnaire survey with public accounting firms in order to estimate the effects of the introduction of the revised international audit standards on the audit environment and to prepare countermeasures. According to the results of the study, certified public accountants predicted that audit quality and financial reporting quality would not be improved, even if key audit matters were added to audit reports. In addition, certified public accountants answered that concrete guidelines and regulations should be prepared to select key audit matters. On the other hand, this study is differentiated from previous studies in that it empirically analyzes the effects of key audit matters.

2.2. Research Hypotheses

Due to the introduction of key audit matters, auditors should select and intensively audit key audit matters and write the reasons why they selected the key audit matters, along with the audit procedures and results, in their audit reports. Key audit matters are the most significant matters in accounting audits based on the auditor's professional judgment. According to the study of Kim et al. (2016), auditors should determine key audit matters by considering the effects of significant auditor judgments related to those fields for which the risk of significant distorted indications has been evaluated to be high or identified as having significant risks, those fields of financial statements involving significant management judgments (including accounting estimates identified to have high estimation uncertainty), and those in which significant events or transactions occurred during the reporting period of the audit. That is, key audit matters can be judged to be matters for which the possibility of distorted indications in the financial statements is high.

Previously, auditors have judged such matters only internally. In addition, auditors wrote only their overall audit opinions on the audit reports instead of audit results for individual items. However, since key audit matters have been introduced, an auditor should describe the key audit matters, related audit procedures, and audit results together in their audit reports. That is, the auditor should publicly disclose those matters which have been internally judged. Disclosing internal information should act as a burden to all involved parties. In particular, if any information user suffers damage due to wrong information, the auditor may face a lawsuit. If a lawsuit is filed, the auditor will bear the litigation-related costs, decline in reputation, and so on, regardless of the result of the lawsuit. Paek and Yoo (2005) reported that a higher risk of litigation leads auditors to more conservatively perform their audits. Therefore, it has been judged that, after the introduction of key audit matters, auditors have conducted more conservative audits to reduce the risk of litigation. Therefore, this study sets a hypothesis, as follows:

Hypothesis 1 (H1). *After the introduction of key audit matters, auditors conduct more conservative audits.*

3. Research Design and Sample Selection

3.1. Empirical Models

This study is to see whether auditors have been performing auditing work more conservatively following the introduction of key audit matters. To analyze the foregoing, based on the model of Reid (2015), this study sets up Model (1) as follows:

$$\begin{aligned} CONS_t \quad &= \beta_0 + \beta_1 KAM_t + \beta_2 SIZE_t + \beta_3 LEV_t + \beta_4 GRW_t + \beta_5 ROA_t + \beta_6 LOSS_t \\ &+ \beta_7 IR_t + \beta_8 LIQUID_t + \beta_9 BIG4_t + \beta_{10} OWN_t + \beta_{11} FOR_t + \beta_{12} MK_t \\ &+ \sum IND + \varepsilon_t \end{aligned} \tag{1}$$

where:

$CONS1_t$ = the conservatism measure proposed by Givoly and Hyan (2000);
$CONS2_t$ = the conservatism measure proposed by Kim and Bae (2006);
$CONS3_t$ = the conservatism measure proposed by Khan and Watts (2009);

KAM_t = an indicator variable, for which the value is 1 for after the introduction of KAM and 0 otherwise;
$SIZE_t$ = the natural log of the total assets;
LEV_t = the total debt to total assets ratio;
GRW_t = the total assets growth rate;
ROA_t = the net income divided by the lagged total assets;
$LOSS_t$ = an indicator variable which takes a value of 1 if a loss was reported in the previous period, and 0 otherwise;
IR_t = the ratio of inventory assets and accounts receivables;
$LIQUID_t$ = the current ratio, which is calculated by dividing current assets by current liabilities;
$BIG4_t$ = an indicator variable which takes the value of 1 if the firm was audited by BIG4 auditors, and 0 otherwise;
OWN_t = the major shareholder ownership ratio;
FOR_t = the foreign ownership ratio;
MK_t = an indicator variable, which is 0 for companies listed on the KOSPI market and 1 for companies listed on the KOSDAQ (Korea Securities Dealers Automated Quotations) market of the Korean Exchange;
IND = an industry dummy.

If the auditor evaluates the risk of litigation for companies to which key audit matters are applied to be high and tries to reduce the risk, he or she will perform auditing work more conservatively. Therefore, KAM_t, which indicates whether key audit matters were introduced or not, is judged to show a positive (+) regression coefficient.

The control variables are those variables that have been shown to affect conservatism in previous studies. The previous studies reported that larger firms preferred conservative accounting, as their political costs were larger, and that auditors performed more conservative audits for larger firms because their risk of litigation due to audit failure was larger (Ahmed et al. 2002; Han and Moon 2009). However, there have also been studies that reported that conservative inclinations were weaker in the case of larger firms (Ahmed and Duellman 2013; LaFond and Roychowdhury 2008). It has been shown that, as the debt ratio increases, the conflicts of interest between shareholders and creditors intensify, and the possibility of earnings management by the manager increases (LaFond and Watts 2008; Gigler et al. 2009; Kim and Bae 2006). Therefore, in this study, LEV_t, which represents the debt ratio, is introduced into the model. Roychowdhury and Watts (2007) and Khan and Watts (2009) argued that growth potential affects conservatism. Accordingly, to control the effect of growth on conservatism, GRW_t, which represents the total asset growth rate, is also included in the control variables.

In previous studies, rates of return have also been used as a control variable for conservatism (Kang and Hwang 2007; Kim 2015). Therefore, this study also uses the return on assets (ROA_t) and whether losses were reported ($LOSS_t$) as control variables. To control the effects of the ratio of inventory assets and account receivables and the current rate on conservatism, IR_t and $LIQUID_t$ were also included in the model (Ahmed et al. 2002; Shin and Kim 2015). BIG 4 audit firms have been shown to conduct audits more conservatively as their losses and decline of reputation due to litigation are larger (Geiger and Rama 2006; Kang 2006). According to previous studies, corporate governance affects conservative inclinations (LaFond and Roychowdhury 2008; Kim 2015). To control the effects of corporate governance, this study uses major shareholder ownership and foreign ownership as control variables. In addition, to control for the effects of the stock markets, the dummy variable (MK_t) is used, for which the value is 1 for KOSDAQ listed companies and 0 for KOSPI listed companies, as a control variable. Finally, to control the effects of industries, an industry dummy (IND) is added as a control variable.

3.2. Conservatism Measures

According to previous studies, there exist diverse methods to measure conservatism, and different results may appear depending on the measurement method. Therefore, this study uses various conservatism measures to reduce the possibility of distortion due to measurement error and to give robustness to the result. Conservatism measurements are largely classified into conditional conservatism and unconditional conservatism. From a comprehensive perspective, this study uses the conditional conservatism of Khan and Watts (2009) and the unconditional conservatism of Givoly and Hyan (2000) and Kim and Bae (2006) to examine the relationships between KAM and conservatism. Conservatism measurements used in this study are as follows.

The first conservatism measure ($CONS1_t$) is the nonoperating accruals, proposed by Givoly and Hyan (2000). Nonoperating accruals are those accruals that can be adjusted by managers at discretion and include bad debt expenses, impairment losses, gains and losses on asset valuation, and gains and losses on asset disposal. Givoly and Hyan (2000) argued that the stronger the conservative inclination, the smaller the nonoperating accrual is. For convenience of interpretation, $CONS1_t$ is calculated by multiplying the nonoperating accruals by −1. Therefore, it can be interpreted that larger values of $CONS1_t$ represent stronger conservative inclinations:

$$CONS1_t = (-1) \times (TA_t - OA_t) \,/ CFO_t \tag{2}$$

where $CONS1_t$ is the nonoperating accruals proposed by Givoly and Hyan (2000); TA_t is the total accruals before deducting depreciation costs; OA_t is the operating accruals; and CFO_t is the cash flow from operating activities.

The second conservatism measure ($CONS2_t$) is the measure proposed by Kim and Bae (2006). As there are differences in financial statement items between South Korea and the United States, Kim and Bae (2006) used the conservatism measures of Penman and Zhang (2002) after revising them to fit the actual circumstances of South Korea. This study measures $CONS2_t$ according to the method of Kim and Bae (2006). Larger values of $CONS2_t$ indicate a stronger conservative inclination.

$$CONS2_t = ER_t \,/ NOA_t \tag{3}$$

where $CONS2_t$ is the conservatism measure proposed by Kim and Bae (2006); ER_t is the sum of R&D expenses, advertising expenses, loss on asset impairment, loss from valuation of inventories, depreciation cost, and bad debt expenses; and NOA_t is the net operating assets.

The third conservatism measure ($CONS3_t$) is the conservatism measure proposed by Khan and Watts (2009). Khan and Watts (2009) extended the model of Basu (1997) to measure conservatism as follows: first, estimate the coefficients c1–c4 by regression analysis of Equation (3) by year, and then calculate $CONS3_t$ using the estimated coefficients and $SIZE_t$, MB_t, and LEV_t values of each firm as shown in Equation (4). $CONS3_t$ indicates the timeliness of losses. Therefore, larger values of $CONS3_t$ indicate a stronger conservative inclination:

$$\begin{aligned} X_t = a_1 \quad & +a_2 D_t + R_t \times (b_1 + b_2 SIZE_t + b_3 MB_t + b_4 LEV_t) \\ & + D_t \times R_t \times (c_1 + c_2 SIZE_t + c_3 MB_t + c_4 LEV_t) \\ & + (d_1 SIZE_t + d_2 MB_t + d_3 LEV_t + d_4 D_t \times SIZE_t + d_5 D_t \times MB_t + d_6 D_t \times LEV_t) \\ & + \varepsilon_t \end{aligned} \tag{4}$$

where X_t is the net income of year t divided by the lagged total assets; R_t is the annual stock returns accumulated from April of year t to March of year $t + 1$; D_t is an indicator variable, which takes a value of 1 if $R_t < 0$ and 0 otherwise; $SIZE_t$ is the natural logarithm of the total assets; MB_t is the market value of equity divided by the book value of equity; and LEV_t is the ratio of total debt to market value of equity.

$$CONS3_t = c_1 + c_2 SIZE_t + c_3 MB_t + c_4 LEV_t \tag{5}$$

3.3. Samples and Data

The sample used in our study consists of firms in the manufacturing industries listed on the Korean Exchange (KOSPI and KOSDAQ market) and having a fiscal year ending in December. As KAM for Korea's production-to-order industry is applied from audit reports on the financial statements for fiscal year 2016, the samples of this study are companies that have disclosed key auditing entries in the audit report for fiscal year 2016. This study compares before and after the introduction of KAM to examine the effects of KAM. In other words, this study compares the auditor's conservative audit between the year before (2015) and after (2016) the introduction of KAM. Audit reports before and after the introduction of key audit matters are compared in order to examine the effects of the introduction of key audit matters. Therefore, the analysis period in this study is from 2015 to 2016. The data on key auditing entries were collected by first-hand checking of the 2016 audit reports. The financial data required for analysis were extracted from the KIS-VALUE and TS-2000 data sets. Among the companies listed on the Korean Exchange, 246 disclosed key auditing entries in their 2016 audit report. To compare between 2015 and 2016, the total sample for analysis is 492 firm-year observations. Among them, companies that could not measure control variables, such as SIZE and ROA, were excluded from the samples. In addition, companies that could not measure conservatism, a dependent variable of the model, were excluded. Accordingly, this study finally used 448 firm-year observations in the analysis.

Table 1 shows the distribution of sample firms by year and industry based on the two-digit classification of the Korea Standard Industry. The most frequent industry is comprehensive construction industries.

Table 1. The Year-Industry Distribution of the Sample.

Industry	2015	2016
Manufacture of textile products, clothing, clothing accessories, and fur products	2	2
Manufacture of wood, wood products, pulp, and paper products, excluding furniture	2	2
Manufacture of chemical materials and chemical products, excluding medicines	7	8
Manufacture of rubber and plastic products	3	3
Manufacture of nonmetallic mineral products	8	8
Manufacture of primary metal	7	7
Manufacture of metal-processed products, excluding machinery and furniture	9	12
Manufacture of electronic components, computers, video, sound, and communication equipment	6	8
Manufacture of medical, precision, optics, and watch	5	5
Manufacture of electrical equipment	11	11
Manufacture of other machines and equipment	40	46
Manufacture of cars and trailers	4	4
Manufacture of other transportation equipment	11	10
Electricity, gas, steam, and air conditioning supply industries	2	2
Comprehensive construction industries	51	52
Wholesale trade and commission trade industries	7	7
Air transport, publishing, and telecommunications	9	9
Computer programming, system integration, and management	7	9
Professional services	14	14
Architectural technology, engineering, and other technical services	11	11
Total	217	231

4. Empirical Results

4.1. Descriptive Statistics

Table 2 shows the descriptive statistics of the variables used in this study. To reduce the effects of extreme values, this study adjusted the upper 1% and lower 1% of the continuous variables to the values of the upper 1% and lower 1%, respectively. In Table 2, the median (mean) value of $CONS1_t$ is

0.6246 (1.8940), which indicates a slightly right-skewed distribution. In addition, the median (mean) value of $CONS2_t$ is 0.0216 (0.0542), and the median (mean) value of $CONS3_t$ is 0.1055 (0.0659), which indicates a slightly left-skewed distribution. The mean of KAM_t, which indicates whether key audit matters were applied, was 0.5156. This indicates that 231 companies reported key auditing entries in their 2016 audit reports. As for the control variables, the median (mean) of $SIZE_t$, representing firm size, is 26.1768 (26.6407). The distribution of LEV_t stays stable around the median value of 0.5167, and OWN_t is also stable in a range from 0.1644 to 0.5077. The median (mean) value of GRW_t, which is 0.0496 (0.1206), shows that the overall growth of the sample firm is positive. In addition, the median (mean) value of ROA_t, which is 0.0208 (0.0137), shows that the overall profitability of the sample firm is positive. The mean value of $LOSS_t$, which is 0.3058, shows that about 30.5% of the entire sample are loss reported companies. The median (mean) value of IR_t is 0.2172 (0.2294). The median (mean) of $LIQUID_t$, which represents the current ratios, was shown to be 1.3699 (1.6576). The mean value of $BIG4_t$, which is 0.5446, shows that about 54.4% of the final samples are audited by BIG 4 auditors. The mean value of MK_t, which is 0.5379, shows that about 53.7% of the final samples are firms listed on the KOSDAQ market of the Korean Exchange.

Table 2. Descriptive Statistics (n = 448).

Variable	Mean	Std.	25%	Median	75%
$CONS1_t$	1.8940	6.8466	−0.3462	0.6246	1.7364
$CONS2_t$	0.0542	0.1615	0.0094	0.0216	0.0529
$CONS3_t$	0.0659	0.7301	−0.1016	0.1055	0.2580
KAM_t	0.5156	0.5003	0	1	1
$SIZEt_t$	26.6407	1.7921	25.3551	26.1768	27.5114
LEV_t	0.5162	0.1951	0.3802	0.5167	0.6433
GRW_t	0.1206	0.3787	−0.0177	0.0496	0.1366
ROA_t	0.0137	0.1091	−0.0080	0.0208	0.0554
$LOSS_t$	0.3058	0.4613	0	0	1
IR_t	0.2294	0.1332	0.1364	0.2172	0.3082
$LIQUID_t$	1.6576	1.0453	0.9720	1.3699	2.0741
$BIG4_t$	0.5446	0.4986	0	1	1
OWN_t	0.3936	0.1644	0.2671	0.3935	0.5077
FOR_t	0.0676	0.1073	0.0089	0.0237	0.0832
MK_t	0.5379	0.4991	0	1	1

Variable definitions: $CONS1_t$ is the conservatism measure proposed by Givoly and Hyan (2000); $CONS2_t$ is the conservatism measure proposed by Kim and Bae (2006); $CONS3_t$ is the conservatism measure proposed by Khan and Watts (2009); KAM_t is an indicator variable, for which the value is 1 for after the introduction of KAM and 0 otherwise; $SIZE_t$ is the natural log of the total assets; LEV_t is the total debt to total assets ratio; GRW_t is the total assets growth rate; ROA_t is the net income divided by the lagged total assets; $LOSS_t$ is an indicator variable which takes a value of 1 if a loss was reported in the previous period and 0 otherwise; IR_t is the ratio of inventory assets and accounts receivables; $LIQUID_t$ is the current ratio, which is calculated by dividing current assets by current liabilities; $BIG4_t$ is an indicator variable which takes the value of 1 if the firm was audited by BIG 4 auditors and 0 otherwise; OWN_t is the major shareholder ownership ratio; FOR_t is the foreign ownership ratio; and MK_t is an indicator variable, which is 0 for companies listed on the KOSPI market and 1 for companies listed on the KOSDAQ market of the Korean Exchange.

4.2. Correlation Analysis

Table 3 shows the results of a correlation analysis between the variables used in this study. As for the correlations between conservatism measures, $CONS1_t$ and $CONS2_t$ did not show any significant correlation, but the correlation coefficient between $CONS1_t$ and $CONS3_t$, as well as that between $CONS2_t$ and $CONS3_t$, was shown to have significant positive (+) values. As for the correlations between key audit matters (KAM_t) and conservatism measures, KAM_t was shown to have significant positive (+) correlations with $CONS1_t$ and $CONS3_t$. These results can be interpreted as indicating increases in the conservatism of auditors due to the application of the key audit matters. As for the correlations between the conservatism measures and the control variables, the correlation coefficient between $CONS1_t$ and LEV_t was shown to have a significant positive (+) value. This suggests that the higher the

debt ratio, the stronger the conservative inclination was. Meanwhile, $CONS2_t$ had significant positive (+) correlations with LEV_t and $LOSS_t$. In addition, $CONS2_t$ was shown to have significant negative correlations with GRW_t, ROA_t, IR_t, $LIQUID_t$, and FOR_t. Therefore, it can be said that conservative inclinations were higher when the debt ratio was higher and when losses were reported; furthermore, it can be inferred that conservative inclinations were lower when the growth rate was higher, when the performance was higher, when the ratio of inventories and account receivables was higher, when the current ratio was higher, and when the foreign ownership was higher.

Table 3. Correlations among the Variables.

	$CONS1_t$	$CONS2_t$	$CONS3_t$	KAM_t	$SIZE_t$	LEV_t	GRW_t	ROA_t	$LOSS_t$	IR_t	$LIQUID_t$	$BIG4_t$	OWN_t	FOR_t
$CONS2_t$	−0.0061													
$CONS3_t$	**0.0850**	**0.2603**												
KAM_t	**0.1188**	0.0510	**0.3299**											
$SIZE_t$	0.0323	−0.0562	**−0.1696**	0.0045										
LEV_t	**0.0865**	**0.2140**	0.0067	0.0019	**0.4163**									
GRW_t	0.0098	**−0.1115**	−0.0841	0.0201	0.0154	−0.0394								
ROA_t	0.0276	**−0.2582**	**−0.0982**	−0.0122	**0.1430**	**−0.3121**	**0.3193**							
$LOSS_t$	−0.0083	**0.1601**	0.0728	**−0.0838**	0.0459	**0.4380**	**−0.0841**	**−0.3286**						
IR_t	0.0351	**−0.0820**	0.0079	0.0572	**−0.1771**	**−0.1047**	**0.0983**	**0.1165**	**−0.1356**					
$LIQUID_t$	−0.0386	**−0.0946**	−0.0373	−0.0325	**−0.2767**	**−0.7080**	0.0249	**0.2863**	**−0.3312**	**0.1138**				
$BIG4_t$	0.0695	0.0392	**−0.1223**	−0.0252	**0.4909**	0.**2041**	−0.0676	0.0448	0.0037	**−0.1368**	**−0.1507**			
OWN_t	0.0641	−0.0638	−0.0247	−0.0199	**0.1160**	−0.0627	**−0.1667**	**0.1218**	**−0.1318**	−0.0313	0.0612	**0.1610**		
FOR_t	−0.0216	**−0.0815**	**−0.0809**	0.0302	**0.4635**	−0.0316	0.0368	**0.1592**	**−0.0802**	**−0.1058**	0.0619	**0.2367**	−0.0070	
MK_t	−0.0494	−0.0201	0.0727	0.0155	**−0.6223**	−0.**3108**	**0.1204**	−0.0841	−0.0841	**0.1924**	**0.2200**	**−0.3260**	**−0.2214**	**−0.3029**

Notes: This table presents Pearson correlations. Coefficients shown in bold are significant at $p < 0.05$ (two-tailed test). Please see Table 2 for variable definitions.

4.3. Univariate Results

Table 4 shows the comparison of each dependent variable (*CONS1*, *CONS2*, and *CONS3*) as well as each control variable for the pre-period (KAM = 0) and the post-period (KAM = 1) of KAM introduction. $CONS1_t$ significantly increased from −0.1378 prior to KAM introduction to 3.8309 during the first year of KAM introduction ($p < 0.01$). $CONS3_t$ significantly increased from –0.1823 prior to KAM introduction to 0.2990 during the first year of KAM introduction ($p < 0.01$). These univariate results provide initial evidence in support of the hypothesis.

Table 4. Univariate Results (n = 448).

Variable	KAM = 0 (n = 217)	KAM = 1 (n = 231)	T-Test
$CONS1_t$	−0.1678	3.8309	−2.68 ***
$CONS2_t$	0.0457	0.0621	−1.11
$CONS3_t$	−0.1823	0.2990	−7.38 ***
$SIZE_t$	26.6325	26.6485	−0.09
LEV_t	0.5158	0.5165	−0.04
GRW_t	0.1128	0.1280	−0.42
ROA_t	0.0151	0.0124	0.26
$LOSS_t$	0.3456	0.2684	1.78 *
IR_t	0.2215	0.2367	−1.21
$LIQUID_t$	1.6926	1.6247	0.68
$BIG4_t$	0.5576	0.5325	0.53
OWN_t	0.3970	0.3904	0.42
FOR_t	0.0642	0.0707	−0.64
MK_t	0.5300	0.5455	−0.33

Note: This table reports the univariate results. ***, * represent significance at the 0.01 and 0.1 levels, respectively. Please see Table 2 for variable definitions.

4.4. Multivariate Results

Table 5 shows the result of the test of the hypothesis that auditors will perform auditing work more conservatively in the case of companies to which key audit matters are applied. The first column of Table 4 shows the results of regression analysis using $CONS1_t$, the conservatism measure proposed by Givoly and Hyan (2000), as a dependent variable. The regression coefficient of KAM_t, indicating whether key audit matters were applied, was shown to have a positive (+) value, which was significant at the 1% level. This means that, when key audit matters were applied, auditors performed auditing work more conservatively. As for the results of analysis of the control variables, $BIG4_t$ showed a significant positive (+) regression coefficient value. This means that Big 4 auditors performed auditing work more conservatively, in agreement with the findings of Paek and Yoo (2005).

Table 5. The Effects of KAM on Conservatism (n = 448).

Variable	CONS1		CONS2		CONS3	
	Coefficient	***t*-Value**	**Coefficient**	***t*-Value**	**Coefficient**	***t*-Value**
Intercept	18.029	0.87	0.321	1.76 *	2.062	1.96 **
KAM_t	3.084	2.85 ***	0.021	1.73 *	0.495	7.45 ***
$SIZE_t$	−0.472	−0.70	−0.015	−1.98 **	−0.087	−2.84 ***
LEV_t	4.691	0.75	0.272	3.80 ***	0.225	0.71
GRW_t	−0.472	−0.33	−0.017	−0.73	−0.165	−1.74 *
ROA_t	7.851	1.05	−0.246	−2.88 ***	0.087	0.23
$LOSS_t$	−0.472	−0.04	0.013	0.70	0.132	1.85 *
IR_t	4.229	0.77	−0.072	−1.15	−0.206	−0.74
$LIQUID_t$	−0.472	−0.24	0.027	2.82 ***	−0.004	−0.07
$BIG4_t$	2.073	1.70 *	0.032	1.73 *	−0.082	−1.01
OWN_t	3.502	0.78	−0.044	−0.85	0.055	0.24
FOR_t	−0.472	−0.02	−0.040	−0.48	0.101	0.27
MK_t	0.066	0.04	−0.027	−1.26	−0.015	−0.58
Industry Dummy	Included		Included		Included	
$Adj.R^2$	0.3391		0.0656		0.0935	
F-value	12.19 ***		11.54 ***		10.75 ***	

Note: This table reports the effects of KAM on conservatism. ***, **, * represent significance at the 0.01, 0.05, and 0.1 levels, respectively. Please see Table 2 for variable definitions.

The second column of Table 5 shows the results of regression analysis using CONS2t, the conservatism measure proposed by Kim and Bae (2006), as a dependent variable. The regression coefficient of KAM_t was a significant positive (+) value. This result can be interpreted as indicating that auditors performed auditing work more conservatively due to the application of key audit matters. The regression coefficient of $SIZE_t$ had a significant negative (−) value. This result indicates that the larger the firm size, the weaker the conservative inclination was (Ahmed and Duellman 2013). Furthermore, LEV_t had a significant positive (+) regression coefficient, indicating that the higher the debt ratio, the stronger the conservative inclination was.

The regression coefficient of ROA_t had a significant negative (−) value, similar to the findings of Ahmed et al. (2002), indicating that the higher the profitability, the weaker the conservative inclination was. $LIQUID_t$ had a significant positive (+) regression coefficient value, suggesting that the higher the current ratio, the stronger the conservative inclination was. BIG4t showed a significant positive (+) regression coefficient value, thereby supporting the argument that the Big 4 auditors performed auditing work more conservatively.

The third column of Table 5 is the result of regression analysis using $CONS3_t$, the conservatism measure proposed by Khan and Watts (2009), as a dependent variable. The regression coefficient of KAM_t had a significant positive (+) value, indicating that application of key audit matters increased the conservatism of auditors. The regression coefficient of $SIZE_t$ had a significant negative (−) value, indicating that the larger the firm size, the weaker the conservative inclination was. In addition, the regression coefficient of GRW_t had a significant negative (−) value, and the regression coefficient of $LOSS_t$ had a significant positive (+) value, indicating that the higher the growth potential, the weaker the conservative inclination was, and that the conservative inclination was stronger when losses had been reported. Combining the above-mentioned results, Table 4 can be interpreted as supporting the hypothesis of this study that auditors will perform auditing work more conservatively in the case of companies to which key audit matters have been applied.

4.5. Additional Analysis

Although the results of the main analysis may be attributable to time-series characteristics, the time-series properties could not be controlled for, as only data for one year before and after the

introduction of key audit matters being used. In other words, the results of Table 5 may be mixed with the effects of the introduction of KAM and the market conditions (year change). Therefore, we additionally conducted a cross-sectional analysis using change variables. Through this, we investigated whether conservatism of all firms increased by market condition, or conservatism increased by adoption of KAM. The resultant model is as follows:

$$\begin{aligned}\Delta CONS_t = \beta_0 \quad & +\beta_1 KAM_t + \beta_2 \Delta SIZE_t + \beta_3 \Delta LEV_t + \beta_4 \Delta GRW_t + \beta_5 \Delta ROA_t + \beta_6 LOSS_t \\ & + \beta_7 \Delta IR_t + \beta_8 \Delta LIQUID_t + \beta_9 BIG4_t + \beta_{10} \Delta OWN_t + \beta_{11} \Delta FOR_t \\ & + \beta_{12} MK_t + \sum IND + \varepsilon_t\end{aligned} \tag{6}$$

where $\Delta CONS_t$ is variation in conservatism measures as dependent variable; $\Delta CONS1_t$ is the variation in the conservatism measure of Givoly and Hyan (2000); $\Delta CONS2_t$ is the variation in the conservatism measure of Kim and Bae (2006); $\Delta CONS3_t$ is the variation in the conservatism measure of Khan and Watts (2009); KAM_t is an indicator variable, which takes the value of 1 for after the introduction of KAM and 0 otherwise; $\Delta SIZE_t$ is the variation of the natural log of total assets; ΔLEV_t is the variation of the total debt to total assets ratio; ΔGRW_t is the variation of the total assets growth rate; ΔROA_t is the variation of the return on assets; $LOSS_t$ is an indicator variable that takes the value of 1 if a loss was reported in the previous period and 0 otherwise; ΔIR_t is the variation of the ratio of inventory assets and accounts receivables; $\Delta LIQUID_t$ is the variation of the current ratio; $BIG4_t$ is an indicator variable that takes the value of 1 if the firm was audited by Big 4 auditors and 0 otherwise; ΔOWN_t is the variation of the major shareholder ownership ratio; ΔFOR_t is the variation of the foreign ownership ratio; and MK_t is an indicator variable that is 0 for companies belonging to the securities market and 1 for companies belonging to the KOSDAQ market.

A total of 1484 samples were used in the analysis using variations, and 216 (about 14.56% of them) were companies that introduced key audit matters. To calculate the variations, both current and previous period data must be present; that is, companies for which all the data for two years were not available were excluded. The results of the analysis using variations are presented in Table 6. In the results of the analysis, the regression coefficient of KAM_t, which indicates companies that had introduced key audit matters in all analyses, had a significant positive (+) value. This means that the auditors performed auditing work more conservatively when auditing companies that introduced key audit matters. These results show that the results of Table 5 are not simply based on market conditions (year change) but the effects of adoption of KAM.

Table 6. The Effects of KAM on Conservatism Using Change in Variables (n = 1.484).

Variable	ΔCONS1		ΔCONS2		ΔCONS3	
	Coefficient	***t*-Value**	**Coefficient**	***t*-Value**	**Coefficient**	***t*-Value**
Intercept	−0.009	−0.01	0.053	2.60 **	0.436	7.93 ***
KAM_t	2.108	2.97 ***	0.024	1.77 *	0.128	3.05 ***
$\Delta SIZE_t$	0.720	0.42	−0.217	−6.04 ***	−0.194	−1.99 ***
ΔLEV_t	−6.087	−1.96 **	0.611	8.02 ***	0.384	1.86 **
ΔGRW_t	−0.442	−0.47	−0.038	−1.94 **	−0.123	−2.34 **
ΔROA_t	−0.131	−0.05	−0.226	−4.07 ***	0.423	2.81 ***
$LOSS_t$	0.118	0.20	0.012	0.98	0.046	1.65 *
ΔIR_t	−2.239	−0.51	−0.291	−3.21 ***	−0.137	−0.56
$\Delta LIQUID_t$	0.056	0.30	0.001	0.14	0.004	0.41
$BIG4_t$	0.322	0.63	−0.003	−0.30	0.102	3.51 ***
ΔOWN_t	−0.102	−0.03	−0.150	−2.01 **	0.062	0.31
ΔFOR_t	−1.393	−0.23	−0.311	−2.49 **	0.251	0.74
MK_t	−0.819	−1.70 *	−0.001	−0.05	−0.207	−6.52 ***
Industry Dummy	Included		Included		Included	
$Adj.R^2$	0.0076		0.1201		0.1136	
F-value	5.9 ***		5.73 ***		5.40 ***	

Note: This table reports the effects of KAM on conservatism using change in variables. ***, **, * represent significance at the 0.01, 0.05, and 0.1 levels, respectively. Please see Table 2 for variable definitions.

5. Discussion and Conclusions

In this study, we provided insight into the potential impact of the introduction of KAM on auditor liability. The presence of any KAMs in the audit report leads auditors to increase their assessed engagement risk. Therefore, auditors likely have to expand auditing procedures for all aspects of the audit, consequently increasing audit fees (Hogan and Wilkins 2008). These actions also result in high financial reporting quality. In a financial reporting context, our study suggests that disclosure of the inherent difficulties of measuring certain transactions, events, and circumstances may improve evaluator assessments of management's competence (Skinner 1994).

Taken as a whole, our results suggest that highlighting financial statement disclosures with KAMs directs users' information search and increases their attention to related disclosures relative to their level of attention to the full set of financial statements. Our results also suggest that auditors evaluated the risk of litigation highly due to the introduction of key audit matters and performed auditing work more conservatively to lower the risk of litigation. Overall, our findings indicate that users give greater importance to key auditing entries, and confirm the role of KAM in enhancing the accounting transparency. Furthermore, our study suggests that KAMs have the potential to influence users' decisions.

This study is meaningful in that it empirically analyzes the effect of the introduction of the recently implemented KAM. A more conservative auditor's audit suggests that firms are more likely to modify their financial statements if they perform aggressive accounting. For the capital market participant, conservatively prepared financial statements are expected to reduce the risk of investor losses. These are judged to become a basis for future studies on KAM. The limitation of our study is the problem of omitted variables in the empirical model of conservatism. In addition, our study performed the analysis on the data of a short period and only one industrial sector, so the robustness of the results seems to be insufficient. In the future, research conducted on other industries as well as conducting across countries seems necessary.

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