

KIFRS Adoption and Audit Risk

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Abstract

After principles-based KIFRS (Korean International Financial Reporting standards) adoption, it is expected that managers will carry out arbitrary and opportunistic accounting, and that the extension of fair value evaluation model will increase the volatility in the reported values of assets and earnings as well. These factors will increase audit complexity and lead to an increase in audit risk. So in this paper, we examine whether the audit risk- inherent risk and control risk is increased after KIFRS mandatory adoption. Inherent risk is measured as the propensity of substantial doubt about going-concern and control risk is measured as the propensity of internal control deficiencies. The overall findings suggest that the probability of going-concern opinion and internal control deficiencies reporting is decreased after KIFRS mandatory adoption. The decrease of going concern opinion is appeared mainly by firm characteristic variation, auditor' perception of firm risk (inherent risk) is not changed after KIFRS mandatory adoption. And the decrease of internal control deficiencies reporting is appeared partly by firms' characteristic improvement, and auditors also have perceived firms' risk (control risk) decrease after KIFRS mandatory adoption.

Keywords: Audit Risk, Control Risk, Inherent Risk, KIFRS Adoption

1. Introduction

Since January 1, 2011, all listed companies in Korea have been required to prepare financial statements based on KIFRS (Korean International Financial Reporting standards). The principles-based KIFRS, which asks for the use of frequent judgment and the extension of the fair value method, increase accounting and audit complexity and lead to an increase in audit risk in the short term by the KIFRS adoption. Thus, auditors will make effort to control audit risk through selective audit engagement, the increase of audit fee and audit time, and conservative accounting and conservative audit opinion.

Prior researches investigate indirectly that audit risk has been increased after KIFRS mandatory adoption by audit fee, audit time, discretionary accruals. However, there is no research to analyze whether IFRS adoption impacts directly on the audit risk components.

In this paper, we examine whether the increase of audit risks components-inherent risk and control risk

after KIFRS mandatory adoption. This study has the contribution of first attempt to consider the effects of KIFRS adoption on inherent risk and control risk.

2. Hypothesis Development

The environment of accounting and audit would be changed by KIFRS adoption. Overall, the principles-based K-IFRS are expected to provide greater relevance and better representation of economic transactions in the financial statements. Most people insist that the transparency of accounting will be increased according to the adoption of KIFRS. But because the use of frequent judgment and the extension of the fair value method are the most common and important factors in K-IFRS, these factors increase accounting and audit complexity and lead to the increase in audit risk.

According to the ISAs 400, the audit risk is defined as the risk that the auditor gives an inappropriate audit opinion when the financial statements are materially

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misstated. Audit risk has three components: inherent risk, control risk and detection risk. Inherent risk is the susceptibility of an account balance or class of transactions to misstatement that could be material, assuming that there were no related internal controls. Control risk is the risk that a material misstatement that could occur in an account balance or class of transactions will not be prevented or detected and corrected on a timely basis by the accounting and internal control systems. These two components, inherent risk and control risk, describe the final result of the risk of material misstatement, which are the company's risks and exist independently of the audit. Thus, either higher inherent risk or higher control risk results in a higher probability of material misstatement. The risk of material misstatement has an inverse relationship with the third component of audit risk, the detection risk^{1,2}.

Prior researches indicate that high-quality accounting standards do not equate to high-quality accounting information. And most studies have documented the increases in audit fees and times after the adoption of IFRS. Reference 3 found that inherent risk and control risk are positively associated with audit fee, as well as audit time. But there is no research to see whether IFRS adoption impacts directly on the audit risk components.

In this case, we want to observe a relationship between IFRS mandatory adoption and audit risk variation. We formulate the null hypothesis as follows:

- H1: KIFRS mandatory adoption increase Audit risk.
- H1-1: KIFRS mandatory adoption increase inherent risk.
- H1-2: KIFRS mandatory adoption increase control risk.

3. Research Design

3.1 Sample Selection

We analyze all the companies which are listed in KOSPI (The Korea Composite Stock Price Index) and KOSDAQ (The Korean Securities Dealers Automated Quotations) from 2007 to 2013. In the sample selection procedure, we exclude firms that are financial industries, firms without financial data, and firms with missing data for audit opinion and auditor's review on internal control systems, and firms with non-December financial year-end dates and early adoption of KIFRS.

3.2 Derivatization Procedure

In this paper, we examine whether the audit risk components-inherent risk and control risk after KIFRS mandatory adoption are increased. Inherent risk is measured as the propensity of substantial doubt about going-concern and control risk is measured as the propensity of internal control deficiencies.

Following logistic regression models are used to measure the inherent risk (1) and control risk (2). The choice of independent variables is based on previous work⁴⁻⁸.

$$GC_{it} = \alpha_o + \alpha_1 SIZE_{it} + \alpha_2 LEV_{it} + \alpha_3 LIQ_{it} + \alpha_4 ROA_{it} + \alpha_5 LOSS_{it} + \alpha_6 CFO_{it} + \alpha_7 Big4_{it} + \alpha_8 RET_{it} + \alpha_9 BETA_{it} + \alpha_{10} VOL_{it} + \alpha_{11} MK_{it} + \sum a_k (IND, YEAR) + \epsilon_{it} \dots\dots\dots(1)$$

$$IC_{it} = \beta_o + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \beta_3 ROA_{it} + \beta_4 INCR_{it} + \beta_5 TRA_{it} + \beta_6 OWN_{it} + \beta_7 Big4_{it} + \beta_8 AGE_{it} + \beta_9 RET_{it} + \beta_{10} BETA_{it} + \beta_{11} VOL_{it} + \beta_{12} MK_{it} + \sum \beta_k (IND, YEAR) + \epsilon_{it} \dots\dots\dots(2)$$

Where GC is the propensity of substantial going-concern uncertainty that stand for inherent risk. SIZE is the natural log of total assets. LEV is measured as the ratio of total liabilities to end of the year total assets. LIQ is current assets divided by current liability. ROA is the net income divided by the average of total assets. INCR is the increase rate of net income. LOSS equals 1 when the company has a loss in the fiscal year, and 0 otherwise. TRA is the turnover rate of total assets. CFO is the cash flow from operating divided by the average of total assets. Big4 is 1 if auditor is a Big 4 auditors and 0 otherwise. AGE is the log of the number of years which the firm has established. RET is common stock return (minus market return). BETA is the slop coefficient of market model regression. VOL is stock return volatility. MK is 1 if the firm is listed on KOSPI market, and 0 otherwise. IND and YEAR are industry and year dummy variables.

To measure the probability variation in the audit opinion of going concern (hereafter, GC) and the report of internal control weaknesses after KIFRS mandatory adoption, we use the decomposition method of mathematical formula by 9. They estimated GC opinion probability in a year earlier and a year later for testing the change of audit report strategy after PSLRA (Private Securities Litigation Reform Act) enforcement. And they suggested the decomposition method of probability differences between before and after enforcement into differences by firms' characteristic variation and by auditors' report strategy variation.

4. Empirical Result

Table 1 shows the descriptive statistics. The mean of GC (going concern doubt opinion) and IC (internal control deficiency) is 3.3% and 1% of samples, respectively. The validity of result may be suspected because the cases of IC are very small. Before the year 2011 (the year of KIFRS mandatory adoption), the mean of GC and IC is 3.4% and 1.4% of samples, but after 2011, the mean of GC and IC is 3.3% and 0.5% of samples, respectively. Therefore GC is not changed but IC is greatly declined, after KIFRS mandatory adoption. 25.4% of samples report net loss. 56% of samples are audited by big4, and 58.3% are KOSDAQ firms. There is not given as table, on the whole, after KIFRS mandatory adoption, the firm's riskiness is improved (i.e. stock variability (VAR), growth rate (TRA) is lower, and size is higher) and the profitability grows worse (i.e. ROA is lower, and net loss builds up).

GC is the propensity of substantial going-concern uncertainty that stand for inherent risk. IC is the propensity of internal control deficiency that stands for internal control risk. MK is 1 if the firm is listed on KOSPI market, and 0 otherwise. AGE is the log of the number of years which the firm has established. RET is common stock return (minus market return). BETA is the slop coefficient of market model regression. VOL is stock return volatility. Big4 is 1 if auditor is Big 4 auditors and 0 otherwise. SIZE is the natural log of total assets. LEV is measured as the ratio of total liabilities to end of the year total assets. LIQ is current assets divided by current liability. ROA is the net income divided by the average of total assets. TRA is the turnover rate of total assets. CFO is the cash flow from operating divided by the average of total assets. INCR is the increase rate of net income. LOSS equals 1 when the company has a loss in the fiscal year and 0 otherwise.

Table 1. Descriptive statistics

N = 9,427	Mean	Std. D	Minimum	Median	Maximum
GC	0.033	0.179	0	0	1
IC	0.010	0.098	0	i0	1
Mk	0.417	0.493	0	0	1
Age	3.063	0.728	0	3.178	4.234
RET	0.118	0.493	-0.891	0.048	2.062
Beta	0.865	0.416	-0.005	0.846	1.915
Vol	56.559	23.683	16.155	52.682	159.776
Big4	0.560	0.496	0	1	1
Size	25.723	1.373	23.421	25.438	30.349
Lev	0.998	1.089	0.042	0.685	6.972
Liq	2.553	3.156	0.235	1.543	21.652
ROA	0.019	0.108	-0.439	0.032	0.251
TRA	0.953	0.569	0.040	0.860	3.210
CFO	0.044	0.091	-0.233	0.043	0.294
INCR	-0.333	4.196	-25.650	0.001	13.288
Loss	0.254	0.435	0	0	1

Table 2. Results of logistics regression

Panel A	Going Concern' Doubt Opinion			
	2007~2010 years		2011~2013 years	
	Coefficient	Wald.	Coefficient	Wald.
Size (-)	-0.347	8.50**	-0.583	18.54**
Lev (+)	0.330	28.43**	0.497	58.11**
Liq (-)	-0.239	9.42**	-0.317	7.62**
ROA (-)	-4.121	24.11**	-3.177	10.36**
Loss (+)	0.794	7.10**	1.183	12.06**
CFO (-)	-4.533	20.65**	-2.823	5.37*
Big4 (?)	-0.219	1.07	0.123	0.28
RET (-)	-0.333	4.74*	-0.178	0.91
Beta (-)	-0.648	7.67**	-0.751	8.31**
Vol (+)	0.030	61.64**	0.031	45.75**
Mk (+)	0.456	3.65	0.316	1.55
-2 Log Likelihood	868.976		716.369	
Nagelkerke R ²	0.448		0.474	

Panel B	Internal Control Deficiencies			
	2007~2010 yrs.		2011~2013 yrs.	
	Coefficient	Wald.	Coefficient	Wald.
Size (-)	-0.387	4.30*	0.504	4.86*
Lev (+)	0.287	15.11**	0.131	1.11
ROA (-)	-5.262	30.84**	-6.654	10.99**
INCR (+)	0.024	0.86	0.056	1.18
TRA (-)	-0.076	0.08	-0.165	0.11
Big4 (?)	0.650	5.23*	0.140	0.07
Age (-)	0.028	0.01	0.503	1.24
RET (-)	-0.145	0.50	-0.668	2.19

Beta (-)	-0.435	1.92	-0.369	0.47
Vol (+)	0.024	24.46**	0.024	6.19**
Mk (+)	-0.781	3.58	-1.006	2.22
-2 Log Likelihood	536.719		212.134	
Nagelkerke R ²	0.295		0.175	

1) For variables names, see the Table 1. And I leave out the variable of constant, year, industry.

2) **, *represents significance level at 1%, 5%, respectively.

Result from the logistic regression for estimating GC and IC are reported in table 2.

Panel A reports the results on the logistic regression of substantial doubt about going concern prior to and following KIFRS mandatory adoption. In two estimation model, all variables are statistically significant except Big4 and MK. RET is not significant in second estimation model (period 2011~2013 years), too. The direction of estimated coefficients is exactly the same as we expected. The lower Size, Liq, ROA, CFO, RET, Beta and higher Lev, Loss, Vol, the higher a probability of GC is.

Panel B reports the results on the logistic regression of internal control deficiency prior to and following KIFRS mandatory adoption. Only Size, ROA, Vol are statistically significant. Lev, Big4 is significant in first estimation model. The direction of estimated significant coefficients is exactly the same as we expected, too.

Results from the independent-samples T-test for verifying H1 are reported in table 3. First, we estimate each firm's GC and IC logistic regression estimation model in each period. Second, we calculate the average value of GC and IC in each period. Third, we decompose the difference of average values between two neighboring periods into differences by change of report strategy (auditor's risk perception) and by change of firms' characteristics.

The difference between period 2 and period 1 means the variation of report strategy and firm characteristic in period 2 compared to period 1.

Panel A reports the results on the probability variation of GC opinion, reporting strategy, and firm characteristics after KIFRS mandatory adoption. The probability of GC opinion decreases by 33.95% after KIFRS adoption. When this difference is decomposed into report strategy factor and firm characteristic factor, auditor reporting strategy (0.72%) is not statistically significant, but firm characteristic (-34.67%) is statistically significant. This

results imply that the decrease of GC opinion is appeared by firm characteristic variation, auditor's perception of firm risk (inherent risk) is not changed after KIFRS mandatory adoption. Therefore, we reject hypothesis H1-1.

Panel B shows the results on the probability variation of internal control weakness reporting, reporting strategy, and firm characteristics after KIFRS mandatory adoption. The probability of IC reporting decreases by 76.38% after KIFRS adoption. When this difference is decomposed into report strategy factor and firm characteristic factor, auditor reporting strategy (-57.53%) and firm characteristic (-18.85%) is all statistically significant. These results mean that the decrease of IC reporting is appeared by firms' characteristic improvement, and auditors also have perceived firms' risk (control risk) decrease after KIFRS mandatory adoption. Therefore, we reject hypothesis H1-2.

5. Conclusions

This study examines the effect of K-IFRS mandatory adoption on the audit risk components -inherent risk and control risk in Korea. Inherent risk is measured as the probability of going-concern opinion and control risk is measured as the probability of internal control deficiencies reporting.

We divide sample period into period 1(2007~2010 years) and period 2(2011~2013 years) based on KIFRS mandatory adoption (in the year 2011). We test the firm risk variation by decomposition method of probability differences between before and after KIFRS adoption into differences by firms' characteristic variation and by auditors' report strategy variation.

The overall findings suggest that the probability of going-concern opinion and internal control deficiencies reporting is decreased after KIFRS mandatory adop-

Table 3. Difference between before and after mandatory K-IFRS adoption

Panel A	Going Concern ' Doubt Opinion	
	Difference	t-value
Going concern opinion provability	-0.3395	-8.04**
Auditor reporting strategy	0.0072	0.167
Firms characteristic	-0.3467	-8.93**

Panel B	Internal Control Deficiencies Opinion	
	Difference	t-value
Internal control deficiencies report provability	-0.7638	-30.04**
Auditor reporting strategy	-0.5753	-22.77**
Firms characteristic	-0.1885	-6.91**

1) The difference is the average probability in period 2(2011~2013 years) minus the average probability in period 1(2007~2010 years).

2) **represents significance levels at 1%.

tion. The decrease of going concern opinion is appeared mainly by firm characteristic variation, auditor' perception of firm risk (inherent risk) is not changed after KIFRS mandatory adoption. And the decrease of internal control deficiencies reporting is appeared partly by firms' characteristic improvement, and auditors also have perceived firms' risk (control risk) decrease after KIFRS mandatory adoption.

These results are completely different to which we have presumed. These different results can be interpreted in several aspects. First, the propensity of going concern opinion and internal control weakness reporting may have been decreased by firms characteristic changing. From descriptive statistics, we knew that the firm' riskiness was improved (i.e. stock variability, growth rate was lower, and size was higher) and the profitability grew worse (i.e. ROA is lower, and net loss builds up) after KIFRS mandatory adoption. Second, internal control weakness may be improved gradually as time passed, because firm manager continuously modify the internal control systems weakness which be pointed out by auditor. Third, from descriptive statistics, we know that the proportion of going concern opinion is almost same in before and after KIFRS mandatory adoption, but the proportion of

internal control deficiencies reporting has been decreased as much as 1/3 after KIFRS adoption. And the validity of results may be not recognized by the reason which the ratio of GC and IC sample is very small.

This study has the following contributions and implications. First, this study provides insights into the consequences of K-IFRS adoption in Korean firms' audit risk. Second, this study considers the audit risk incorporating both inherent risk and control risk which auditors can't control based on audit risk definition of GAAS.

This study does not investigate if auditors change their efforts (audit time, audit fee, etc.) in response to the variation of audit risk after K-IFRS mandatory adoption. Additional researches on these topics need to be carried out in the near future.

6. References

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