

세무와회계저널
제13권 제1호 2012년 3월 pp.221~253
한국세무학회

The Informativeness of Consolidated Financial Statements

– From the Perspective of Value Relevance and Market Response –

Youn–Sik Choi* · Hyung–Rok Jung** · Jin–Ha Park***

〈Abstract〉

Starting in 2011, Korean companies should present IFRS-compliant financial statements. As one of the requirements, a parent company needs to issue consolidated financial statements as the primary financial statements. Since current Korean GAAP requires non-consolidated financial statements as the primary financial statements, various stakeholders in Korea are not accustomed to consolidated financial statements.

The purpose of this paper is to identify differences in the economic meaning and the informativeness between these two types of financial statements. We use financial data from 2004 to 2008 with more reliability after the post-audit review process of FSS. We find that there exist differences in key financial information between consolidated financial statements and non-consolidated financial statements. In addition, the value-relevance of both book value and earnings are not significantly different between them. Finally, we find that market additionally responds to the announcement of consolidated financial statements. Specifically, there is significant return-earnings relation for consolidated earnings even after controlling the impact of non-consolidated earnings, and the average trade volume around the announcement of consolidated earnings date is greater than that in the non-report period.

* Assistant Professor, School of Management, Management Research Institute, Kyung Hee University, yschoi@khu.ac.kr, 02-961-2345, First author

** Assistant Professor, School of Management, Management Research Institute, Kyung Hee University, jhrjhr@khu.ac.kr, 02-961-2180, Corresponding author

*** Ph.D Student, College of Business Administration, Seoul National University, parkjh04@snu.ac.kr, 02-880-8260, Co-author

This paper may provide guidelines for disentangling differences in financial information between non-consolidated and consolidated financial statements and evaluating the economic substance of a firm on the basis of consolidated financial statements. In addition, this paper may empirically support the adoption of K-IFRS by showing that consolidated financial statements are significantly utilized for investor's decision-making of short-term as well as of long-term.

<Key words> K-IFRS, Consolidated Financial Statements, Value-Relevance, ERC, Trade Volume

I. Introduction

The purpose of this paper is to examine whether investors recognize differences in the meaning of financial information provided by consolidated financial statements(hereafter, CONSOL) and by non-consolidated financial statements(hereafter, NON-CONSOL). In addition, this paper investigates whether CONSOL additionally provides useful information beyond that conveyed by NON-CONSOL or not.

Since 1997 Asian financial crisis, Korea moved to improve supervision and regulations on financial markets and to introduce more market discipline. Another step towards improving corporate accounting system was the adoption of International Financial Reporting Standards (IFRS). More than 100 countries across the globe, including those in Europe, currently require or permit IFRS reporting. In line with this movement toward a single set of high-quality global accounting standards, the Financial Supervisory Service(hereafter, FSS) disclosed the road map on March, 15, 2007.¹⁾ Korea is planned to adopt the standard, named as K-IFRS, in 2011.

It has been believed that the difference between Generally Accepted Accounting Principles of Korea(hereafter, K-GAAP) and IFRS may be one of the reasons why foreign investors do not believe financial information disclosed by Korean firms. Considering the unification of International Accounting Standards with K-GAAP, FSS expects the adoption of IFRS to be helpful to increase the transparency and credibility in financial statements of Korean firms and to overcome the "Korea discount" phenomenon.²⁾

1) To successfully adopt IFRS, FSS established a committee in 2006, which consists of the related affiliates of the government, representatives of firms, and accounting professionals, and co-prepare the road map with Korean Accounting Standards Board.

2) The "Korea Discount" is defined by Forbes Magazine as "the amount by which investors undervalue Korean stocks."

Practically, the adoption of IFRS may have different features compared with the current K-GAAP, such as principle-based standards, fair value accounting, CONSOL, de facto control, and so on. One of great changes brought by K-IFRS is that a parent company is required to issue CONSOL as the primary financial statements. CONSOL is the financial statements of a parent company and its subsidiaries as if they are one single economic entity. CONSOL is expected to present the economic substances of a parent company more effectively. While CONSOL is the primary financial statements in many advanced countries such as U.S. and U.K., K-GAAP has enforced NON-CONSOL as the primary financial statements. Only firms which meet some criteria are subject to additionally disclose CONSOL after they disclose NON-CONSOL. Therefore, it is expected that the switch of the primary financial statements from NON-CONSOL to CONSOL can provide global capital market with financial information on Korean firms more compatible with international standards. Moreover, CONSOL, prepared on the basis of the concept of economic entity, can provide global capital market with more comprehensive information on its financial status and operating performance.

However, there exists debates on CONSOL as the primary financial statements in Korea. First of all, CONSOL requires relatively sophisticated accounting knowledge about the process of consolidating. Therefore, some information users who do not have enough knowledge on it may have difficulty in interpreting the meaning of financial information provided by CONSOL. In a certain case, they may not have an appropriate economic decision-making on the basis of CONSOL. Second, a short history of CONSOL of Korea may not have provided enough credibility for CONSOL. CONSOL was introduced to Korea in July 1974 but its disclosure has been left to companies' discretion before the revision of administrative regulation of Securities and Exchange Act in April 1992 which enforced listed companies to attach CONSOL and related audit opinion to annual reports.³⁾ However, there has never been any regulatory process in order to confirm its appropriateness until the post-audit review process was firstly accomplished by FSS in 2004. Lastly, the informativeness of CONSOL is somewhat controversial. Some insist that NON-CONSOL provide the identical information as CONSOL do through the equity method and notes attached on it. They argue that NON-CONSOL which do not require relatively sophisticated accounting knowledge may be more effective and efficient than CONSOL in which complicated consolidating process is necessary. Others, however, assert that CONSOL may provide stakeholders with additional information which is not included in NON-CONSOL.

3) In December of 1993, "Law on external audit for joint stock companies" was amended and since then, the obligation of the preparation and external audit of CONSOL have been expanded to the companies whose total assets are over ₩7 billion.

Despite of these debates, there is no avoiding the adoption of K-IFRS. It means that stakeholders should make their economic decisions on the basis of CONSOL. Therefore, it is very timely to investigate whether there is any difference in key financial information between CONSOL and NON-CONSOL and whether CONSOL additionally provide useful information beyond that provided by NON-CONSOL. Moreover, it is quite important to examine whether stakeholders properly recognize and differently respond to the economic meaning of financial information conveyed by CONSOL in order to prevent potential confusion after the implementation of K-IFRS. However, prior literature does not tackle these issues comprehensively but touch them individually. In addition, most prior literature accomplishes empirical tests using relatively less credible financial data that any official verifying procedure has not been carried out by FSS. These may lead mixed empirical results and a limitation for interpreting them.⁴⁾

Using financial statements data from 2004 to 2008, we provide the following results. First, in terms of the difference in key financial information(hereafter, KFI), we find that most KFIs for stability, profitability and valuation, based on CONSOL, significantly deteriorate, but most KFIs for growth and activity, based on CONSOL, significantly improve compared to KFIs based on NON-CONSOL. Second, with regards to value-relevance tests using the price model and the return model, we find that both book value and earnings are significantly value-relevant under NON-CONSOL as well as under CONSOL. However, there is no significant difference between them. Next, in ERC test, we find significant return-earnings relation for consolidated earnings. Finally, with regards to trading activities of investors in the capital market, we find that the average trade volume around the announcement date of CONSOL is greater than that in the non-report period.

The empirical results may document what is going to happen after the adoption of K-IFRS from a perspective of CONSOL. KFIs of Korean firms may deteriorate or improve due to the change of the primary financial statements even though there is no any change in their economic substances. In addition, the results imply that, from a perspective of long-term, the ability of financial information to predict a firm's value may not change, but, from a perspective of short-term, investors may enjoy more benefits by using CONSOL. In sum, CONSOL additionally provides useful information to the market.

This study contributes the literature in several ways. First, it will be helpful to various stakeholders to understand the characteristics of CONSOL and to make their economic decision by providing guidelines for disentangling the differences in the financial information between

4) Prior literature shows mixed and limited evidences on several issues regrading CONSOL such as the value relevance, invoking the needs of further study. We discuss about them in more detail in section 2.

NON-CONSOL and CONSOL and evaluating the economic substance of a firm on the basis of CONSOL. Second, this paper may empirically support the adoption of K-IFRS by showing that CONSOL is significantly utilized for investor's decision-making of short-term as well as of long-term.

The remainder of this paper is organized as follows. Section 2 discusses related prior literature. Section 3 reports our sample and the results of key financial information analysis. Section 4 describes our research design. Section 5 presents our empirical results. Finally, we summarize our findings and offer some concluding remarks in Section 6.

II. Literature Review and Hypothesis Development

Literature on the informativeness of CONSOL in Korea can be differentiated based on the change in regulation and accounting environment. The three main changes are the reporting and auditing obligations of CONSOL in April 1992, application of equity method in 1999, the post-audit review process in 2004.

At an early stage, researchers have focused on comparing the financial ratio between CONSOL and NON-CONSOL(Ko, 1985 ; Jung and Kim, 1991 ; Kim, 1995 ; Jung, 1996). Using different samples and methods, they find consistent evidences that the major financial ratios of CONSOL are significantly different from those of NON-CONSOL. Specifically, business conditions looks relatively unfavorable in CONSOL. This finding indicates that financial market would be influenced by CONSOL because financial ratio consisting of liquidity ratio, leverage ratio, and profitability ratio is a speedy approach to check the standing of a company and market participants use it in their valuation and investment. Recent study of Shin(2008) shows that the difference between CONSOL and NON-CONSOL still exists even after there have been many changes to regulations in the last few years. Some papers in early 1990s directly investigate the informativeness of CONSOL using return data and find that CONSOL has an incremental information contents over NON-CONSOL(Kim and Nam, 1994 ; Jung and Kim, 1994). In sum, these studies show that the information contents of CONSOL and NON-CONSOL are different and each provide incremental information contents over another in capital market. However, despite the above findings, criticism has existed about the value-relevance of CONSOL at this early stage because CONSOL was not audited before 1992 and thereby it was considered not reliable.

Therefore, when Securities and Exchange Act enforced listed companies to attach CONSOL and related audit opinion to annual reports in April 1992, a series of research which investigate whether CONSOL adds information contents to NON-CONSOL or not using this audited data surge up(Chun, 1994 ; Lee, 1995 ; Hwang, 1995 ; Park, 1995 ; Kim, 2000 ; Kim et al., 2001). They consistently find that CONSOL have incremental informativeness beyond NON-CONSOL and conclude that CONSOL is useful to the market.

Next, another change regarding CONSOL is the application of equity method in 1999. While prior literature provides the evidence that CONSOL is value-relevant under cost method, it is questionable whether this will sustain under equity method because the net income of CONSOL equals to that of NON-CONSOL under equity method. A series of studies investigated this issue, and results are mixed. Shin and Lee(2002) test whether the average cumulative abnormal return(and stock trade volume) is different between the test period which is the dead line of the introduction of the CONSOL and the control period. They also test whether the difference between consolidated earnings and non-consolidated earnings affects the stock price measured by cumulative abnormal return. Their results show that the average cumulative abnormal return(and stock trade volume) is not different during the test period, and the consolidated earnings and sales also do not significantly affect the stock price. Consistent with this study, Park(2002) finds that consolidated earnings is value-relevant under cost method, but the effect disappears under equity methods. Other financial information was not value-relevant in any method. On the other hand, Kim and Na(2002) use different approach. Based on the argument that consolidated earnings are not useful under equity method, they focus on whether other information such as consolidated sales, expenses and cash flows is value-relevant. More recently, Shin(2008) analyzes this issue using Ohlson model(1995). Comparing the R-squares of the model obtained from CONSOL and NON-CONSOL, he finds that CONSOL has lower explanatory power indicating that the value-relevance of CONSOL is significantly lower than that of NON-CONSOL. While he expects that the value-relevance of CONSOL and NON-CONSOL should be the same under equity method, he attributes this opposite result to the time lag between the disclosure day of NON-CONSOL and that of CONSOL. Oh et al.(2010) compare the value-relevance of accounting information under K-IFRS and that of under K-GAAP using a sample of 47 firms adopting K-IFRS earlier than others from the first quarter of 2009 to the second quarter of 2010.

This paper has several differences from prior studies. First, we re-visit three issues in CONSOL which are separately investigated in prior studies(i.e. the change in KFIs, the value-relevance, and the market reaction). This paper comprehensively examines those issues especially using more reliable financial data which ranges from 2004 to 2008. No great attention had been

paid to CONSOL before 1997 Asian financial crisis. In addition, the first post-audit review process on CONSOL was done by FSS in 2004. These may present a question on the appropriateness and the reliability of CONSOL investigated by prior studies and lead a limitation for interpreting their empirical results. Shin(2008) investigates CONSOL using data from 2001 to 2006. It means that he includes a part of sample after the first post-audit review process on CONSOL was done. It, however, is limited to the value-relevance test based on Ohlson model(1995). Second, we focus on comparing NON-CONSOL and CONSOL. The adoption of K-IFRS may bring widespread effects to a firm's financial information due to its specific features compared to K-GAAP. From a perspective of change in the primary financial statements, the effects of fair value accounting, consolidating process, change in consolidating scope, and so on are muddled up together in CONSOL based on K-IFRS. Therefore, comparing NON-CONSOL and CONSOL using financial information based on K-IFRS cannot disentangle the effect of consolidating process itself from other effects of change in the primary financial statements. In this context, this paper is different from Oh et al.(2010).⁵⁾

The primary purpose of this study is to examine the economic difference in financial information between NON-CONSOL and CONSOL. Especially regarding the additional informativeness of CONSOL, prior literature does not agree with each other. Thus, we posit the null hypothesis as follows.

H1 : There is no difference in value-relevance and market response between NON-CONSOL and CONSOL.

III. Data and Summary Statistics

1. Data

From 2004, FSS performs the post-audit review process on CONSOL and related audit opinion. To guarantee the appropriateness and reliability of the financial data, we restrict sample to the firms listed on Korea Exchange(KRX) at each year from 2004 to 2008. In addition, because we investigate the informativeness of CONSOL compared to NON-CONSOL, a firm is included in the sample only when it discloses both of them in the same year. Thus, there are the

5) In addition, Oh et al.(2010) may have limitation for generalizing the results, because sample size is too small. For more rigorous results, sample needs to be accumulated over time.

same numbers of these two financial statements in our sample. Financial data is collected from KIS-VALUE II. Information on stock price, return, and volume data is obtained from FnGuide. Others are collected from DART. Consistent with prior studies, we exclude firms in the financial industry.

<Table 1> shows sample size. During the period from 2004 to 2008, total firm-year observations listed on KRX are 3,162. Among them, 1,475(46.6%) disclose only NON-CONSOL, and 1,687(53.4%) disclose both NON-CONSOL and CONSOL in the same year. Therefore, our sample consists of 3,374 firm-year observations(=1,687 of NON-CONSOL+1,687 of CONSOL).

<Table 1> Sample size

Year	Total	NON-CONSOL only	NON-CONSOL and CONSOL
2004	618	319(51.6%)	299(48.4%)
2005	616	294(47.7%)	322(53.2%)
2006	632	296(46.8%)	336(53.2%)
2007	639	287(44.9%)	352(55.1%)
2008	657	279(42.5%)	378(57.5%)
Total	3,162	1,475(46.6%)	1,687(53.4%)

- 1) Table 1 reports the distribution of the sample by year. “Total” consists of 3,162 firm-year observations that are listed on the KRX for period 2004–2008. Firms in the financial are excluded. “NON-CONSOL” category consists of firms that disclose only NON-CONSOL. “NON-CONSOL and CONSOL” category consists of firms that disclose both NON-CONSOL and CONSOL in the same year. In the later analysis, only firms that disclose both NON-CONSOL and CONSOL are used.

2. Differences in Key Financial Information between CONSOL and NON-CONSOL

For the first step, we investigate the difference in key financial information(KFI) between CONSOL and NON-CONSOL. KFI is usually used by capital market participants when they make decisions, and early studies(Ko, 1985 ; Jung and Kim, 1991 ; Kim, 1995 ; Jung, 1996) provide evidences that the major financial ratios of CONSOL are significantly different from those of NON-CONSOL and financial market would be influenced by CONSOL. Therefore, examining the difference in KFI between CONSOL and NON-CONSOL is expected to provide simple but valuable insights to the market.

〈Table 2〉 KFI and its definition

Information	Formulation
Panel A : Major Information of Financial Statements	
Total Assets	From financial statements
Total Liabilities	From financial statements
Sales	From financial statements
Operating Income	From financial statements
Net income	From financial statements
Operating Cash flows	From financial statements
Investment Cash flows	From financial statements
Financing Cash flows	From financial statements
Free Cash flows	net interest expenses + change in financial assets - change in financial liabilities + net dividends (net income - change in shareholders' equity)
Working Capital	current assets - current liabilities
EBITDA	net income + net interest expenses + tax expenses + depreciation + amortization
Panel B : KFIs for Stability	
Current ratio	current asset ÷ current liabilities
Leverage	total liabilities ÷ total equity
Ratio of borrowings to assets	borrowings ÷ total assets
Ratio of operating income to interest expenses	operating income ÷ interest expenses
Panel C : KFIs for Profitability	
Ratio of operating income to sales	operating income ÷ total sales
Return on sales	net income ÷ total sales
Return on assets	net income ÷ total assets
Return on equity	net income ÷ total equity
Ratio of OCF to Assets	operating cash flows ÷ total assets
Panel D : KFIs for Growth and Activity	
Growth in sales	current year's total sales ÷ previous year's total sales
Growth in operating income	current year's operating income ÷ previous year's operating income
Growth in net income	current year's net income ÷ previous year's net income
Growth in assets	current year's total assets ÷ previous year's total assets
Asset turnover	total sales ÷ average total assets
Panel E : KFIs for Valuation	
EPS	net income ÷ number of shares
PER	common stock price ÷ EPS
PBR	total market value of common stock ÷ net assets
PSR	total market value of common stock ÷ total sales
PCR	total market value of common stock ÷ operating cash flows
Ratio of enterprise value to sales	(total market value of common stock + net financial liabilities) ÷ total sales
Ratio of enterprise value to EBITDA	(total market value of common stock + net financial liabilities) ÷ EBITDA

<Table 2> shows the KFI and its formulation. In Panel A, we investigate major information that financial statements deliver. We do not scale these variables in order to provide economic meanings directly. From Panel B to Panel D, we include KFI which is enforced to be disclosed in the notes by law on external audit for joint stock companies. There are several KFIs for valuation purpose in Panel E. In <Table 3>, we calculate the mean values of these key variables from both NON-CONSOL and CONSOL, and test their differences statistically by t-test and Wilcoxon-Mann-Whitney z test.

Panel A of <Table 3> reports major information that financial statements provide. Overall, the mean and median values of major information in CONSOL are much greater than those in NON-CONSOL. For example, as for balance sheet items, Total Assets in NON-CONSOL is, on average, ₩1,926,235 million and ₩2,989,748 million in CONSOL on average. Total Liabilities in NON-CONSOL is, on average, ₩943,854 million and ₩1,792,146 million in CONSOL. Total Assets and Total Liabilities of CONSOL are greater than those of NON-CONSOL by ₩1,063,513 million and ₩848,292 million, respectively. These differences mean that CONSOL is nearly twice of NON-CONSOL in numbers. As for income statements items, Sales in NON-CONSOL is, on average, ₩1,763,972 million and ₩2,670,048 million in CONSOL. Operating Income in NON-CONSOL is, on average, ₩123,700 million and ₩179,655 million in CONSOL. Sales and Operating Income of CONSOL are greater than those of NON-CONSOL by ₩906,076 million and ₩55,955 million, respectively. As for cash flows statements items, Operating Cash flow in NON-CONSOL is, on average, ₩158,295 million and ₩236,556 million in CONSOL. Financing Cash flow in NON-CONSOL is, on average, ₩2,645 million and ₩46,446 million in CONSOL. Operating Cash flow and Financing Cash flow of CONSOL are greater than those of NON-CONSOL by ₩78,261 million and ₩43,801 million, respectively. However, Investment Cash flow and Free Cash flow of CONSOL are smaller than those of NON-CONSOL by ₩108,931 million and ₩75,115 million, respectively. Working Capital in NON-CONSOL is, on average, ₩53,764 million and ₩81,318 million in CONSOL. EBITDA in NON-CONSOL is, on average, ₩226,292 million and ₩314,272 million in CONSOL. Working Capital and EBITDA of CONSOL are greater than those of NON-CONSOL by ₩27,554 million and ₩87,980 million, respectively. All these differences are statistically significant at the 1% level except for Net Income. The insignificant result for Net Income confirms that net income of NON-CONSOL and CONSOL are the same under equity method because the firm's share of the profit or loss of the investee is recognized in the investor's profit or loss and other changes in the investee's equity are recognized directly in equity of the firm.⁶⁾

Panel B of <Table 3> reports KFI that represents the firm's stability. Current ratio of NON-CONSOL is 184.1%, but it decrease to 159.8% in CONSOL. Opposite to this, 116.9% of Leverage in NON-CONSOL increase to 164.2% in CONSOL. Ratio of borrowings to assets and Ratio of operating income to interest expenses of CONSOL are greater than those of NON-CONSOL. Overall, the differences are statistically significant at the 1% level indicating that stability becomes poorer under CONSOL.

Panel C of <Table 3> reports KFI that represents the firm's profitability. Ratio of operating income to sales of NON-CONSOL is 5.8%, but it decrease to 4.8% in CONSOL. 5.2% of ROS in NON-CONSOL decreases to 2.3% in CONSOL. ROA and ROE also decrease from 3.3% and 5.2% in NON-CONSOL to 2.5% and 4.2% in CONSOL, respectively. Overall, differences in this KFI are statistically significant at the 1% level suggesting that profitability deteriorates under CONSOL. As an exception, Ratio of OCF to Assets increases from 4.9% in NON-CONSOL to 5.3% in CONSOL. However, this difference is not significant.

Panel D of <Table 3> reports KFI that indicates the firm's growth and operation activity. Growth in sales of NON-CONSOL is 10.5%, and it increase to 13.9% in CONSOL. Growth in operating income also increases in CONSOL. 9.8% of Growth in assets in NON-CONSOL increase to 12.1% in CONSOL. Asset turnover of NON-CONSOL is 1.7%, but it increases to 9.7% in CONSOL. Overall, differences in these KFIs are statistically significant at the 1% level suggesting that growth and activity improve when it is calculated based on CONSOL. However, Growth in net income is not significantly different between NON-CONSOL and CONSOL. This is consistent with Net income not being statistically different in Panel A of <Table 3> because of the effect of equity method.

Finally, Panel E of <Table 3> reports KFI that is usually used for valuation purpose. PBR of NON-CONSOL is 0.514, but it decreases to 0.477 in CONSOL. PSR and PCR also decrease from 0.825 and 3.440 in NON-CONSOL to 0.488 and 2.217 in CONSOL, respectively. Ratio of enterprise value to sales also decreases from 0.613 in NON-CONSOL to 0.422 in CONSOL. Overall, above differences in valuation are statistically significant at the 1% level indicating that valuation get worse when it is calculated based on CONSOL. Interestingly, KFI related to net income such as EPS, PER, and Ratio of enterprise value to EBITDA, are not statistically different between NON-CONSOL and CONSOL. This is because of the effect of equity method and results are consistent with Panel A and Panel D of <Table 3>.

6) We find significant difference in Operating Income between CONSOL and NON-CONSOL. It is because the equity method is reflected on other income(expense) below operating income.

〈Table 3〉 Univariate Test

Information	NON-CONSOL (n=1,687)		CONSOL (n=1,687)		Test of Differences		
	Mean	Median	Mean	Median	Difference	t-statistic	z-statistic
Panel A : Major Information of Financial Statements							
<i>Total Assets</i>	1,926,235	357,621	2,989,748	493,350	1,063,513	4.81 (<0.0001)	5.39 (<0.0001)
<i>Total Liabilities</i>	943,854	136,518	1,792,146	235,643	848,292	6.81 (<0.0001)	8.39 (<0.0001)
<i>Sales</i>	1,763,972	311,927	2,670,048	481,335	906,076	4.76 (<0.0001)	7.61 (<0.0001)
<i>Operating Income</i>	123,700	15,487	179,655	22,958	55,955	3.65 (0.0003)	4.18 (<0.0001)
<i>Net income</i>	98,217	12,611	96,908	12,051	-1,309	-0.13 (0.8933)	-0.50 (0.6162)
<i>Operating Cash flow</i>	158,295	12,788	236,556	19,846	78,261	3.30 (0.0010)	3.83 (<0.0001)
<i>Investment Cash flow</i>	-154,387	-14,291	-263,318	-23,418	-108,931	-4.69 (<0.0001)	-5.61 (<0.0001)
<i>Financing Cash flow</i>	2,645	-1,335	46,446	793	43,801	4.16 (<0.0001)	3.66 (0.0003)
<i>Free Cash flow</i>	-16,024	156	-91,139	-3,595	-75,115	-4.43 (<0.0001)	-4.34 (<0.0001)
<i>Working Capital</i>	53,764	25,806	81,318	37,799	27,554	1.48 (0.1392)	3.77 (0.0002)
<i>EBITDA</i>	226,292	29,790	314,272	43,661	87,980	3.07 (0.0021)	5.32 (<0.0001)
KFI	NON-CONSOL (n=1,687)		CONSOL (n=1,687)		Test of Differences		
	Mean	Median	Mean	Median	Difference	t-statistic	z-statistic
Panel B : KFIs for Stability							
<i>Current ratio</i>	1.841	1.330	1.598	1.272	-0.243	-4.53 (<0.0001)	-1.38 (0.1687)
<i>Leverage</i>	1.169	0.858	1.642	1.170	0.473	9.71 (<0.0001)	11.05 (<0.0001)
<i>Ratio of borrowings to assets</i>	0.221	0.207	0.262	0.260	0.040	7.06 (<0.0001)	7.52 (<0.0001)
<i>Ratio of operating income to interest expenses</i>	66.070	3.192	33.688	3.226	-32.382	-3.41 (0.0007)	-0.86 (0.3920)

〈Table 3〉 Univariate Test (Continued)

KFI	NON-CONSOL (n=1,687)		CONSOL (n=1,687)		Test of Differences		
	Mean	Median	Mean	Median	Difference	t-statistic	z-statistic
Panel C : KFIs for Profitability							
<i>Ratio of operating income to sales</i>	0.058	0.049	0.048	0.049	-0.010	-3.08 (0.0021)	-0.79 (0.4264)
<i>Return on sales(ROS)</i>	0.052	0.041	0.023	0.027	-0.029	-6.31 (<0.0001)	-7.89 (<0.0001)
<i>Return on assets(ROA)</i>	0.033	0.039	0.025	0.028	-0.008	-3.28 (0.0011)	-6.49 (<0.0001)
<i>Return on equity(ROE)</i>	0.052	0.074	0.042	0.063	-0.010	-1.49 (0.1368)	-3.49 (0.0005)
<i>Ratio of OCF to Assets</i>	0.049	0.046	0.053	0.050	0.004	1.28 (0.2015)	1.64 (0.0902)
Panel D : KFIs for Growth and Operation Activity							
<i>Growth in sales</i>	1.105	1.075	1.139	1.097	0.034	3.40 (0.0007)	3.85 (<0.0001)
<i>Growth in operating income</i>	0.882	0.988	1.062	1.020	0.180	2.37 (0.0178)	1.47 (0.1424)
<i>Growth in net income</i>	0.768	0.936	0.778	0.918	0.011	0.10 (0.9234)	0.51 (0.6103)
<i>Growth in Assets</i>	1.098	1.069	1.121	1.081	0.023	3.05 (0.0023)	2.62 (0.0089)
<i>Asset turnover</i>	1.017	0.931	1.097	1.002	0.080	4.24 (<0.0001)	5.51 (<0.0001)
Panel E : KFIs for Valuation							
<i>EPS</i>	3,368	1,127	3,341	1,130	-27	-0.10 (0.9197)	-0.18 (0.8575)
<i>PER</i>	7.128	3.195	6.218	2.976	-0.910	-1.12 (0.2633)	-1.33 (0.1820)
<i>PBR</i>	0.514	0.331	0.477	0.296	-0.037	-1.92 (0.0546)	-3.95 (<0.0001)
<i>PSR</i>	0.825	0.221	0.488	0.146	-0.337	-5.18 (<0.0001)	-8.84 (<0.0001)
<i>PCR</i>	3.440	2.162	2.217	1.624	-1.223	-1.88 (0.0606)	-4.13 (<0.0001)
<i>Ratio of enterprise value to sales</i>	0.613	0.373	0.422	0.336	-0.191	-7.15 (<0.0001)	-3.99 (<0.0001)
<i>Ratio of enterprise value to EBITDA</i>	4.087	3.232	3.638	3.401	-0.448	-1.36 (0.1734)	-0.41 (0.6784)

- 1) Table 3 reports the difference in key financial information between NON-CONSOL and CONSOL. Difference is calculated by subtracting the mean value of CONSOL from the mean value of NON-CONSOL. All variables are defined in Table 2. The extreme values of each variables are truncated at the 1 and 99 percentiles. In Panel A, the unit of major information is millions of Korean won. In Panel E, the unit of EPS is Korean won. t-value and z-value are statistics from t-test and Wilcoxon-Mann-Whitney test, respectively. p-values are in parentheses.

IV. Research Design

1. Value-Relevance of Accounting Information

A. Relative value-relevance test

In this part, we compare the value-relevance of summary accounting information measured alternatively under NON-CONSOL and CONSOL. Prior researchers have used either the price model or the return model for examining the value-relevance of accounting information. Kothari and Zimmerman(1995) find that while the price model is economically better specified, the return model have less severe White(1980)'s specification problems, and suggest that "using both models could permit more definitive inferences". Therefore, we use both the price and the return model. In the price model, book value and earnings are used as a key accounting information which reflects the value of a firm's equity. Alternatively, the return model use only earnings.

We compare the relative value-relevance of accounting information alternatively measured under NON-CONSOL and CONSOL. Relative value-relevance tests may be appropriate because "improving value-relevance" is one of the most important rationales for the adoption of the K-IFRS. Shin(2008) also tests the relative value-relevance of NON-CONSOL and CONSOL using the price model.

The price model we estimate is based on Ohlson(1995), wherein the value of a firm's equity is expressed as a function of its earnings and book value. Specifically, we estimate following regression from panel data of each NON-CONSOL and CONSOL, covering four-year period 2005-2008.

$$P_{i,t} = \alpha_0 + \beta_1 EARN_{i,t} + \beta_2 BV_{i,t} + \epsilon_{i,t} \quad (1)$$

In equation (1), P is price per share of firm i at the end of fiscal year t. EARN is earnings per share of firm i during year t. BV is book value per share of firm i during year t. Value-

relevance is measured by adjusted R^2 of the model. We run equation (1) separately for NON-CONSOL and CONSOL sample, then compare adjusted R^2 across them on the basis of Vuong's Z-statistics (Vuong, 1989).⁷⁾ Literature argues that the price model is subject to heteroskedasticity. We address this concern using White (1980)'s heteroskedasticity-consistent standard errors. In order to control the effect of the influential observations, we eliminate the influential data using Cook's D with conventional cut-off point $4/n$ where n is the number of observations. For the comparability between two alternative models (NON-CONSOL versus CONSOL), we maintain identical firm-year observations through the test after the elimination of the influential data from each NON-CONSOL and CONSOL sample.

The return model follows Easton and Harris (1991), wherein we regress market-adjusted returns on the level of earnings and the change in earnings.⁸⁾ Specifically, we estimate following regressions from panel data of each NON-CONSOL and CONSOL, covering four-year period 2005–2008.

$$R_{i,t} = \alpha_0 + \beta_1 EARN_{i,t} + \beta_2 \Delta EARN_{i,t} + \epsilon_{i,t} \quad (2)$$

In equation (2), R is the cumulative market-adjusted return for firm i over the 12-month period of the fiscal year. $EARN$ is earnings per share of firm i during year t , scaled by beginning-of-year stock price. $\Delta EARN$ is change in earnings per share of firm i during year t , scaled by beginning-of-year stock price. Value-relevance is measured by adjusted R^2 of the model. Comparison of the value-relevance of NON-CONSOL and CONSOL and treatment for influential observations are same with the price model except that equation (2) is estimated using ordinary least square.

7) Vuong's Z is the likelihood ratio test developed by Vuong (1989) for nonnested model selection. When comparing measure 1 and measure 2, a significant positive Z-statistic indicates that measure 2 is rejected in favor of measure 1. For more detail on the test developed by Vuong (1989), see Appendix 2 of Dechow (1994).

8) While the frequently used return model expresses price as a multiple of earnings and investigates the relation between market-adjusted returns and change in earnings, Easton and Harris (1991) find the potential relevance of the level of current earnings. They find that both change in earnings and the level of earnings are each associated with returns in univariate regression. In multiple cross-sectional regression for annual returns on both the levels and the changes variables from 1968 to 1986, the coefficient on earning level is statistically significant in all years, while the coefficient on earnings changes is significant in less than half the years. They suggest considering the relevance of the earnings levels for improvement of the associations between accounting earnings and returns. See Easton and Harris (1991), for the comparison of alternative price and return model.

B. Incremental value—relevance test

We also perform incremental value—relevance tests. Relative comparisons are used to evaluate which accounting measure has greater information content, and applied for comparing alternative models. On the other hand, incremental comparisons are used to evaluate whether one accounting measure provides information content beyond that provided by another, and applied when one measure is considered as given and the incremental contribution of another is questioned.⁹⁾

[Price model]

$$P_{i,t} = \alpha_0 + \beta_1 BV_NCON_{i,t} + \beta_2 BV_DIFF_{i,t} + \beta_3 EARN_NCON_{i,t} + \beta_4 EARN_DIFF_{i,t} + \epsilon_{i,t} \quad (3)$$

In equation (3), P is price per share of firm i at the end of fiscal year t . BV_NCON is book value per share of firm i during year t under NON—CONSOL. BV_DIFF is book value per share of firm i during year t under NON—CONSOL minus book value per share of firm i during year t under CONSOL. $EARN_NCON$ is earnings per share of firm i during year t under NON—CONSOL. $EARN_DIFF$ is earnings per share of firm i during year t under NON—CONSOL minus earnings per share of firm i during year t under CONSOL. We estimate equation (3) using White(1980)'s heteroskedasticity—consistent standard errors. If CONSOL is incrementally value—relevant, coefficients on BV_DIFF and $EARN_DIFF$ will be significant in either positive or negative way.

Next, the return model for incremental value—relevance test is as follows.

[Return model]

$$R_{i,t} = \alpha_0 + \beta_1 EARN_NCON_{i,t} + \beta_2 EARN_DIFF_{i,t} + \beta_3 \Delta EARN_NCON_{i,t} + \beta_4 \Delta EARN_DIFF_{i,t} + \epsilon_{i,t} \quad (4)$$

In equation (4), R is the cumulative market—adjusted return for firm i over the 12—month period of the fiscal year. $EARN_NCON$ is earnings per share of firm i during year t , scaled by beginning—of—year stock price under NON—CONSOL. $EARN_DIFF$ is earnings per share of firm i during year t , scaled by beginning—of—year stock price under NON—CONSOL minus earnings per share of firm i during year t , scaled by beginning—of—year stock price under CONSOL. $\Delta EARN_NCON$ is change in earnings per share of firm i during year t , scaled by beginning—of—year stock price under NON—CONSOL. $\Delta EARN_DIFF$ is change in earnings per

9) See Biddle et al.(1995), for the more detailed explanations regarding relative versus incremental information content.

share of firm i during year t , scaled by beginning-of-year stock price under NON-CONSOL minus change in earnings per share of firm i during year t , scaled by beginning-of-year stock price under CONSOL. Equation (4) is estimated using ordinary least square. If CONSOL is incrementally value-relevant, coefficients on $EARN_DIFF$ and $\Delta EARN_DIFF$ will be significant in either positive or negative way.

C. Earnings Response Coefficient (ERC)

While significant result from the value-relevance test indicates that CONSOL is value relevant to stock market participants, it provides no evidence whether the announcement of consolidated earnings provide new information to the stock market or not. In order to provide insight on this issue, we investigate the information contents of CONSOL by examining the stock market response to the announcement of consolidated earnings. Following the typical prior literature, we analyze the information contents of consolidated earnings using earnings response coefficient (hereafter, ERC).¹⁰ If consolidated earnings convey new(useful) information to investors, significant return-earnings relation will be observed. We estimate the following cross-sectional regressions of cumulative abnormal returns(CAR) around the announcement of consolidated earnings using panel data of CONSOL, covering four-year period 2005–2008.

$$CAR3_{i,t} = \alpha_0 + \beta_1 UE(DIFF)_{i,t} + \beta_2 UE(NONCONSOL)_{i,t} + \beta_3 UE(DIFF) \times SIZE_{i,t} + \epsilon_{i,t} \quad (5)$$

In equation (5), $CAR3$ is a measure of market-adjusted return for firm i cumulated over 3 trading-day period beginning one day prior to the announcement of consolidated earnings, CAR ($-1, 1$). Market-adjusted return is calculated by the difference between the return of firm i and the return of a equal-weighted market index. We identify the event day (day 0) as the earnings announcement date. Unexpected consolidated earnings, $UE(DIFF)$, is measured as the difference between non-consolidated and consolidated earnings per share for firm i in year t scaled by the fiscal year end stock price for year $t-1$.

10) In general, the return-earnings relation is investigated using either an event study or an association study method. In the event study, returns over a short window surrounding the earnings announcement date are regressed on unexpected earnings. This reveals whether investors revise their expectations about future cash flow around the earnings announcement. In the association study, returns over relatively long period(e.g., one quarter, one year, etc.) are regressed on unexpected earnings. The focus of the association study is on whether the earnings, as aggregated over longer periods of time, capture more information about changes in firm value. More details each method are well summarized in Collins and Kothari(1989). We use event study in the ERC test to capture the short-term response of investors.

Some prior studies in Korea suggest controlling for the confounding effect which is raised from the non-consolidated earnings because the announcement of consolidated earnings occur later(Hwang, 1995 ; Shin and Lee, 2002). In order to incorporate this argument, we include unexpected non-consolidated earnings, $UE(NONCONSOL)$, as a control variable. $UE(NONCONSOL)$ is measured as an annual difference in the non-consolidated earnings per share in year t following random-walk. In addition, prior research show that price reaction(Atiase, 1985) and trading volume(Bamber, 1986) to earnings announcements are disproportionately larger for smaller firms. Following these prior literatures, we include a size measure(SIZE) to control for this 'size effect'. $SIZE$ is measured as a natural log of market value of common equity at the beginning of the year.

As an alternative measure of unexpected consolidated earnings, we also use $UE(CONSOL)$, an annual difference in the consolidated earnings per share in year t following random-walk, as equation (6). $UE(CONSOL)$ is scaled by the fiscal year end stock price for year $t-1$.

$$CAR3_{i,t} = \alpha_0 + \beta_1 UE(CONSOL)_{i,t} + \beta_2 UE(NONCONSOL)_{i,t} + \beta_3 UE(CONSOL) \times SIZE_{i,t} + \epsilon_{i,t} \quad (6)$$

D. Earnings Announcement and Trading Activity

As an alternative way of examining the informativeness of consolidated earnings, we graphically examine the trade volume during the event-window surrounding the earnings announcement. If the consolidated earnings do matter to investors(that is, investors revise their expectations about future cash flows around the earnings announcement), the trade volume will increase around the earnings announcement. While the incidence(frequency) of bond trade can be used alternatively, we use trade volume for the comparability with the extent literature in Korea(Hwang, 1995 ; Shin and Lee 2002).¹¹⁾ Following Beaver(1968), we test this hypothesis based on the following equation :

$$V_{i,t} = \frac{VOL_{i,t}}{NUM_{i,t}} \quad (7)$$

11) Easton et al.(2009) focus on the incidence(frequency) of bond trade instead of trade volume because the volume data that are available includes significant measurement error. When they perform a robustness test using trade volume with some adjustment in the problem of the volume data, the results provide inferences similar to that from the analysis of the incidence of trade.

Beaver(1968) computes the average trade volume in the report period and compares it with that in the non-report period. Using the average trade volume in the non-report as a benchmark, we can test whether there is a greater(or less) trade activity surrounding the consolidated earnings announcement. In equation (7) VOL is the number of shares of firm i traded on day t . NUM is the number of shares outstanding for firm i on day t . Trade volume on day t is divided by the number of shares outstanding so that the results would not be dominated by those firms with the largest number of shares outstanding. In our test, report period is defined as the 41 days surrounding the announcement date beginning 20 days prior to the announcement of consolidated earnings, and the non-report period is defined as 200~60 days before the announcement date.

V. Empirical Results

1. Value-Relevance of Accounting Information

A. Relative value-relevance test

<Table 4> reports the result of the relative value-relevance test using the price model. Both book value and earnings are significantly value-relevant under NON-CONSOL as well as under CONSOL.

<Table 4> Relative value-relevance test using price model

	<i>Intercept</i>	<i>BV</i>	<i>EARN</i>	N	Adj. R^2
NON-CONSOL	3,336.33 *** (4.19)	0.50 *** (15.98)	3.78 *** (13.97)	1,524	0.64
CONSOL	3,872.72 *** (4.59)	0.40 *** (13.73)	3.93 *** (13.61)	1,524	0.63

Vuong Test : NON-CONSOL vs CONSOL

: Vuong's Z-statistic=0.02(two-tail p-value=0.98)

- 1) Table 4 reports relative value-relevance test using price model. The price model is estimated using White's(1980) heteroskedasticity-corrected standard error. The dependent variable is P , price per share of firm i at the end of fiscal year t . $EARN$ is earnings per share of firm i during year t . BV is book value per share of firm i during year t . The extreme values of each variables are truncated at the 1 and 99 percentiles. In addition, the influential data is eliminated using Cook's D with conventional cut-off point $4/n$ where n is the number of observations. The robust t-statistics are in parentheses.
- 2) *, **, *** indicated significance at the 10%, 5%, and 1% level, respectively(two-tailed test). The tests in adjusted R^2 are based on Vuong tests(Vuong, 1989).

Adjusted R^2 , the measure of value-relevance, is 1% higher in the model using NON-CONSOL than in the model using CONSOL reporting 64% and 63% respectively. However, Vuong's Z-statistic($z=0.02$) comparing NON-CONSOL to CONSOL is not significant. This is consistent with book value and earnings under NON-CONSOL not explaining significantly more of the variation in stock price than that of CONSOL. This suggests that there is no significant difference in value-relevance between NON-CONSOL and CONSOL.

<Table 5> shows the result from the return model. While level of earnings is significantly value-relevant under both NON-CONSOL and CONSOL, change in earnings is not significant.¹²⁾ Adjusted- R^2 , the measure of value-relevance, is same in the model using NON-CONSOL and using CONSOL reporting around 3%. Vuong's Z-statistic($z=0.02$) comparing NON-CONSOL to CONSOL is not significant.

<Table 5> Relative value-relevance test using return model

	<i>Intercept</i>	<i>EARN</i>	$\Delta EARN$	N	Adj. R^2
NON-CONSOL	0.05 *** (3.79)	0.16 *** (4.26)	0.04 (0.91)	1,275	0.03
CONSOL	0.05 *** (3.84)	0.17 *** (4.33)	0.05 (0.99)	1,275	0.03

Vuong Test : NON-CONSOL vs CONSOL

: Vuong's Z-statistic=0.03(two-tail p-value=1.02)

- 1) Table 5 reports relative value-relevance test using return model. The return model is estimated using ordinary least square. The dependent variable is R , the cumulative market-adjusted return for firm i over the 12-month period of the fiscal year. $EARN$ is earnings per share of firm i during year t . $\Delta EARN$ is change in earnings per share of firm i during year t , scaled by beginning-of-year stock price. The extreme values of each variables are truncated at the 1 and 99 percentiles. In addition, the influential data is eliminated using Cook's D with conventional cut-off point $4/n$ where n is the number of observations. The t -statistics are in parentheses.
- 2) *, **, *** indicated significance at the 10%, 5%, and 1% level, respectively(two-tailed test). The tests in adjusted R^2 are based on Vuong tests(Vuong, 1989).

12) This result is consistent with the prior evidence. As noted in research design section, Easton and Harris(1991) finds that in annual regression for annual returns on both the levels and the changes variables from 1968 to 1986, earning level is value-relevant in all years, while earnings changes is value-relevant in less than half the years. The result of Lee(2009), who examines the change in value-relevance in Korea after the financial crisis in 1997, also shows similar pattern. While the contemporaneous earning level is value-relevant in all years from 1988 to 2006, earning level in previous year is nearly value-relevant(mostly in recent year).

This is consistent with book value and earnings under NON-CONSOL not explaining significantly more of the variation in stock return than that of CONSOL. This suggests that there is no significant difference in value-relevance between NON-CONSOL and CONSOL.

B. Incremental value-relevance test

<Table 6> and <Table 7> presents the results of the incremental value-relevance test using price model and return model, respectively. In <Table 6>, we find that the coefficient on *EARN_DIFF* is significantly positive at 1% level ($t=5.25$), which suggests that consolidated earnings have additional informativeness beyond non-consolidated earnings. On the other hand, in <Table 7>, the coefficients of *EARN_DIFF* and $\Delta EARN_DIFF$ are not statistically significant ($t=0.29$ and 0.60 , respectively). This result implies that consolidated earnings are not incremental explanatory variables for returns beyond non-consolidated earnings.

<Table 6> Incremental value-relevance test using price model

	<i>Intercept</i>	<i>BV_NCON</i>	<i>BV_DIFF</i>	<i>EARN_NCON</i>	<i>EARN_DIFF</i>	N	Adj. R^2
Coeff.	1,310.82 (1.44)	0.57*** (17.95)	-0.05 (-1.39)	4.00*** (13.47)	4.81*** (5.25)	1,535	0.80

1) Table 6 reports incremental value-relevance test using price model. The price model is estimated using White's (1980) heteroskedasticity-corrected standard error. Robust t -statistics are in parentheses. The dependent variable, P , is price per share of firm i at the end of fiscal year t . $EARN$ is earnings per share of firm i during year t . BV is book value per share of firm i during year t . BV_NCON is book value per share of firm i during year t under NON-CONSOL. BV_DIFF is book value per share of firm i during year t under NON-CONSOL minus book value per share of firm i during year t under CONSOL. $EARN_NCON$ is earnings per share of firm i during year t under NON-CONSOL. $EARN_DIFF$ is earnings per share of firm i during year t under NON-CONSOL minus earnings per share of firm i during year t under CONSOL. The influential data is eliminated using Cook's D with conventional cut-off point $4/n$ where n is the number of observations. The tests in adjusted R^2 are based on Vuong tests (Vuong, 1989).

2) *, **, *** Statistically significant at the 10%, 5%, and 1% two-tailed level respectively.

〈Table 7〉 Incremental value—relevance test using return model

	<i>Intercept</i>	<i>EARN_NCON</i>	<i>EARN_DIFF</i>	$\Delta EARN_NCON$	$\Delta EARN_DIFF$	N	Adj. R^2
Coeff.	0.06*** (4.44)	0.19*** (4.82)	0.14 (0.29)	0.07 (1.45)	0.23 (0.60)	1,284	0.04

1) Table 7 reports incremental value—relevance test using return model. The return model is estimated using ordinary least square. T—statistics are in parentheses. The dependent variable, R_i is the cumulative market—adjusted return for firm i over the 12—month period of the fiscal year. $EARN_i$ is earnings per share of firm i during year t , scaled by beginning—of—year stock price. $\Delta EARN_i$ is change in earnings per share of firm i during year t , scaled by beginning—of—year stock price. $EARN_NCON_i$ is earnings per share of firm i during year t , scaled by beginning—of—year stock price under NON—CONSOL. $EARN_DIFF_i$ is earnings per share of firm i during year t , scaled by beginning—of—year stock price under NON—CONSOL minus earnings per share of firm i during year t , scaled by beginning—of—year stock price under CONSOL. $\Delta EARN_NCON_i$ is change in earnings per share of firm i during year t , scaled by beginning—of—year stock price under NON—CONSOL. $\Delta EARN_DIFF_i$ is change in earnings per share of firm i during year t , scaled by beginning—of—year stock price under NON—CONSOL minus change in earnings per share of firm i during year t , scaled by beginning—of—year stock price under CONSOL. The influential data is eliminated using Cook's D with conventional cut—off point $4/n$ where n is the number of observations. The tests in adjusted R^2 are based on Vuong tests(Vuong, 1989).

2) *, **, *** Statistically significant at the 10%, 5%, and 1% two—tailed level respectively.

In sum, the results suggest that there is no significant difference in value—relevance between NON—CONSOL and CONSOL, even though the incremental value—relevance test using price model show significant results. We expect that above results can shed light on the results of Shin(2008) which finds that value—relevance of CONSOL is significantly lower than that of NON—CONSOL using Ohlson model(1995). While he expects that the value—relevance of CONSOL and NON—CONSOL should be same under equity method, he attributes his result to the later preparation of CONSOL. That is, NON—CONSOL may be known to the market to some extent at fiscal year—end, but it takes time for CONSOL to be known to the market. We predict that the difference between our results and Shin(2008) may comes from the difference in data period. As noted above, Shin(2008) use sample of 2001 through 2006 and ours span 2004 through 2008 respectively. Although data periods overlap each other, there were significant changes in accounting policy in 2002 all over the world as a reaction to a number of major corporate and accounting scandals. Korean government also announces the accounting reform plan in November 2002. One of the main points of this plan was the switch of primary financial statements from NON—CONSOL to CONSOL following the Sarbanes—Oxley Act of 2002(SOX) which was enacted as a reaction to a number of major corporate and accounting scandals because it is highly

possible that SOX become a global standard. Jung(2004) reports the survey results on this issue and points out that the change in disclosure policy should be applied first to firms that need to prepare financial statements comparable to global standard and have infrastructure for preparing CONSOL in short period of time. In addition, CONSOL requires information users to have relatively sophisticated accounting knowledge about the process of consolidating. Possibly, over with time from Shin(2008) to this study, firms improve their infrastructure and ability of preparing CONSOL and the understanding of market participants on CONSOL are also enhanced.¹³⁾

2. Earnings Response Coefficient(ERC)

<Table 8> show the results of ERC test to determine the impact of consolidated earnings announcement surprise on stock price. Unexpected consolidated earnings are measured by the difference between consolidated and non-consolidated earnings or by the random walk alternatively.

Panel A of <Table 8> is the result when we measure the earnings surprise by the difference between consolidated and non-consolidated earnings, $UE(DIFF)$. It reports that the coefficient on surprise measure is positive and significant, with a t-statistic of 2.01 in model (1) and 1.94 in model (2) respectively. This result can be interpreted that consolidated earnings convey useful information beyond non-consolidated earnings to the market. Additionally, note that the coefficient on the interaction between $SIZE$ and $UE(DIFF)$ is negative and significant. This result confirms the 'size effect' by prior studies which reports that price reaction to earnings announcements are disproportionally larger for smaller firms(Atiase, 1985).

Panel B of <Table 8> is the result when we measure the earnings surprise by the random walk, $UE(CONSOL)$. Contrary to the result in Panel A, the coefficient on the surprise measure is not significant in both model (1) and model (2) indicating that unexpected consolidated earnings measured by the random walk have no impact on stock price.¹⁴⁾

Prior studies which use the data immediately after enforcement of equity method in 1999 find insignificant return-earnings relation for consolidated earnings.

13) In fact, Choi et al.(2011) investigate whether there is any difference in accounting information between CONSOL and NON-CONSOL with the same data sample as this paper. They measure the quality of accruals by following Dechow and Dichev(2002) as well as McNichols(2002) and find that it significantly increases under CONSOL compared with that under NON-CONSOL. Their findings may be one of possible explanation for these results.

14) Result does not alter when we define $SIZE$ as a dichotomous variable.

〈Table 8〉 $CAR_{(-1, 1)}$ for consolidated statements

Variables	Predicted Sign	(1)	(2)
Panel A : Unexpected consolidated earnings are measured by the difference between consolidated and non-consolidated earnings			
<i>Intercept</i>	(?)	-0.0018 (-1.20)	-0.0017 (-1.20)
<i>UE(DIFF)</i>	(+)	0.7192 ** (2.01)	0.6915 * (1.94)
<i>UE(NONCONSOL)</i>	(+)		0.0020 ** (2.20)
<i>UE(DIFF)*SIZE</i>	(-)	-0.0307 ** (-1.99)	-0.0295 * (-1.92)
<i>Adj. R²</i>		0.0019	0.0051
N		1,185	1,185
Panel B : Unexpected consolidated earnings are measured by random walk			
<i>Intercept</i>	(?)	-0.0016 (-1.13)	-0.0017 (-1.15)
<i>UE(CONSOL)</i>	(+)	-0.0190 (-0.76)	-0.0242 (-0.95)
<i>UE(NONCONSOL)</i>	(+)		0.0080 (1.15)
<i>UE(CONSOL)*SIZE</i>	(-)	0.0010 (0.83)	0.0009 (0.73)
<i>Adj. R²</i>		0.0027	0.0030
N		1,185	1,185

1) Table 8 reports ERC test. The return model is estimated using ordinary least square. The dependent variable is CAR_3 , a measure of market-adjusted return for firm i cumulated over 3 trading-day period beginning one day prior to the announcement of consolidated earnings, $CAR_{(-1, 1)}$. Market-adjusted return is calculated by the difference between the return of firm i and the return of a equal-weighted market index. We identify the event day(day 0) as the earnings announcement date. Unexpected consolidated earnings are measured by $UE(CONSOL)$ and $UE(DIFF)$ alternatively. $UE(DIFF)$ is the difference between non-consolidated and consolidated earnings per share for firm i in year t . $UE(CONSOL)$ is an annual difference in the consolidated earnings per share in year t following random-walk. $UE(NONCONSOL)$ is the unexpected non-consolidated earnings measured as an annual difference in the non-consolidated earnings per share in year t following random-walk. $SIZE$ is a natural log of market value of common equity at the beginning of the year. The extreme values of each variables are truncated at the 1 and 99 percentiles. The t -statistics are in parentheses.

2) *, **, *** indicated significance at the 10%, 5%, and 1% level, respectively(two-tailed test).

For example, Shin and Lee(2000) used $UE(DIFF)$ with the data in year 2000 and finds that unexpected consolidated earnings are not providing useful information to the market. Park(2002) used $UE(CONSOL)$ with the data of 1997–1998 and of 1999–2000, respectively. He finds that while the coefficient on unexpected consolidated earnings is significant at 10% level in 1997–1998, it is not significant in 1999–2000. Although the results of <Table 8> are mixed based on the measure we use, to some extent it imply that the informativeness of consolidated earnings may has been improved with the post–audit review process on CONSOL in 2004.

3. Earnings Announcement and Trading Activity

Before examining the trading activity around the consolidated earnings announcement date, we present the distribution of the earnings announcement data of CONSOL and NON–CONSOL because there can be compounding effect caused by the closeness of consolidated and non–consolidated earnings announcement date.

<Table 9> shows the distribution of the earnings announcement date. 67.35% ($=1,077 \div 1,599$) of firms announce non–consolidated earnings between March 16 and March 30. On the other hand, 86.93% ($=1,390 \div 1,599$) of firms report consolidated earnings between April 16 and April 30.

<Table 9> Distribution of the earnings announcement date

	Non–Consolidated Earnings		Consolidated Earnings	
	Frequency	%	Frequency	%
<i>February 1 ~15</i>	3	0.19	0	0
<i>February 16 ~</i>	26	1.63	0	0
<i>March 1 ~15</i>	179	11.19	2	0.13
<i>March 16 ~</i>	1,077	67.35	139	8.69
<i>April 1 ~15</i>	309	19.32	25	1.56
<i>April 16 ~</i>	2	0.13	1,390	86.93
<i>May 1 ~</i>	3	0.19	43	2.69
<i>Total</i>	1,599	100	1,599	100

1) Table 9 reports the distribution of the earnings announcement date.

Next, <Table 10> shows the distribution of the difference in earnings announcement date between NON-CONSOL and CONSOL. Noticeably, firms that report consolidated earnings within 30~45 days after the non-consolidated earnings announcements is 51.91% ($=830 \div 1,599$). Firms that report consolidated earnings within 15~30 days after the non-consolidated earnings announcements come next accounting for 28.02% ($=448 \div 1,599$) of the sample. In order to alleviate the compounding effect caused by the closeness of consolidated and non-consolidated earnings announcement date, we use observations where the difference between consolidated and non-consolidated earnings announcement date (hereafter, GAP) is more than 30 days. As a result, we use 1,012 observations. In addition, we repeat this volume analysis using more restricted sample where GAP is more than 45 days. This sample restriction remains 182 observations.

<Table 10> Distribution of the difference in earnings announcement date between NON-CONSOL and CONSOL

	Frequency		Cumulative Frequency	
	N	%	N	%
$GAP < 0$	16	1	16	1
$GAP = 0$	27	1.69	43	2.69
$1 \leq GAP < 15$	96	6	139	8.69
$15 \leq GAP < 30$	448	28.02	587	36.71
$30 \leq GAP < 45$	830	51.91	1,417	88.62
$45 \leq GAP < 60$	158	9.88	1,575	98.5
$60 \leq GAP < 75$	18	1.13	1,593	99.62
$75 \leq GAP < 90$	2	0.13	1,595	99.75
$90 \leq GAP$	4	0.25	1,599	100

- 1) Table 10 reports the distribution of the difference in earnings announcement date between NON-CONSOL and CONSOL. GAP is the number of days between non-consolidated earnings announcement date and consolidated earnings announcement date.

<Figure 1> shows the trade volume around earnings announcement date in the report period and the average trade volume in the non-report period. The report period is 41 days surrounding the announcement date beginning 20 days prior to the announcement of consolidated earnings. The trade volume in the report period is presented by solid line. The non-report period is 200~60 days before the announcement date. The average trade volume in the non-report period is

presented by dotted line as a benchmark.

Panel A of <Figure 1> reports the trade volumes when GAP is more than 30 days. It has a pattern of increasing 8 days before the consolidated earnings announcement and decreasing 10 days after the consolidated earnings announcement. In order to examine whether there is a difference in trade volume between report period and non-report period, we compare the mean trade volume using *t*-test. While trade volume surrounding earnings announcement date is greater than that in non-report period (0.012 and 0.011 respectively), we would report a *t*-value of -0.32 with a *p*-value of 0.7461, concluding that the mean trade volume for report period is not significantly greater than the trade volume for non-report period.

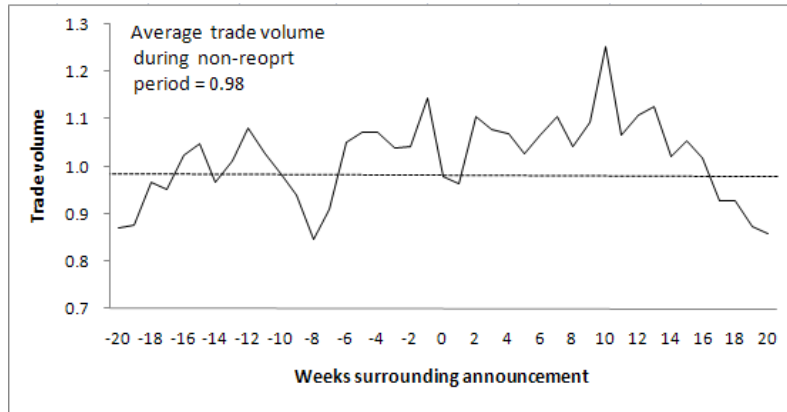
Difference in earnings announcement date between NON-CONSOL and CONSOL can affect the results. Therefore, we also examine the trade volumes when GAP is more than 45 days. In Panel B of <Figure 1>, trade volume peaks 1 day before the consolidated earnings announcement implying that there may exist a significant information content of consolidated earnings. The mean trade volume surrounding earnings announcement date is greater than that in non-report period (0.012 and 0.010 respectively). However, we would report a *t*-value of -0.44 with a *p*-value of 0.6638, concluding that the mean trade volume for report period is not significantly greater than the trade volume for non-report period.

In sum, trade volume analyses are not statistically significant although the figure shows some pattern that implies informativeness of consolidated earnings, and it is more prominent when the number of days between non-consolidated earnings announcement date and consolidated earnings announcement date is bigger. We provide two potential explanations for the results. First, we do not control for stock price crash in 2008. Although there is a significant amount of market response to consolidated earnings announcement in general, remarkable economic events in non-report period can dominate it. Second and more importantly, volume itself could be an alternative proxy for information asymmetry. The reason for this is that trading volume is a measure of liquidity in that it captures the willingness to transact in firm shares among investors, and consequently it is inversely related to the existence of information asymmetries (Leuz and Verrecchia, 2000). Therefore, trade volume can represent information asymmetry between informed and uninformed investors as well as the effect of consolidated earnings on the market.¹⁵⁾

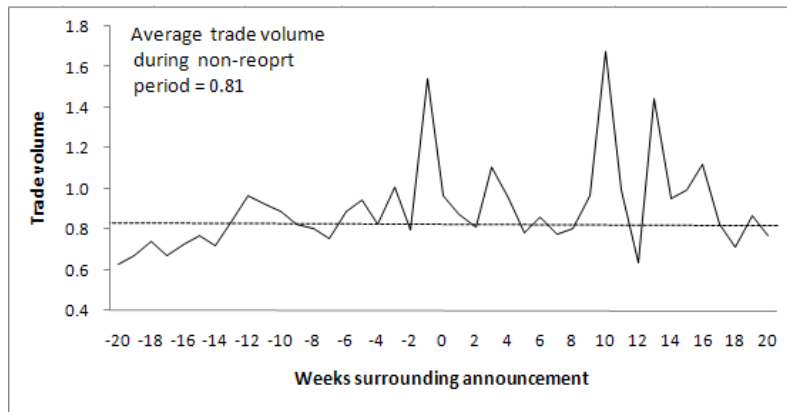
15) We thank an anonymous referee for several constructive suggestions regarding trade volume test.

<Figure 1> Trade volume surrounding earnings announcement date

Panel A : $GAP \geq 30$



Panel B : $GAP \geq 45$



- Figure 1 reports the trading volume surrounding earnings announcement date. GAP is the number of days between non-consolidated earnings announcement date and consolidated earnings announcement date. Report period is defined as 41 days surrounding the announcement date beginning 20 days prior to the announcement of consolidated earnings. Non-report period is defined as 200~60 days before the announcement date. Trade volume has been multiplied by 102 for convenience.

VI. Conclusions

With the adoption of K-IFRS in 2011, a parent company is subject to issue CONSOL as the primary financial statements. In this paper, we re-examine the characteristics of CONSOL using a series of tests such as major financial performance variable analysis, value-relevance analysis, and analysis of market reaction.

Using financial statements data from 2004 to 2008, we provide the following results. KFIs for stability, profitability and valuation significantly deteriorate, whereas KFIs for growth and activity significantly improve in CONSOL. The results of value-relevance tests indicates that there is no significant difference in value-relevance between NON-CONSOL and CONSOL. Next, in market reaction test using ERC and trade volume, significant return-earnings relation is identified and trade volume increase around the announcement date of CONSOL. In sum, CONSOL provides useful information to the market, and the informativeness of CONSOL may have improved after the post-audit review process on CONSOL in 2004.

This study contributes the literature in several ways. The results may provide guidelines for disentangling differences in financial information between NON-CONSOL and CONSOL and evaluating the economic substance of a firm on the basis of CONSOL. The results may empirically support the adoption of K-IFRS by showing that CONSOL is significantly utilized for investor's decision-making of short-term as well as of long-term.

REFERENCES

- Atiase, R. K. 1985. Predisclosure information, firm capitalization, and security price behavior around earnings announcements. *Journal of Accounting Research* 23(1) : 21 – 36.
- Bamber, L. S. 1986. The information content of annual earnings releases : A trading volume approach. *Journal of Accounting Research* 24(1) : 40 – 56.
- Beaver, W. 1968. The information content of annual earnings announcements. *Journal of Accounting Research* 6 : 67 – 92
- Biddle, G., G. Seow, and A. Siegel. 1995. Relative versus incremental information contents. *Contemporary Accounting Research* 12 : 1 – 23.
- Choi, Y. S., H. R. Jung, J. H. Park, and D. H. Kwon. 2011. Is accounting information different between non – consolidated and consolidated financial statements?. *Korean Accounting Journal* 20(4) : 185 – 223. [Printed in Korean]
- Chun, S. B. 1994. A study on information contents of audited consolidated financial statements. *Korean Accounting Review* 19(1) : 51 – 71. [Printed in Korean]
- Collins, D.W., and S.P. Kothari. 1989. An analysis of inter – temporal and cross – sectional determinants of earnings response coefficients. *Journal of Accounting and Economics* 11 : 143 – 181.
- Dechow, P. M. 1994. Accounting earnings and cash flows as measures of firm performance : The role of accounting accruals. *Journal of Accounting and Economics* 18(1) : 3 – 42.
- Easton, P., and T. Harris. 1991. Earnings as an Explanatory variable for returns. *Journal of Accounting Research* 29 : 19 – 36.
- Easton, P., S. Monahan, and F. Vasvari. 2009. Initial evidence on the role of accounting earnings in the bond market. *Journal of Accounting Research* 47(3) : 721 – 766.
- Hwang, I. T. 1995. An empirical investigation of volume reaction to the announcement of consolidated financial statements. *Korean Accounting Review* 20(2) : 59 – 75. [Printed in Korean]
- Jung, J. A., and J. H. Kim. 1991. A study on the usefulness of consolidated financial statements : Accountants' perception and the quality of the information. *Korean Management Review* 20(2) : 127 – 155. [Printed in Korean]
- Jung, K. U. 2004. Changes in disclosure policies of consolidated financial statements. *The 2004 Korean Accounting Association Summer Conference Proceeding* : 629 – 657. [Printed in Korean]
- Jung, K. U., and J. W. Kim. 1994. The incremental information content of consolidated financial statements. *Korean Management Review* 23(3) : 83 – 108. [Printed in Korean]
- Jung, Y. H. 1996. The information contents of financial ratio from consolidated financial statements.

- DAEHAN Journal of Business* 14 : 267–289. [Printed in Korean]
- Kim, J. D. 2000. Reverse firm size phenomenon around the disclosure of consolidated financial statements. *Korean Management Review* 29(2) : 85–108. [Printed in Korean]
- Kim, J. H. 1995. A Study on differences between consolidated financial information and consolidated financial information. *Korean Accounting Journal* 4(1) : 11–26. [Printed in Korean]
- Kim, K. J., and S. O. Nam. 1994. An empirical research on the establishment of policy for consolidated accounting system. *Korean Accounting Review* 18(1) : 19–46. [Printed in Korean]
- Kim, K. J., and I. C. Na. 2002. Value relevance of consolidated sales, expenses and cash flows. *Korean Accounting Review* 27(4) : 115–144. [Printed in Korean]
- Kim, K. J., I. C. Na, and H. S. Kwon. 2001. A study on information content of consolidated accounting earnings. *Korean Accounting Review* 26(4) : 157–187. [Printed in Korean]
- Ko, J. S. 1985. Consolidating accounting in Korea and how to improve it. *The Accounting* 21 : 143–159. [Printed in Korean]
- Kothari, S.P., and J. L. Zimmerman. 1995. Price and return models. *Journal of Accounting and Economics* 20(2) : 155–192.
- Lee, K. J. 1995. An Empirical analysis on the economic consequences of disclosure of consolidated financial statements and Mandatory Audit. *Korean Accounting Review* 20(1) : 79–100. [Printed in Korean]
- Lee, S. Y. 2009. A study on the change in value–relevance of accounting information before and after 1997 financial crisis. *Journal of Taxation and Accounting* 10(1) : 35–75. [Printed in Korean]
- Leuz, C., and R. E. Verrecchia. 2000. The economic consequences of increased disclosure. *Journal of Accounting Research* 38(Supplement) : 91–124.
- Oh, M. S., S. H. Kim, and J. M. Park, 2010. The study on the value relevance of early adopting K–IFRS. *Journal of Taxation and Accounting* 11(4) : 359–384. [Printed in Korean]
- Ohlson, J. 1995. Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research* 11 : 661–687.
- Park, S. H. 1995. The Information content of consolidated accounting data. *Korean Management Review* 24(4) : 119–151. [Printed in Korean]
- Park, S. H. 2002. A study on the information content of consolidated financial statements after introduction of equity method. *Korean Journal of Research* 7(2) : 1–18. [Printed in Korean]
- Shin, H. G., and M. W. Lee. 2002. Information contents of consolidated financial statements under equity method. *Journal of Taxation and Accounting* 3(1) : 67–91. [Printed in Korean]
- Shin, H. G. 2008. Adoption of IFRS : A comparison of value–relevance between parents’ and

- consolidated financial statements. *DAEHAN Journal of Business* 21(3) : 1109 – 1136. [Printed in Korean]
- Vuong, Q. H. 1989. Likelihood ratio tests for model selection and non-nested hypotheses. *Econometrica* 57(2) : 307 – 333.
- White, H. 1980. A heteroskedasticity – consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica* 48(4) : 817 – 838.

연결재무제표의 유용성 분석

- 가치관련성 및 시장반응의 관점에서 -

최연식* · 정형록** · 박진하***

<요 약>

2011년부터 한국 기업은 K-IFRS 규정에 따라 재무제표를 공시해야만 하는데 K-IFRS는 기본 재무제표로 모기업의 경우 연결재무제표를 공시하도록 의무화하고 있다. 본 연구는 연결재무제표가 이전 K-GAAP의 개별재무제표보다 유용한 정보를 제공하는지 여부에 대해 분석한다.

2004부터 2008년 간 공시된 재무제표 자료를 이용하여 본 연구는 연결재무제표와 개별재무제표가 제공하는 핵심 재무정보에 차이가 존재하고 있음을 발견하였다. 즉, 개별재무제표와 비교하여 연결재무제표 상의 안정성(stability), 수익성(profitability), 기업가치(valuation)관련 지표는 악화된 반면 성장성(growth)과 영업활동(operation activity) 지표는 향상된 것으로 나타났다. 이것은 모회사의 경제적 실질에 아무런 변화가 없을 뿐만 아니라 종속회사의 경영성결과 지분법을 통해 개별 재무제표에 보고되고 있어 개별이익과 연결이익에 차이가 없는 경우에도 단순한 주재무제표의 변화로 인해 재무정보의 의미가 바뀔 수 있다는 것을 의미한다. 만일 투자자가 이러한 차이를 명확히 이해하지 못할 경우에는 활용하는 재무제표에 따라 의사결정이 다르게 나타날 수 있다. 이에 따라, 개별재무제표와 연결재무제표가 제공하는 기업가치에 대한 재무정보에 차이가 있는지를 확인하기 위해 장부가치(book value) 및 이익의 기업가치 관련성(value-relevance)을 분석하였다. 분석 결과, 기업가치 관련성은 연결재무제표와 개별재무제표 사이에 통계적으로 유의한 차이가 존재하지 않음이 확인되었다. 이것은 투자자들이 장기적으로 각각의 재무제표가 제공하는 재무정보의 의미를 유사하게 해석하고 있다는 것을 의미한다. 그러나 이익반응계수(ERC)와 주식거래량을 이용한 분석에서는 시장이 연결재무제표 상의 이익발표(earnings announcement)에 유의하게 반응함을 발견하였다. 즉, 개별재무제표 상의 이익이 미치는 영향을 통제한 후에도 추가-이익 간에는 통계적으로 유의한 상관관계가 존재하였으며, 연결재무제표 상의 이익발표일 전후로 평균 주식거래량이 증가하는 것으로 나타났다. 이것은 투자자들이 단기적으로는 개별재무제표가 제공하지 못하는 정보를 연결재무제표를 통해서 추가로 획득하고 있다는 것을 의미한다.

K-IFRS의 채택과 함께 연결재무제표의 정보력(informativeness)에 대한 관심이 높아지고 있는 상황에서 이에 대한 선행연구의 결과는 일관적이지 않다. 본 연구는 재무제표의 변경에 따른 재무정보의 변동 효과에 대한 투자자의 이해의 폭을 넓히고, 연결재무제표가 추가적인 정보를 투자자들에게 제공한다는 시사점을 제공한다. 나아가 연결재무제표가 제공하는 정보가 투자자들의 단기 및 장기 의사결정 모두에 중요하게 활용된다는 실증결과는 연결재무제표를 주재무제표로 요구하는 K-IFRS의 실증적 근거가 될 것으로 기대된다.

〈주제어〉 국제회계기준, 연결재무제표, 가치관련성, 이익반응계수, 주식거래량

* 경희대학교 경영대학 회계·세무학과 조교수, yschoi@khu.ac.kr, 02-961-2345, 제1저자

** 경희대학교 경영대학 회계·세무학과 조교수, jhrjhr@khu.ac.kr, 02-961-2180, 교신저자

*** 서울대학교 대학원 경영학과 박사과정, parkjh04@snu.ac.kr, 02-880-8260, 공동저자