

Table of Contents

Identifying Material Weakness of Internal Control: An Empirical Study for a Multi-year Period (John J. Cheh, Il-woon Kim, Juliana Reifsnyder).....	3
Experience Curve Pricing and Cost Inflation: Evidence from South Korea (Tarique Hossain, Sang Jin Bae, Sung-Soo Seol).....	23
Voluntary Adoption of IFRS and Its Impact on the Value Relevance of Earnings and Equity Book Value for Korean Firms (SungKyu Huh, John JongDae Jin, Kyung Joo Lee).....	41

Managing Editor: Kyung Joo Lee (University of Maryland-Eastern Shore, USA)

Associate Editor: Jae Min Jung (California State Polytechnic University-Pomona, USA)

Review Board:

Heungjoo Cha (Finance, University of Redlands, Redlands, USA)

Haiwei Chen (Finance, University of Texas – Pan American, USA)

David Choi (Management, Loyola Marymount University, USA)

Jim Estes (Finance, California State University – San Bernardino, USA)

Sung-Kyu Huh (Accounting, California State University - San Bernardino, USA)

Stephen Jakubowski (Accounting, Ferris State University, USA)

Jeein Jang (Accounting, ChungAng University, Korea)

John J. Jin (Accounting, California State University - San Bernardino, USA)

Il-Woon Kim (Accounting, University of Akron, USA)

JinSu Kim (Information System, ChungAng University, Korea)

Young-Hoon Ko (Computer Engineering, HyupSung University, Korea)

Byunghwan Lee (Accounting, California State Polytechnic University-Pomona, USA)

Habin Lee (Management Engineering, Brunel University, UK)

Diane Li (Finance, University of Maryland-Eastern Shore, USA)

Qiang Li (Finance, Shanghai University of Finance and Economics, China)

Frank Lin (Information Systems, California State University - San Bernardino, USA)

Steve C Lim (Accounting, California State University – San Bernardino, USA)

Samantha Liu (Accounting, California State University - San Bernardino, USA)

Yongsun Paik (International Business, Loyola Marymount University, USA)

Kwangsun Song (Management, SoonChunHyang University, Korea)

Hua Sun (Real Estate, California State University - San Bernardino, USA)

Tae Won Yang (Finance, California State University - San Bernardino, USA)

Sehwan Yoo (Information Systems, University of Maryland-University College, USA)

MoonGil Yoon (Management Science, Korea Aerospace University, Korea)

Sung Wook Yoon (Accounting, California State University - Northridge, USA)

1. Topics: All areas of business, economics, and information systems

2. Manuscript Guidelines/Comments:

Pan-Pacific Journal of Business Research (PPJBR) is a double blind peer reviewed Journal focusing on integrating all areas of business, economics, finance, and Information Systems. PPJBR pursues high quality researches significantly contributing to the theories and practices of all areas of business, economics, and Information Systems. PPJBR is an academic journal listed on Cabell Directory. PPJBR consider for publication the following topics in all areas of business and economics including Accounting, Economics, Entrepreneurship, Finance, Hospitality Management, International Business, Marketing, Human Resource Management, Operation Management, Information Systems, Strategy, and Supply Chain Management:

- Current and new theories.
- New regulations and policies.
- Application of business and economic theories.
- Case studies exploring current issues
- Pedagogical issues in business education

3. Submission:

Authors are required to submit their article or manuscript electronically at info@ppbri.org.

Before submission, the article or manuscript should not be published in any other journal. The article or manuscript should be in MS Office Word format. It should be written in a single space with a maximum number of 15 pages and 12 font size. Title, the name(s), affiliation(s), address (es), phone number(s), and email(s) of authors should be on the cover page. Contact author should be indicated. Only an abstract of the article or manuscript in 250 words, title, and 4 key words should be shown on the second page.

PPJBR generally follows the American Psychological Association (APA) guidelines. Reference should be presented in a separate sheet at the end of the article or manuscript. Tables, figures, footnotes, and their numbering should appear on the appropriate page. The usage of footnotes should be minimized. The decision of acceptance usually takes three months. After acceptance, PPBRI has a copy right for the accepted article and manuscript.

The article or manuscript should be submitted to: Dr. Kyung Joo Lee, Editor, Kiah Hall Suite 2110, Princess Anne, MD 21853. Phone: 410-621-8738. Email: info@ppbri.org

Voluntary Adoption of IFRS and Its Impact on the Value Relevance of Earnings and Equity Book Value for Korean Firms

Sung-Kyoo Huh *

California State University – San Bernardino, USA

John Jongdae Jin

California State University – San Bernardino, USA

Kyung Joo Lee

University of Maryland - Eastern Shore, USA

ABSTRACT: The purpose of this study is to investigate whether the voluntary adoption of IFRS affects the value relevance of earnings and equity book value. In particular, we compare the valuation coefficients of earnings and equity book value between the Korean firms which adopted IFRS voluntarily prior to mandatory adoption in year 2011 ('early-adopters') and those who did not adopted IFRS ('non-adopters'). Using a sample of 27 early-adopters and 314 non-adopters matched by industry over three year period (2008-2010), we find that the valuation coefficients of both earnings and equity book value are larger for the early-adopters than the non-adopters. We also find that the value relevance of both earnings and equity book value is larger for the post-adoption period than the pre-adoption period for the early-adopters. These results hold even after controlling for other factors that may affect the changes in value relevance between the early-adopters and the non-adopters. Our results suggest that the adoption of IFRS has improved the quality of accounting information for Korean firms.

Keywords: *IFRS, voluntary adoption, value relevance*

JEL Classifications: *M41, M42.*

* Corresponding author. Email: huh@csusb.edu

1. INTRODUCTION

The purpose of this study is to investigate whether the voluntary adoption of the International Financial Reporting Standards (IFRS) affects the value relevance of earnings and equity book value. Even before the mandatory adoption of IFRS by all Korean firms in year 2011, some firms adopted IFRS voluntarily. Thus, we investigate whether the quality of accounting information from income statement (earnings) and balance sheet (book value of equity) is systematically different between the firms which adopted IFRS voluntarily ('early-adopters') and those who waited until the mandatory year 2011 ('non-adopters'). We measure the quality of accounting information as reflected in firm valuation, that is, the magnitudes of valuation coefficients on earnings and equity book value similar to Barth et al. (1998).

Using a sample of 27 early-adopters and 314 non-adopters matched by industry over three year period (2008-2010), we find that the valuation coefficients of both earnings and equity book value are larger for the early-adopters than the non-adopters. We also find that the value relevance of both earnings and equity book value is larger for the post-adoption period than the pre-adoption period for the early-adopters. These results suggest that the adoption of IFRS has improved the quality of accounting information for Korean firms.

The remainder of this paper is organized as follows. First, research background and a hypothesis development are discussed. Then, sample selection and research method are described. The empirical tests and their results are followed. In the final section, conclusions are addressed.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

In 2010, Korea passed a regulation that requires all listed companies to adopt the International Financial Reporting Standards (IFRS) for the reporting periods ending in year 2011. This change must have a significant impact on financial reporting in Korea especially because IFRS replaced Korean domestic accounting standards with this change. Therefore, it is a very important empirical question whether benefits from IFRS adoption exceed its costs in Korea. One meaningful way to measure the effect of IFRS adoption would be to investigate if the quality of accounting information has improved with IFRS adoption in Korea.

The adoption of IFRS would improve the quality of accounting information for the following reasons. First, adopting IFRS will eliminate alternative accounting methods that are less reflective a firms' performance and will lead to more transparent financial statements. This enhanced transparency would reduce not only the uncertainty of companies' economic situations, but also the information asymmetry between managers and stockholders. Second, adopting IFRS will reduce the cost of comparing firms' financial statements. This improved comparability would reduce the investor cost to evaluate the quality of financial reports among firms and across countries. This reduction in monitoring cost by investors will put pressure on managers' incentive to manipulate earnings.

Numerous researches have been conducted on accounting information quality changes with adoptions of IFRS in various countries. In spite of concerns on superficial improvement but not substantial improvement of financial reporting with IFRS adoptions considering efficient capital markets and extremely high costs for implementations of and compliance with IFRS, there are more of positive than negative evidence on this issue, indicating the improvement of accounting information quality with IFRS adoptions. Prior research provides evidence that IFRS adoption improves accounting information quality in terms of reduced earnings management and more timely loss recognition (e.g., Hung and Subramanya; Barth et al., 2008; Iatridis and

Rouvolis, 2010), higher value relevance, increased disclosure quality and improved comparability (e.g., Bartov et al., 2005; Capkun et al., 2008; Barth et al., 2008; Iatridis and Rouvolis, 2010; Daske and Gerbhardt, 2006; DeFond et al., 2011).

However, there are significant variations of accounting information quality changes across the countries due to some country specific characteristics. Factors affecting accounting information quality are: the quality of domestic standards relative to IFRS, investors' preference of domestic standards over IFRS, implementations of IFRS, compliance with IFRS, the competitiveness of domestic capital market, and accounting environment. Ball et al. (2000) suggest that implementation of accounting standards differs across countries due to differences in enforcements as well as differences in managers' real business decisions made in direct response to accounting standards.

Korean GAAP prior to the IFRS adoption is different from IFRS, especially in the area of consolidated financial statements. Korean GAAP used to have more pervasive presence of conservative accounting than IFRS. Due to stronger control by the government in Korea than other countries with equivalent economic power and economic diversity, enforcement of accounting standards would be more effective in Korea, which leads to higher compliance with accounting standards. Given the differences in Korea's institutional settings such as socio-economic, legal and political systems from other countries that have been investigated in prior studies, the impact of adopting IFRS on the quality of accounting information is a very important empirical question.

A few studies examined the effects of adopting IFRS on the quality of accounting information for Korean firms. Choi et al (2011) investigated whether the reconciliation adjustments to earnings and book value of equity from *voluntary* adoption of IFRS for Korean firms have improved the value relevance of accounting information. Their empirical results show that reconciliation adjustments have incremental value relevance for earnings but not for book value of equity. Choi (2013) investigated the incremental value relevance of the reconciliation adjustments in earnings and book value of equity after the *mandatory* adoption of IFRS in year 2011. His results show no incremental value relevance of the adjustments. Our study is similar to Choi et al (2011) by addressing the effects of voluntary IFRS adoption on value relevance of accounting information. However, our study is different from theirs in that that we investigate the value relevance of earnings and book value of equity, not reconciliation adjustments, and compare the value relevance between voluntary adopters and non-adopters and between pre-adoption period and post-adoption period.

Value relevance, earnings smoothing, and timely loss information recognition can be good surrogates for accounting information quality (Barth et.al 2008). However, value relevance is the most frequently used measure of accounting information quality because it is the comprehensive and direct measure of accounting information quality perceived by the capital market. Based on the arguments and empirical results described the above, our testable hypotheses are:

Hypothesis 1: Value relevance of earnings and equity book value is *larger* for 'early-adopters' than for 'non-adopters'.

Hypothesis 2: For 'early-adopters', value relevance of earnings and equity book value is *larger* in 'post-adoption' period than in 'pre-adoption' period.

3. SAMPLE SELECTION AND RESEARCH METHOD

3.1 Sample Selection

The sample firms examined in this study are Korean firms who adopted the IFRS voluntarily in year 2008 and 2009 ('early-adopters'). To be included in the sample, the firm must be listed in the Korean Stock Exchange (KSE) and satisfy the following criteria: (1) Sufficient accounting data including earnings per share (EPS) and book value of equity was available each year from 2007 to 2010; (2) Stock price data at the end of the year was available each year over the study period (2007-2010).

TABLE 1

Industry Classification of Sample Firms

Industry	SIC	Early		Non-		Total	
		Adopters		Adopters			
		N	%	N	%	N	%
Timber and Wood Products	C16	2	7.41	1	0.32	3	0.88
Textile & Printing	C17	2	7.41	19	6.05	21	6.16
Chemicals	C20	4	14.81	59	18.79	63	18.48
Pharmaceuticals	C21	2	7.41	36	11.46	38	11.14
Lumber and Plastics	C22	1	3.70	13	4.14	14	4.11
Electronics and Computers	C26	8	29.63	33	10.51	41	12.02
Machinery and Other Devices	C29	1	3.70	30	9.55	31	9.09
Automobile and Trailer	C30	1	3.70	35	11.15	36	10.56
Transportation Equipment	C31	1	3.70	6	1.91	7	2.05
Retail	G46	1	3.70	34	10.83	35	10.26
Transportation	H50	2	7.41	4	1.27	6	1.76
Communication	J61	1	3.70	2	0.64	3	0.88
Services	M71	1	3.70	42	13.38	43	12.61
Total		27	100.00	314	100.00	341	100.00

The above selection criteria yielded a sample of 27 early-adopters, of which 5 firms had adopted the IFRS in 2008 and 22 firms in 2009. To select a sample of non-adopters, each of 27 early-adopters was matched by industry with all those firms that satisfy the above data availability requirements but did not adopt the IFRS until 2011. This procedure yielded a sample of 314 non-adopters.

The breakdown of sample firms by industry is shown in Table 1. The sample consists of 13 industries and there is some clustering in particular industries. For example, Electronics and Computers industry accounts for 29.63% and Chemicals industry 14.81% of ‘early adopters’ sample. Other than this clustering, however, sample firms are well-distributed among industries. However, there are differences in industry distributions between the early-adopters and the non-adopters.

3.2. Research Method

The value relevance of accounting information can be defined as the ability of financial statements to summarize information that affects firm value (Collins et al. (1997); Francis and Schipper (1999)). Although financial statements provide lots of value relevant information, earnings and book value of equity have been considered as two key measures. Following the valuation model developed by Ohlson (1995) and subsequent empirical studies, we operationalize the value relevance of earnings and book value by estimating the following regression model:

$$P_{it} = a_0 + a_1 EPS_{it} + a_2 BV_{it} + \varepsilon_{it} \quad (1)$$

Where, P_{it} = the price of stock for firm i at the end of year t ;
 EPS_{it} = the earnings per share of firm i during the year t ;
 BV_{it} = the book value per share for firm i at the end of year t .

As our metrics to measure the value relevance of earnings and book value, we use the coefficient estimates (\hat{a}_1 and \hat{a}_2) of regression model (1). We estimate the model (1) for the sample of early-adopters and non-adopters, separately. Regression coefficients, \hat{a}_1 and \hat{a}_2 , can be interpreted as the weight of earnings and book value in pricing equity, respectively. Alternatively, they are called ‘earnings response coefficient’ and ‘book value response coefficient’. Using this metric of value relevance, we can state our hypothesis as:

Hypothesis: \hat{a}_1 (early-adopters) > \hat{a}_1 (non-adopters)
 \hat{a}_2 (early-adopters) > \hat{a}_2 (non-adopters);

4. EMPIRICAL RESULTS

4.1 Descriptive Statistics

TABLE 2

Descriptive Statistics of Selected Variables

Variables	Early Adopters (n=54)			Non-Adopters (n=620)			Wilcoxon z-statistics (p-value)
	Mean	Std Dev	Median	Mean	Std Dev	Median	
P ¹⁾	53.720	89.537	13.125	20.834	44.131	5.770	3.455 (0.001)***
EPS ²⁾	3.658	7.736	0.932	1.920	5.143	0.433	1.235 (0.217)
BV ³⁾	36.219	47.376	19.367	25.782	39.125	9.851	2.632 (0.008)***
SIZE ⁴⁾	57.012	182.525	5.108	7.001	22.141	0.748	4.795 (0.001)***
ROE ⁵⁾	0.024	0.209	0.051	0.014	0.236	0.056	-0.210 (0.834)
RTIPI ⁶⁾	0.237	1.213	0.024	0.239	1.404	0.007	3.0098 (0.002)***
DEBT ⁷⁾	1.293	1.096	1.118	1.096	1.926	0.736	2.971 (0.003)***

1) Price per common share at the end of fiscal year end (in ₩1,000).

2) Earnings per share (in ₩1,000).

3) Book value of equity per share (in ₩1,000).

4) Market value of equity (in ₩Trillions).

5) Return on equity = Net Income / Equity

6) Ratio of transitory income to permanent income = Extraordinary items/Income from continuing operations

7) Debt to equity ratio

*** Significant at $\alpha < 0.01$; ** Significant $\alpha < 0.05$; * Significant $\alpha < 0.10$;

Table 2 provides descriptive statistics for selected variables of the sample firms. Also reported are Wilcoxon rank test statistics for the differences in these variables between early-adopters and non-adopters. Selected variables include stock price (P), earnings per share (EPS), book value of equity per share (BV), firm size as measured by market value of equity (SIZE), return on equity (ROE), the ratio of transitory income to permanent income (RTIPI) and debt to equity ratio (DEBT). RTIPI, a measure of earnings quality, is obtained by dividing extraordinary items by income from continuing operations.

All the variables are larger for early-adopters than for non-adopters, and the differences are statistically significant except for EPS and ROE. For example P, EPS and BV of early-adopters are almost twice as large as those of non-adopters. Early-adopters also exhibit larger SIZE, RTIPI and DEBT than non-adopters. This result indicates that early adopters are large firms with poor earnings quality and high debt-to-equity ratio.

Table 3 shows correlations among the variables of interests for the early-adopters (Panel A) and the non-adopters (Panel B). The upper right (lower left) hand side contains the Spearman (Pearson) correlation coefficients. As expected, earnings (EPS) and book values (BV) are positively correlated with stock prices (P), and with each other. More importantly, correlation of stock price (P) with accounting information (EPS and BV) is stronger for early-adopters than for non-adopters. For example, Pearson correlation coefficients of P with EPS (BV) are 0.793 (0.794) for early-adopters, but 0.748 (0.750) for non-adopters. This suggests that the voluntary adoption of IFRS by early-adopters has improved the quality of their accounting information in its role for firm valuation.

TABLE 3

Correlations among Price, Earnings and Book Value

<i>Panel A: Early Adopters</i>			
Variables	P	EPS	BV
P	1.000	0.752	0.850
EPS	0.793	1.000	0.685
BV	0.794	0.801	1.000
<i>Panel B: Non-Adopters</i>			
Variables	P	EPS	BV
P	1.000	0.694	0.849
EPS	0.748	1.000	0.676
BV	0.750	0.711	1.000

Pearson correlations are in the bottom-left cells and Spearman correlations are in the upper-right cells. All of the correlation coefficients are significant at the 0.0001 level.

4.2 Results of Comparing Value Relevance between Early-adopters and Non-adopters

TABLE 4

Coefficients from Regressions of Stock Price on Earnings and Equity Book Value: Early Adopters versus Non-Adopters ¹⁾

$$P_{it} = b_0 + b_1 D_{it} + b_2 EPS_{it} + b_3 EPS_{it} * D_{it} + b_4 BV_{it} + b_5 BV_{it} * D_{it} + \varepsilon_{it}$$

	Expected sign	Early Adopters (n=84)	Non-Adopters (n=946)	Pooled Sample
Intercept	?	6,454.554 (0.800)	550.894 (0.490)	550.894 (0.450)
<i>D</i>	?			5,903.660 (1.240)
<i>EPS</i>	+	5.702	3.926	3.926
<i>EPS*D</i>	+			1.776 (2.200)**
<i>BV</i>	+	0.928 (4.270)***	0.519 (16.23)***	0.519 (14.740)***
<i>BV*D</i>	+			0.409 (3.190)***
Adj. R ² (%)		69.24	65.52	67.74

D_{it} is a dummy variable which takes a value of one if the firm i in year t belongs to the IFRS adopting firms (early adopters), and zero if it belongs to the firms who did not adopt IFRS (non-adopters).

*** Significant at $\alpha < 0.01$; ** Significant $\alpha < 0.05$; * Significant $\alpha < 0.10$;

Table 4 presents the results of comparing the value relevance of earnings and book value, as measured by the coefficients from regression model (1). We first estimate equation (1) for early-adopters and non-adopters, separately.

Table 4 summarizes the yearly regression results. The coefficients on EPS and BV have the predicted sign (positive) and are statistically significant (at $\alpha < 0.001$) for both groups of firms. More importantly, the coefficient on EPS (earnings response coefficient: ERC) for early-adopters (5.702) is larger than that for non-adopters (3.926). The coefficient on BV (book value response coefficient: BVRC) for early-adopters (0.928) is also larger than that for non-adopters (0.519).

As an additional approach to test our hypothesis, we estimate the pooled cross-sectional and time-series model which includes a dummy variable, D_{it} , which takes a value one if the observation belongs to the firm-year for early-adopters and zero for non-adopters:

$$P_{it} = b_0 + b_1 D_{it} + b_2 EPS_{it} + b_3 EPS_{it} * D_{it} + b_4 BV_{it} + b_5 BV_{it} * D_{it} + \varepsilon_{it} \quad (4)$$

In this model, the coefficients, b_3 and b_5 , represent the differences in ERCs and BVRCs, respectively, between early-adopters and non-adopters.

The last column of Table 4 presents the results of estimating the above model. A significantly positive value of coefficient b_3 (1.776 at $\alpha < 0.05$) means that EPS has larger effect on equity price for early-adopters than non-adopters. As for BV, the coefficient b_5 is also positive (0.409) and statistically significant (at $\alpha < 0.01$). In addition, the adjusted R^2 s shown in Table 4 indicate that earnings and book value jointly explain 69.24% of the variation in equity prices for early adopters, but only 65.52% for non-adopters.

These results are consistent with the argument that the voluntary adoption of IFRS by early-adopters has improved the quality of their accounting information in its role for firm valuation, as measured by the value relevance of earnings and book value of equity.

4.3 Results of Comparing Value Relevance between Pre-adoption and Post-adoption Periods

To examine if there is a systematic change in the value relevance of earnings and book value from the voluntary adoption of IFRS by early-adopters, we first estimate equation (1) for pre-adoption period and post-adoption period, separately.

Table 5 summarizes the yearly regression results. The coefficients on EPS and BV have the predicted sign (positive) and are statistically significant (at $\alpha < 0.001$) for both pre-adoption and post-adoption periods. More importantly, the coefficient on EPS (earnings response coefficient: ERC) for post-adoption period (6.225) is larger than that for pre-adoption period (2.660). Although the difference is small, the coefficient on BV (book value response coefficient: BVRC) for post-adoption period (1.354) is also larger than that for pre-adoption period (0.825).

As an additional approach to test our hypothesis, we estimate the pooled cross-sectional and time-series model which includes a dummy variable, D_{it} , which takes a value one if the observation belongs to the year after adopting IFRS (post-adoption period) and zero otherwise:

$$P_{it} = b_0 + b_1 D_{it} + b_2 EPS_{it} + b_3 EPS_{it} * D_{it} + b_4 BV_{it} + b_5 BV_{it} * D_{it} + \varepsilon_{it} \quad (4)$$

In this model, the coefficients, b_3 and b_5 , represent the differences in ERCs and BVRCs, respectively, between pre-adoption and post-adoption periods.

The last column of Table 5 presents the results of estimating the above model. A significantly positive value of coefficient b_3 (3.565 at $\alpha < 0.05$) means that EPS has larger effect on equity price for post-adoption period than for pre-adoption period. As for BV, the coefficient b_5 is also positive (0.528) and statistically significant ($\alpha < 0.05$).

Along with the results using the comparison between early-adopters and non-adopters, these results are consistent with the argument that the voluntary adoption of IFRS by early-adopters has improved the quality of their accounting information in its role for firm valuation, as measured by the value relevance of earnings and book value of equity.

Table 5

Coefficients from Regressions of Stock Price on Earnings and Equity Book Value for Early IFRS Adopting Firms: Comparison between Pre-Adoption and Post-Adoption Periods ¹⁾

$$P_{it} = b_0 + b_1 D_{it} + b_2 EPS_{it} + b_3 EPS_{it} * D_{it} + b_4 BV_{it} + b_5 BV_{it} * D_{it} + \varepsilon_{it}$$

	Expected sign	Post-Adoption period	Pre-Adoption period	Pooled Sample
Intercept	?	4,134.159 (0.290)	12,135.000 (1.980)*	12,135.000 (1.330)
<i>D</i>	?			-8,000.756 (0.550)
<i>EPS</i>	+	6.225 (4.030)***	2.660 (3.290)***	2.660 (2.210)**
<i>EPS*D</i>	+			3.565 (2.060)**
<i>BV</i>	+	1.354 (4.190)***	0.825 (7.880)***	0.825 (5.290)***
<i>BV*D</i>	+			0.528 (1.740)*
Adj. R ² (%)		52.46	84.55	67.21

¹⁾ D_{it} is a dummy variable which takes a value of one if the firm i in year t belongs to the period after adopting IFRS, and zero if it belongs to the period before the adoption of IFRS.

*** Significant at $\alpha < 0.01$; ** Significant $\alpha < 0.05$; * Significant $\alpha < 0.10$;

4.4. Additional Analysis

As shown in Table 2, there are significant differences in firm characteristics such as firm size (SIZE), return on equity (ROE), transitory income (RTIPI), and debt to equity ratio (DEBT) between the early-adopters and non-adopters. These differences may affect the observed differences in value relevance between the early-adopters and the non-adopters. To address this potential effects of these differences in firm characteristics on our empirical results, we estimated the regression equation (4) by including four dummy variables –DSIZE, DROE, DRTIPI, and DDEBT- which take value of one if each variable is greater than its median value, and zero otherwise.

TABLE 6

The Effects of Voluntary Adoption of IFRS on the Value Relevance of Earnings and Equity Book Value: Analyses after Controlling for Firm Characteristics and Yearly Differences

$$P_{it} = b_0 + b_1 D_{it} + b_2 EPS_{it} + b_3 EPS_{it} * D_{it} + b_4 BV_{it} + b_5 BV_{it} * D_{it} + \varepsilon_{it}$$

Panel A: Early-Adopters versus Non-Adopters			Panel B: Pre-Adoption Period versus Post-Adoption Period		
Model ¹⁾	Expected sign	Estimation Results	Model ²⁾	Expected sign	Estimation Results
Intercept	?	5,336.59 (2.420)**	Intercept	?	-2,985.22 (0.210)
<i>D</i>	?	-2,485.32 (0.570)	<i>D</i>	?	6,251.47 (0.290)
<i>EPS</i>	+	3.567	<i>EPS</i>	+	2.576
<i>EPS*D</i>	+	2.065 (2.830)***	<i>EPS*D</i>	+	3.685 (2.110)**
<i>BV</i>	+	0.439 (13.450)***	<i>BV</i>	+	0.848 (5.380)***
<i>BV*D</i>	+	0.330 (2.840)***	<i>BV*D</i>	+	0.476 (1.530)
<i>DSIZE</i>	?	41,246.00 (14.53)***	<i>D2006</i>	?	12,942.00 (0.400)
<i>DROE</i>	?	-8,981.41 (3.94)***	<i>D2007</i>	?	26,132.00 (1.500)
<i>DRTIPI</i>	?	-2,894.97 (0.96)	<i>D2009</i>	?	-15,067.00 (0.530)
<i>DDEBT</i>	?	-1,529.76 (0.74)	<i>D2010</i>	?	6,848.75 (0.390)
Adj. R ² (%)		73.55	Adj. R ² (%)		66.85

¹⁾ D_{it} is a dummy variable which takes a value of one if the firm i in year t belongs to the IFRS adopting

firms (early adopters), and zero if it belongs to the firms who did not adopt IFRS (non-adopters);

DSIZE = 1 if SIZE (market value of equity) > median, 0 otherwise;

DROE = 1 if ROE (return on equity) > median, 0 otherwise;

DRTIPI = 1 if RTIPI (ratio of transitory to permanent income) > median, 0 otherwise;

DDEBT = 1 if DEBT (debt to equity ratio) > median, 0 otherwise;

²⁾ D_{it} is a dummy variable which takes a value of one if the firm i in year t belongs to the period after adopting IFRS, and zero if it belongs to the period before the adoption of IFRS;

D2006 = 1 if year belongs to 2006, 0 otherwise;

D2007 = 1 if year belongs to 2007, 0 otherwise;

D2009 = 1 if year belongs to 2009, 0 otherwise;

D2010 = 1 if year belongs to 2010, 0 otherwise;

*** Significant at $\alpha < 0.01$; ** Significant $\alpha < 0.05$; * Significant $\alpha < 0.10$;

Similar approach was used to control for the potential effects of yearly economic conditions on the difference in value relevance between the post-adoption period and the pre-adoption period for the early-adopters. Regression equation (4) was estimated by including four yearly dummy variables –D2006, D2007, D2009, and D2010- which take value of one if data belong to a given year, zero otherwise.

Panel A of Table 6 presents the results of comparing value relevance between the early-adopters and the non-adopters after controlling for differences in firm characteristics between these two groups of firms. A significantly positive value of coefficient b_3 (2.065 at $\alpha < 0.01$) means that EPS has larger effect on equity price for early-adopters than non-adopters. As for BV, the coefficient b_5 is also positive (0.439) and statistically significant (at $\alpha < 0.01$).

Panel B of Table 6 presents the results of comparing value relevance between the post-adoption period and the pre-adoption period for the early-adopters after controlling for yearly differences over the estimation period. A significantly positive value of coefficient b_3 (3.685 at $\alpha < 0.05$) means that EPS has larger effect on equity price for post-adoption period than for pre-adoption period. As for BV, the coefficient b_5 is also positive (0.848) but statistically insignificant.

Overall, these results are consistent with the argument that the voluntary adoption of IFRS by early-adopters has improved the quality of their accounting information in its role for firm valuation, as measured by the value relevance of earnings and book value of equity. These results hold even after controlling for the factors that may affect the changes in value relevance for the firms voluntarily adopting IFRS.

4. CONCLUSION

This study investigates whether the voluntary adoption of IFRS by Korean firms affects the quality of accounting information. Using value relevance of accounting information as the measure of its quality, we compare the valuation coefficients of earnings and equity book value between the Korean firms which adopted IFRS voluntarily prior to mandatory adoption in year 2011 ('early-adopters') and those who did not adopted IFRS ('non-adopters').

Our empirical results, using a sample of 27 early-adopters and 314 non-adopters matched by industry over three year period (2008-2010), show that value relevance of accounting information is larger for early-adopters than for non-adopters. Specifically, we find that the valuation coefficients of both earnings and equity book value are larger for the early-

adopters vis-à-vis the industry-matched non-adopters. We also find that the value relevance of both earnings and equity book value is larger for the post-adoption period than the pre-adoption period for the early-adopters. These results hold even after controlling for differences in firm characteristics between the early-adopters and the non-adopters, and time-series differences between the post-adoption period and pre-adoption period. Overall, our results suggest that the adoption of IFRS has improved the quality of accounting information for Korean firms.

Several related issues are left for future research. First, an inter-temporal analysis that examines the direction of changes in value relevance of earnings and book value associated with the *mandatory* adoption of IFRS by all the Korean public firms in the year 2011 would be an interesting approach, and particularly useful for controlling for other firm characteristics affecting the variations in value relevance of earnings and book value. Second, an investigation into a closely related but not addressed question in this study, why those firms voluntarily adopted IFRS, would be an interesting issue. Finally, a natural extension would be to apply the same argument and approach to comparing other measures of accounting information quality such as the cost of capital, analysts' forecast accuracy, and earnings management between the early-adopters and non-adopters.

REFERENCES

- Ashbaugh, H., and M. Pincus. 2001. Domestic Accounting Standards, International Accounting Standards, and the Predictability of Earnings. *Journal of Accounting Research* 39 (3): 417-434.
- Barth, M. E., W. Landsman, and W. Beaver. 1998. Relative Valuation Roles of Equity Book Value and Net Income as a Function of Financial Health *Journal of Accounting and Economics* 25 (1): 1-34.
- _____, _____, and M. Lang. 2008. International Accounting Standards and Accounting Quality. *Journal of Accounting Research* 46 (3): 467-498.
- Beuselinck, C., and P. Joos, and I. K. Khurana, and S. Van der Meulen. 2009. Mandatory IFRS Reporting and Stock Price Informativeness. Working paper, Tilburg University.
- Byard, D., and Y. Li, and Y. Yu. 2011. The effect of mandatory IFRS adoption on financial analysts' information environment. *Journal of Accounting Research* 49 (1): 69-96.
- Choi, J. H. 2013. The Adoption of IFRS and Value Relevance of Accounting Information. *Korean Accounting Review* 38 (1): 391-424.
- Choi, S., and I. Kim, and K. Choi. 2011. The Early Adoption of K-IFRS and its Effect on the Quality of Accounting Information. *Korean Accounting Review* 36 (2): 1-30.
- Collins, D. W., and E. L. Maydew, and I. S. Weiss. 1997. Changes in the Value-relevance of Earnings and Book Values over the Past Forty Years. *Journal of Accounting and Economics* 24 (1): 39-67.
- Covrig, V.M., and M.L. Defond, and M. Hung. 2007. Home Bias, Foreign Mutual Fund Holdings, and the Voluntary Adoption of International Accounting Standards. *Journal of Accounting Research* 45 (1): 41-70.
- Daske, H., and L. Hail, and C. Leuz, and R. Verdi. 2008. Mandatory IFRS Reporting Around the World: Early Evidence on the Economic Consequences. *Journal of Accounting Research* 46 (5): 1085-1142.
- DeFond, M., and X. Hu, and M. Hung, and S. Li. 2011. The impact of mandatory IFRS adoption on foreign mutual fund ownership; the role of comparability. *Journal of Accounting and Economics* 51 (3): 240-258.
- Francis, J., and K. Schipper. 1999. Have Financial Statements Lost Their Relevance?. *Journal of Accounting Research* 37: 319-352.
- Horton, J., and G. Serafeim, and I. Serafeim. 2010. Does mandatory IFRS adoption improve the information environment?. Working paper. London School of Economics.
- Karamanou, I., and G. Nishiotis. 2009. Disclosure and the Cost of Capital: Evidence From the Market's Reaction to Firm Voluntary Adoption of IAS. *Journal of Business, Finance and Accounting* 36: 793-821.
- Kim, Y., and H. Li, and S. Li. 2011. Does Eliminating the Form 20-F Reconciliation from IFRS to U.S. GAAP Have Capital Market Consequences?. *Journal of Accounting and Economics* Forthcoming.
- Kothari, S. P., and K. Ramanna, and D. J. Skinner. 2010. Implications for GAAP from an analysis of positive research in accounting. *Journal of Accounting and Economics* 50 (2-3): 246-286.
- Landsman, W. R., and E. L. Maydew, and J. R. Thornock. 2011. The Information Content of Annual Earnings Announcements and Mandatory Adoption of IFRS. *Journal of Accounting and Economics* Forthcoming.

- Leuz, C., and Verrecchia. 2000. The Economic Consequences of Increased Disclosure. *Journal of Accounting Research* 38: 91-124.
- Ohlson, J. 1995. Earnings, Book Values and Dividends in Equity Valuation. *Contemporary Accounting Research* 11 (2): 661-687.
- Tan, H., and S. Wang, and M. Welker. 2011. Analyst following and forecast accuracy after mandated IFRS adoptions. *Journal of Accounting Research* 49 (5): 1307-1357.
- Teoh, S. H., and C. Y. Hwang. 1991. Nondisclosure and Adverse Disclosure as Signals of Firm Value. *Review of Financial Studies* 4 (2): 283-313.