The Impact of K-IFRS Adoption on the Value Relevance of Accounting Information

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Abstract

This study investigates the impact that IFRS adoption in Korea has had on the value relevance of accounting information. The hypothesis is that under the new set of accounting standards (IFRS-based accounting standards named K-IFRS in Korea), the quality of book value and earnings reported by these companies is relatively higher. To this end, the quality of accounting information proxy is studied using the value relevance of book value and earnings. 10,720 firm-year observations are obtained for a five-year period before and a five-year period after the adoption of K-IFRS, and the results indicate that the adoption of K-IFRS is related to a higher reported book value and earnings quality. The results show that the value relevance of the firms’ book value and earnings is significantly higher after the adoption of K-IFRS.

This study reinforces the notion that introducing IFRS improves the usefulness of accounting information and further indicates that IFRS adoption can ensure consistency in Korea of international accounting standards to improve the credibility of accounting information. As such, this research has directly addressed the impact of IFRS adoption on the quality of financial reporting in an emerging market.

Keywords: IFRS, K-IFRS, financial reporting, value relevance.

I. Introduction

This study investigates the impact that the adoption of IFRS (International Financial Reporting Standards) in Korea had on accounting information. Korea mandated the use of IFRS starting from 2011, and K-IFRS (Korean-IFRS) implementation offers two unique features. First, all public companies and major financial institutions were required to adopt K-IFRS in full at once. They were required to apply IFRS to not only consolidated financial statements but also to separate financial statements. Second, K-IFRS adoption was required not only as a practice, but also in the regulatory regime.

The Korean government pursued the adoption of K-IFRS to respond to the need to align accounting standards with global standards, to reduce the financial reporting costs and capital costs for Korean firms, to improve the quality of accounting information and consequently firm value, and to address the ‘Korea Discount’ by improving the reliability of accounting information.
The IFRS conceptual framework considers that value relevance of accounting information improves through the adoption of IFRS. The book value and earnings in financial statements are summary descriptors of value, and this study explores how value relevance has changed after the adoption of the K-IFRS. The perspective of the value relevance is to examine the capital market benefits of the adoption of K-IFRS.

Greater value relevance is one aspect of accrual quality, and a higher accrual quality can change into a lower cost in capital markets (Francis, LaFond, Olsson, and Schipper, 2004; Ball, Kothari, and Robin, 2000). Many countries have adopted IFRS for their local accounting standards to prepare firm accounts, but despite this widespread adoption, little research has directly investigated the impact that IFRS adoption has had on the quality of financial reporting in emerging markets. Better accounting standards could increase the quality of financial statements, and thus, the impact of adopting IFRS in Korea could be more significant than that for Korean local GAAP (K-GAAP).

The sample data, obtained from KIS-Value Data, consist of 10,720 firm-year observations from companies listed in Korea. The results suggest the following. The book value and the earnings reported during the K-IFRS period have a higher value relevance compared to book value and earnings reported in the pre-K-IFRS period.

This study indicates that the introduction of IFRS enhances the usefulness of accounting information and also contributes to verifying that IFRS adoption can secure international consistency of accounting standards in Korea and improve the credibility of accounting information. This research directly addresses the impact that IFRS adoption has on the quality of financial reporting in Korea as an emerging market.

This study is organized as follows. Section 2 reviews existing literature and develops arguments for our hypothesis. Section 3 describes the research design and samples. Section 4 presents descriptive statistics and the results of empirical tests. Section 5 summarizes the conclusions.

II. Background and hypothesis

Prior to the voluntary adoption of IFRS, researchers examined the value relevance of book value and earnings. Arce and Mora (2002) used data from 1990-1998 to investigate the valuation relevance of book value and earnings across 8 European countries.

Some studies have examined the value relevance of the book value and earnings for voluntary adopters of IFRS. Bartov, Goldberg and Kim (2005) investigate the effects of IAS (IAS, a precursor to IFRS) versus German local GAAP. They examined a pre-post design and found an increase in the value relevance of earnings when firms change to IAS from German local GAAP.

One country at a time, studies on mandatory IFRS adoption that focus on value relevance are beginning to appear, and multiple country mandatory IFRS adoption studies focusing on value relevance are also starting to appear. Ahmed and Goodwin (2006) and Goodwin et al. (2008) indicate that aggregate differences between IFRS and local GAAP have no incremental information for stock price in Australia.

Christensen et al. (2007) and Horton and Serafeim (2010) report that earnings reconciliations have an incremental stock price relevance over local GAAP in the U.K. Wang (2008) discusses how IFRS net income reconciliation differences are positively associated with stock returns, a finding that is once again consistent with the incremental value relevance for IFRS earnings. All studies on mandatory adoption described above have use incremental value relevance.

Daske et al. (2008) investigated the impact of mandatory IFRS adoption on the costs in capital markets and reported that first time mandatory adopters experience a modest decrease in the cost of capital market. Their effects are stronger for countries where local GAAP differs more from IFRS.

Kim et al. (2015) conducted surveys and interviews to examine the costs and benefits of IFRS adoption from the perspective of financial information preparers. The overall result is that practitioners perceive the costs of adopting IFRS to be higher.
than the benefits. Han et al. (2016) reviewed prior literature and conducted a survey to examine whether the usefulness of financial information of Korean firms increased in terms of the international comparability, relevance, reliability, quality and accessibility. Foreign investment increased significantly in small firms listed on KOSDAQ after IFRS adoption, which may be partly due to the provision of IFRS-based financial information that reduced asymmetry in accounting information. Information users have indicated that IFRS adoption resulted in an increase in international convergence, which led to an improvement in the usefulness of financial statements, reduction in investment uncertainty, alleviation to the Korea Discount to a certain degree, and increase in the level of foreign investment.

In 2007, the Korean government announced the adoption of IFRS for Korean companies, effective from January 1, 2011, and the standards were named “Korean International Financial Reporting Standards” (K-IFRS). The adoption of IFRS in Korea provides a setting to study the effect of IFRS-based accounting standards on the quality of book value and earnings in a developing country.

While Korean local GAAP (K-GAAP) and IFRS were regarded to be highly consistent with one another, there were two major reasons to pursue the full adoption of IFRS: to achieve a globally uniform financial reporting system and, consequently, improve transparency and comparability and mitigate the ‘Korea Discount’, referring to undervalued stock prices of Korean firms.

The major changes in K-IFRS as consequence of adopting IFRS is the use of fair value accounting. The ultimate use of fair value accounting in IFRS adoption is perfect mark-to-market accounting (Ohlson, 2009). The movement towards fair value accounting from historical-cost accounting is expected to result in financial statements that are more relevant, credible, transparent and timely. Another attribute of K-IFRS is that it requires a greater level of disclosure. If more disclosure is required, any attempts to manage earnings can more easily be detected and reduced by internal monitoring bodies in a firm.

Book value and earnings that are high in quality should also be more value relevant, and high quality book value and earnings should have greater ability to explain the market value of companies. A number of studies investigating the quality of financial reporting use the value relevance of book value and earnings to measure the accounting quality (Cheng, Hsieh, and Yip, 2007; Lang, Raedy, and Wilson, 2006). These studies relate book value and earnings directly to stock prices. The association between book value and earnings and stock price suggests that book value and earnings are both relevant and reliable to investors (Barth, Beaver, and Landsman, 2001). Considering this background, this study proposes the following hypothesis.

**Hypothesis:** The value relevance of book value and earnings is higher after the adoption of K-IFRS based global accounting standards.

### III. Research design and sample

#### A. Model specification

This study estimates the following model to test the hypothesis that the value relevance of the book value and earning is higher after the adoption of K-IFRS. This model compares the value reliance of book value and earnings during the period before and after the adoption of K-IFRS in Korea. This study follows the price-earnings model, as used by Ohlson (1995), where prices are regressed on both the book value of the equity and earnings. According to Ohlson (1995), the value of a firm’s equity can be expressed as a function of its book value and earnings, as follows:

$$P_{it} = \alpha + \beta_1 \text{BV}_{it} + \beta_2 \text{EPS}_{it} + \epsilon_{it}$$  \hspace{1cm} (1)

where,

- $P_{it}$: the price of a share of firms i three months after fiscal year-end t.
- $\text{BV}_{it}$: the book value per share of firm i at the end of year t.
EPS<sub>i,t</sub>: the earnings per share of firm i during year t.
ε<sub>i,t</sub>: other value relevant information of firm i year t.

The value relevance of the book value and earnings is represented by the coefficient of these variables. The coefficient of the book value and earnings depends on how well a firm's book value and earnings can explain stock prices.

This study further extends an analysis by running a regression on the following extended model (2), which includes K-IFRS adoption as a dummy variable, and its interaction with book value and earnings:

\[ P_{i,t} = \alpha + \beta_1 BV_{i,t} + \beta_2 EPS_{i,t} + \beta_3 BV_{i,t} \times K\text{-IFRS} + \beta_4 EPS_{i,t} \times K\text{-IFRS} + \varepsilon_{i,t} \]  

where,
- \( P_{i,t} \): the price of a share of firms i three months after fiscal year-end t.
- \( BV_{i,t} \): the book value per share of firm i at the end of year t.
- \( EPS_{i,t} \): the earnings per share of firm i during the year t.
- K-IFRS: 1 if the financial statement is prepared under K-IFRS, 0 otherwise.
- \( \varepsilon_{i,t} \): other value relevant information of firm i for year t.

In this model, the coefficient of the interaction variables \( BV \times K\text{-IFRS} \) (\( \beta_3 \)) and \( EPS \times K\text{-IFRS} \) (\( \beta_4 \)) indicates whether the adoption of K-IFRS has a significant influence on the value relevance of book value and earnings.

This study offers a comparative comparison of the value relevance of the financial statements with the K-GAAP, the stock price, and the financial statements based on the new accounting standard (K-IFRS). In other words, if the regression coefficient of the interaction term between \( \beta_3 \) and \( \beta_4 \) in model (2) is significantly positive, then the accounting information by the new accounting standard (K-IFRS) has a greater value relation with the stock price. This explains the positive effect that the introduction of K-IFRS has in increasing the value relevance of accounting information.

**B. Data and sample selection**

Financial data from 2006 to 2015 was collected for firms listed on the Korean Stock Exchange, as obtained from the KIS-Value Database. The data excluded firms in the banking industry and due to other issues of administration to ensure heterogeneity. Financial institutions are different from general manufacturing companies in their financial statements and in the nature of their accounts. Therefore, we excluded those from the sample to be verified. The method to select these samples was also applied following the procedures use in many previous studies.

From the data, each firm’s financial year end was identified, and the data for the period five years before the adoption of K-IFRS and five years after the adoption of K-IFRS was used.

K-IFRS adoption became effective on January 1, 2011, and the first annual financial statements prepared using K-IFRS are dated 31 December, 2011. Data from annual financial statements dated 31 December, 2006 – 2010 are considered as the period before, and data from annual financial statements dated 31 December, 2011 – 2015 are considered as the period after K-IFRS adoption.

Finally, this study deletes firm-year observations that are outliers in the top and bottom 1% of independent variables. Table 1 shows 10,720 firm-year observations that were the final selections, as was explained in the aforementioned procedure.

| Selection criteria | Number of observations |
|--------------------|-----------------------|
| 1. Listed firms in non-banking industries, for which annual financial information is available in the KIS-Value Database from 2006 to 2015, excluding observations with omitted financial data and non-December firms. | 11,390 |
| 2. Top and bottom 1% of distributions of independent variables | (670) |
| Firm-year final selections for the empirical test. | 10,720 |

Table 1. Criteria to select the sample
IV. Results

A. Descriptive statistics

Table 2 provides descriptive statistics for the 10,720 firm-year observations and Pearson correlation coefficients between any two of the variables. The descriptive statistics in Table 2 show the data of the total sample in a single group and two sub-groups (KOSPI and KOSDAQ), divided into KOSPI and KOSDAQ.

Table 2. Univariate statistics for sample observations and variable definitions

Panel A: Description of sample

| Variables | Mean   | Std. Dev. | Min   | Median  | Max    |
|-----------|--------|-----------|-------|---------|--------|
| Total sample: (N=10,720) |        |           |       |         |        |
| P         | 17,931 | 46,480    | -1,728| 4,932   | 1,158,000 |
| BV        | 18,370 | 37,088    | 199   | 5,431   | 532,263  |
| EPS       | 1,151  | 3,529     | -24,167| 277     | 34,614   |
| K-IFRS    | 0.500  | 0.500     | 0     | 1       | 1       |
| Sub-group: KOSPI (N=4,935) |        |           |       |         |        |
| P         | 29,528 | 64,130    | 96    | 8,560   | 1,158,000 |
| BV        | 31,929 | 49,808    | 210   | 12,120  | 532,263  |
| EPS       | 2,029  | 4,730     | -18,685| 584     | 34,614   |
| K-IFRS    | 0.498  | 0.500     | 0     | 0       | 1       |
| Sub-group: KOSDAQ (N=5,785) |        |           |       |         |        |
| P         | 8,039  | 16,816    | -1,728| 3,800   | 364,300  |
| BV        | 6,804  | 11,929    | 199   | 3,793   | 183,893  |
| EPS       | 402    | 1,668     | -24,167| 172     | 30,583   |
| K-IFRS    | 0.502  | 0.500     | 0     | 1       | 1       |

Panel B: Pearson correlation coefficients for regression variables

| Variables | P   | BV   | EPS   | K-IFRS |
|-----------|-----|------|-------|--------|
| Total sample: (N=10,720) |     |      |       |        |
| P         | 1   |      |       |        |
| BV        | 0.576*** | 1    |       |        |
| EPS       | 0.597*** | 0.628*** | 1    |        |
| K-IFRS    | 0.069*** | 0.043*** | -0.050*** | 1    |
| Sub-group: KOSPI (N=4,935) |     |      |       |        |
| P         | 1   |      |       |        |
| BV        | 0.545*** | 1    |       |        |
| EPS       | 0.577*** | 0.601*** | 1    |        |
| K-IFRS    | 0.084*** | 0.065*** | -0.080*** | 1    |
| Sub-group: KOSDAQ (N=5,785) |     |      |       |        |
| P         | 1   |      |       |        |
| BV        | 0.527*** | 1    |       |        |
| EPS       | 0.578*** | 0.639*** | 1    |        |
| K-IFRS    | 0.086*** | 0.028** | -0.002  | 1    |

a) Variable definitions:
P\_i\_t: the price of a share of firms i three months after fiscal year-end t.  
BV\_i\_t: the book value per share of firm i at the end of year t.  
EPS\_i\_t: the earnings per share of firm i during the year t.  
K-IFRS: 1 if the financial statement is prepared under K-IFRS, 0 otherwise.  
b) ***, **, *: Significant at the 0.01, 0.05, 0.1 levels.
KOSDAQ by stock market.

Panel A shows that the statistics of the total sample and the sub-group sample according to stock markets (KOSPI and KOSDAQ). Panel A shows that there is much difference in the variables of P, BV, EPS between the KOSPI and KOSDAQ markets. The P, BV, EPS of KOSPI market observations are greater than that of the KOSDAQ market observations.

Panel B reports the correlation matrix between the variables included in the regression model. The correlation matrix shows that the Person correlation between P and the other variables used in the model are relatively significant.

**B. Regression to test the impact of K-IFRS adoption on the value relevance**

Table 3 and Table 4 present the test results. The results are mostly consistent with our hypothesis. As predicted, the value relevance of the book value and the earnings is higher after the adoption of K-IFRS. In Table 3, the differences in the value relevance between Koran local GAAP and K-IFRS are reflected in coefficient differences for the book value ($\beta_1$) and earnings ($\beta_2$).

As shown in Table 3, the BV coefficient is 0.200 (Pre K-IFRS) and 0.478 (Post K-IFRS), and the coefficient for EPS is 5.392 (Pre K-IFRS) and 5.963 (Post K-IFRS), respectively. Both coefficients are significant at the 1% level with a t-value of 13.62 (BV), 41.87 (EPS) in the pre-K-IFRS sample and 27.79 (BV), 28.47 (EPS) in the post-K-IFRS sample. These results show that the BV and EPS reported during the K-IFRS period have higher value relevance compared to BV and EPS reported in the pre-K-IFRS period.

Further, to determine whether the difference between the value relevance of BV and EPS during the two periods is significant, this study refers to the result from the estimation of model (2). The coefficient of the interaction variable BV*K-IFRS ($\beta_3$) and EPS*K-IFRS ($\beta_4$), indicates whether there is a significant increase in the value relevance of BV and EPS between the two periods.

The results show that the interaction variable, BV*K-IFRS ($\beta_3$) and EPS*K-IFRS ($\beta_4$) is positively significant at the 1% and 5% level with t-statistics 12.26 ($\beta_3$) and 2.25 ($\beta_4$) in the total sample. In the KOSPI sample, the result shows that BV*K-IFRS ($\beta_3$) and EPS*K-IFRS ($\beta_4$) are positively significant at the 1% and 5% level with t-statistics 8.06 ($\beta_3$) and 2.13

| Table 3. OLS Regressions on the value relevance in the Ohlson basic model $P_{i,t} = \alpha + \beta_1 BV_{i,t} + \beta_2 EPS_{i,t} + \varepsilon_{i,t}$ (1) |
|---|---|---|---|---|
| Variables | Pred. Sign | Coefficients (t-value) |  |
|  |  | Pre K-IFRS(Local Korean GAAP) | Post K-IFRS(IFRS) |
| BV | (+) | 0.200(13.62) *** | 0.478(27.79) *** |
| EPS | (+) | 5.392(41.87) *** | 5.963(28.47) *** |
| Adjusted R² | | 0.5122 | 0.4143 |
| F-Stats | | 2812.38 *** | 1898.37 *** |
| Number of observations | | 5,355 | 5,365 |

**Sub-group**

| Variables | Pred. Sign | KOSPI | KOSDAQ | KOSPI | KOSDAQ |
|  |  | BV | EPS | BV | EPS |
|  | (+) | 0.188(8.68) *** | 0.107(4.24) *** | 0.444(16.86) *** | 0.583(21.52) *** |
|  | (+) | 5.433(29.63) *** | 4.128(22.19) *** | 6.347(19.47) *** | 3.877(20.42) *** |
| Adjusted R² | | 0.5066 | 0.248 | 0.3794 | 0.4823 |
| F-Stats | | 1271.00 *** | 475.65 *** | 752.59 *** | 1353.77 *** |
| Number of observations | | 2,475 | 2,880 | 2,460 | 2,905 |

a) Variables are defined in Table 2.

b) ***, **, *: Significant at the 0.01, 0.05, and 0.1 levels, respectively.
Table 4. OLS Regressions on the value relevance of the Ohlson extended model

\[ P_{i,t} = \alpha + \beta_1 BV_{i,t} + \beta_2 EPS_{i,t} + \beta_3 KV_{i,t} + \epsilon_{i,t} \]  

(2)

| Variables         | Pred. sign | Coefficients (t-value) | Total sample | Sub-groups divided by stock markets |
|-------------------|------------|------------------------|--------------|-------------------------------------|
|                   |            |                        | KOSPI        | KOSDAQ                              |
| BV                | (+)        | 0.189(9.08)***         | 0.169(5.37)***| 0.117(4.52)***                     |
| EPS               | (+)        | 5.396(28.75)***        | 5.534(19.55)***| 4.116(20.45)***                     |
| BV*K-IFRS         | (+)        | 0.296(12.26)***        | 0.288(8.06)***| 0.456(13.84)***                     |
| EPS*K-IFRS        | (+)        | 0.568(2.25)**          | 0.817(2.13)** | -0.213(-0.80)                       |
| Adjusted R²      |            | 0.4432                 | 0.4162       | 0.4078                              |
| F-Stats           |            | 2133.93***             | 880.55***    | 996.65***                           |
| Number of observations |        | 10,720                 | 4,935        | 5,785                               |

a) Variables are defined in Table 2.
b) ***, **, *: Significant at the 0.01, 0.05, and 0.1 levels, respectively.

In the KOSDAQ sample, BV*K-IFRS (\( \beta_3 \)) is positively significant at the 1% level with t-statistics 13.84 (\( \beta_3 \)), but EPS*K-IFRS (\( \beta_4 \)) is not significant.

Thus, it seems that K-IFRS-based BV and EPS explain more of the variation in the share values. The higher value relevance of the book value and earnings during the post K-IFRS period is confirmed through a further analysis using model (2), and these results support the hypothesis of this study.

V. Conclusions

This study investigates the impact of K-IFRS adoption on the value relevance of book value and earnings. This study focused on the attributes of a higher quality of book value and earnings, higher value relevance of the book value and earnings. These results show that K-IFRS adoption is associated with higher quality of the reported book value and earnings.

These results are based on Korean stock market data during 2006-2015. The value relevance of the book value and earnings during the period before and after the adoption of K-IFRS suggests that there is a possibility that investors can more accurately value shares. Further studies can also consider additional attributes related to accounting information quality, such as earning conservatism, predictability, persistence and timeliness.

These findings contribute to value relevance research by providing general evidence that book value and earnings based on K-IFRS in Korea have higher value relevance than that based on local Korean GAAP. For policymakers, such results suggest that a stricter adoption of IFRS is necessary to improve the usefulness of the accounting information. This study has also contributed to validating that introducing IFRS improves the usefulness of accounting information. It also indicates that IFRS adoption can ensure consistency in Korea with international accounting standards and improve the credibility of accounting information. Thus, this research has directly addressed the impact of IFRS adoption on the quality of financial reporting in an emerging market.

The limitation of this study is that the quality of accounting information is evaluated only using the value relevance with the stock price, but the quality of the accounting information can be studied using other measures besides the value relevance to stock price.
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