

A COMPARISON OF THE VALUE RELEVANCE ACCOUNTING INFORMATION FROM IMPLEMENTATION OF XBRL (CASE STUDY IN KOREA)

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ABSTRACT

eXtensible Business Reporting Language (XBRL), which is under implementation process in Indonesia, motivates this study to examine the comparison of value relevance accounting information between pre- and post period of XBRL implementation in Korea. Korea became an object of study because it has been implemented mandatory XBRL since October 2007. Multiple regression analysis was employed to examine this study. The results show that value relevance accounting information in period 2008-2013 was higher than in period 2001-2006. It indicates increasing in value relevance of accounting information after implementation of XBRL in Korea. It supported by evidence of increasing adjusted R² and EPS coefficient in the period after implementation of XBRL.

Keywords: XBRL, Value Relevance, Korea, Accounting Information.

1. INTRODUCTION

Increasing the number of companies listed on Indonesian Stock Exchange (IDX), dynamics and complexity of corporate actions, as well as the accretion type of report and the disclosure of information received indicates developments in the capital market of Indonesia (BEI, 2010). These developments contribute to the complexity of the users of financial information in analyzing a company. Financial statement information that is accessible both via company web and idx.co.id is no different from information that users get from financial statement physically. Both of them are can't be processed directly by analysts to be analyzed. Based on research data forester in 2002, the company paid employees \$404 billion, to search and retyping information, which is 11% of all wages, paid in the United States (Farewell dan Pinsker, 2005). It shows inefficiencies in terms of time and cost in the presentation of financial statements by a long way.

Problems in the analysis process of presentation of financial statement information enable the data input error, thereby reducing the quality of financial information. Information from the financial statements can be used by udders quickly and efficiently when the information of financial statement presented in similar language format and business intelligence.¹ Integrating on standardization of reporting is an indispensable solution to simplify the regulator and investors in accessing and processing data.

¹ Business intelligence is the process of making large amounts of data, analyze the data, and presents a set of reports which are the core of the data to base business actions, thus allowing management to make fundamental decisions everyday business (Stackowiak *et al.*, 2007).

In 2009, the Securities and Exchange Commission (SEC) issued a rule of used interactive data to improve the quality of financial reporting. Companies in United States, both of prepare financial statement using GAAP and IFRS; have to provide financial reports in the eXtensible Business Reporting Language (XBRL) form to SEC. XBRL is a new technology that facilitates the direct search and the simultaneous presentation of the financial statements and information related footnotes (Hodge dan Maines, 2004). By using the identification tag to business information, XBRL able to clarify the identification and benchmarking information with other companies. American Institute of CPAs (AICPA) puts XBRL as one of the top ten technologies for professional accountants and audit (Peng and Chang, 2010). XBRL is believed to improve the accuracy, reliability, and efficiency of electronic communication of business data finance

XBRL has been implemented in several countries in the world either mandatory or voluntary. One of the countries that have implemented mandatory XBRL is Korea. In October 2007, Korea requires all public companies to report their financial statements in XBRL form. The benefits of implementing XBRL have been proven by several studies. Hao et al (2014) proved that the voluntary implementation of XBRL in the United States affects the cost of equity capital is negative. Yoon et al (2011) have shown the impact of the adoption of XBRL mandatory to asymmetry of information in Korea. Results from these studies showed a negative correlation between the adoption of XBRL and asymmetry of information. Alles and Piechocki (2012) found that XBRL has the potential to improve governance.

XBRL implementations provide solutions to problems that arise in the financial reporting system as long as validation data manually, conversion and extract large amounts of data. XBRL enables users of financial information to analyze the data more easily. Through the interoperability of data, XBRL allows users to make comparisons and analysis of information reporting some business firms. Settlement of these problems is very important that the accounting information to users of financial statements can be more relevant. Accounting information is the information content that can be obtained from the company's financial statements to make available data that can be used for the analysis of investment decisions by investors.

Relationship between accounting information and market participants such as users of financial information is known as concept of value relevance accounting information. This concept focuses on how relevant the accounting information contained in the financial statements in delivering value benefits to its users for decision making. Cao (2005) states that the accounting information is statistically linked to the value of the stock market which is predicted to have value relevance.

Based on the issues related to the implementation of XBRL and XBRL implementation plan in Indonesia, researchers wanted to examine the relevance of the resulting XBRL financial information to the market price after the implementation of XBRL. The relevance is later compared with the period before the implementation of XBRL. Researchers took the value relevance as a research object in order to contribute different from previous studies. Thus, this study is expected to provide empirical evidence related to the effect of the implementation of XBRL to the value relevance in Korea and as an input and considerations related to decisions and policies in the process of implementation of XBRL in Indonesia.

2. LITERATURE REVIEW

One of the qualitative characteristics of a conceptual framework that is the relevance. Accounting information must be able to make a difference in a decision to be relevant. The relevant information must have a value of feedback and predictive value. Accounting information must also have substance timely in order to remain relevant. An information should be presented to the user information before that information loses its capacity to influence decisions.

Basically, the most significant role of the implementation of XBRL to facilitate the distribution and accounting is the process of analysis of financial statement information. In addition, XBRL also allows issuers to disseminate information through the company's internal XBRL system in a timely manner (real time) (Lindfors, 2012; Barton, 2003). XBRL reporting on time in accordance with the criteria of relevance that are expected to increase transparency (Hannon, 2002) and the quality of information through improved user access to information.

Transparency and quality of information that is getting better able to reduce the information asymmetry between investors and management, thereby reducing transaction costs which then causes the cost of capital will be lower. It indicates that the implementation of XBRL able to lower the cost of capital issuers (Hao et al., 2014). Low capital costs were able to increase the market value of the company.

From the investor side, XBRL facilitates data access and data analysis process. XBRL allows the engine to automate the search and retrieval of complete and relevant information in the financial statements that enable users to focus on the results of the data analysis rather than data collection process (Vasarhelyi et al., 2012). XBRL is able to perform interoperability² of data that can simplify the analysis. Financial information users can download software that can improve the quality of the analysis. The software is connected with the data already available on the Internet then began analyzed (Pinsker, 2003).

In the literature value relevance, attention is given to the extent to which the accounting information to meet the needs of investors. Accounting information can be regarded as a product of a system that relies on rules or standards (Core et al., 2003). Francis and Schipper (1999) mentions that the correlation between accounting information and market value or return the information used by investors.

Information that relevant and complete can be used as a basis for economic decision making. However, the number of accounting information makes the process a lot of data collection difficult for activity analysis and decision making. For example, when an investor wants to obtain information related to the company's fixed assets, investors will see the fixed assets in the statement of financial position and explanatory information in the disclosure. It will certainly take a lot of time and effort. Especially if investors require more data, investors will give more effort to get the data for analysis purposes. To overcome this, efforts are needed to increase the ease of data analysis process.

FASB defines the relevant accounting information in SFAC No. 2 as information that can make a difference in the decision to add a decision-making capacity to predict or give feedback on previous expectations. The implementation of XBRL is expected to increase the value relevance of accounting information by adding capacity in the decision to predict or give feedback on previous expectations.

H₁: An increase in the value relevance of accounting information required after the implementation of XBRL in Korea.

² Interoperability is the ability to exchange and use data..

3. METHODOLOGY

3.1. Sample and Data Selection

This study uses empirical data since 2001 up to 2013 as the period except 2007. October 2007 is the beginning of XBRL implementation, that's why this study does not use 2007 to avoid the effect of transition of XBRL implementation. The Sample for investigating hypothesis is selected based on the following criteria:

- 1) Firms are listed on the KOSPI or KOSDAQ;
- 2) Firms are continuously listed on KOSPI or KOSDAQ³ during 2001-2013;
- 3) Firm specific data are available for value relevance calculation;
- 4) Firm specific data has positif earning and book value;

Table 1 present the outcomes of applying the sample selection criteria to examine hypothesis respectively.

Table 1: Sample Selection

Criteria	Total
Publicly listed companies in KRX during 2001-2013	707
Firms are not continuously listed on the KRX during 2001-2013	(244)
Firms specific data are unavailable	(266)
Firms with positive earnings and book value	(133)
Final sample	64
The number of observations (64 x 6)	384
Outlier data	(84)
The number of final observations	300

3.2. Variabel definitions and measurements

3.2.1. Independent Variabel

3.2.1.1. *Earning per Share (EPS)*

Ernest dan Oscar (2014) states that EPS affect the value relevance because of the value will rise according to company performance though it may be accrued. The formula to compute the EPS is as follows:

$$EPS_{i,t} = \frac{\text{Net Income}_{i,t}}{\text{Outstanding Shares}_{i,t}}$$

where,

$EPS_{i,t}$: Earning per share of firm i for period t ;

$\text{Net Income}_{i,t}$: Net income of firm i for period t ;

$\text{Outstanding Shares}_{i,t}$: Number of Outstanding Shares firm i for period t .

3.2.1.2. *Book Value per Share*

One of criteria about company performance assessed based on the performance of stock is book value per share and market value of common stock. In a condition, market value of company can be expressed as the

³ Yoon *et al.*, (2011) states that a public company listed on the KOSPI and KOSDAQ must fill in the form of XBRL financial reports to the DART system since October 2007.

weighted average of book value and company's earnings (Feltham & Ohlson, 1995; Ohlson, 1995). It is as the basis of study about value relevance of accounting. The formula of book value per share is as follows:

$$BVE_{i,t} = \frac{\text{Book value of equity}_{i,t}}{\text{Outstanding share}_{i,t}}$$

Where,

$BVE_{i,t}$: Book value per share of firm i on period t ;

book value of equity _{t} : Book value of equity of firm i on period t ;

outstanding Share _{i,t} : Outstanding share of firm i on period t .

3.2.2. Control Variabel

To avoid the possibility of failing to control the relationship in a regression model of the price, it is necessary to adequately control variables (Ota, 2001). This study uses two control variables, company size and leverage. Variable of company size measured by log of total assets (Hassan, 2004 ; Anandarajan & Hasan, 2010; Shamki, 2012,2013; Shamki dan Rahman, 2013).

Beaver (1998) found that balance sheet that show an information about credit decisions and liquidity value may facilitate book value of equity to play an important role in the assessment of the company with debt levels higher than companies with low debt levels. Companies with high debt levels allow management to manage earnings which caused decreasing of earning quality than company with low debt level thus allowing an increasing risk of operation. leverage variabel is measure by total liabilities per total assets (Shamki, 2012, 2013).

3.2.3. Dependent Variabel

Dependent variable in this study is stock market price after 3 months of the closure date of financial period. It aims to find out how an investor outstanding accounting information circulating in influencing preference in investing.

3.3. Empirical Model

The model used in this study is the pricing model because stock prices reflect the cumulative effect of the earnings information and the slope coefficient is less biased than the model return (Kothari and Zimmerman, 1995). It's more accurate to reflect the relevance of the information at the time of valuation of market conditions (Damodaran 2006). The pricing model used to refer to the simplification of the model used in the study Ohlson Halonen et al. (2013) combined with Shamki and Rahman (2013). The equation will be used to test the hypothesis is as follows:

$$P_{i,t+1} = \alpha + \beta_1 \text{EPS}_{i,t} + \beta_2 \text{BVE}_{i,t} + \beta_3 \text{SIZE}_{i,t} + \beta_4 \text{LEV}_{i,t} + \varepsilon_{i,t}$$

where:

$P_{i,t+1}$ = Share price of firm i on the third month for period $t+1$

$\text{EPS}_{i,t}$ = earning per share firm i for period t

$\text{BVE}_{i,t}$ = book value per share firm i for period t

$\text{SIZE}_{i,t}$ = log from total assets firm i for period t

$\text{LEV}_{i,t}$ = Total liabilities per total assets firm i for period t

α = Constanta

$\beta_1 - \beta_4$ = Regression coefficients

$\varepsilon_{i,t}$ = Residual firm i for period t

The hypothesis of this study will be tested using multiple linear regressions to the data period before and after the implementation of XBRL separately. Research related to the value relevance in general use adjusted R^2 to see changes in the value relevance (see Halonen et al., 2013; Shamki and Rahman, 2013; Dontoh et al., 2004). If the value of adjusted R^2 increase for the period after XBRL impementation is then shows an increase in the value relevance of accounting information. Otherwise, there is no difference or even a decrease in the adjusted R^2 ; it indicates a decrease in the value relevance after the implementation of XBRL.

4. EMPIRICAL RESULTS

Descriptive statistics for variable used in testing the hypothesis is summarized in Table 2. Stock prices in the period after the implementation of XBRL are higher than before the implementation of XBRL. It can be seen both at the minimum value (from 143 to 540) and at the maximum (from 60 500 to 207 500). The standard deviation of stock prices in both the period before and after the implementation of XBRL is higher than the average value. In addition to the share price, the standard deviation of the variable EPS and BVE is also higher than the average value. It indicates that the distribution of the stock price data varies in the period before and after the implementation of XBRL. In contrast to the standard deviation, variable leverage and size of the company is lower than average. It indicates that the data of leverage and size variable is less variable during the period before and after the implementation of XBRL

Table 2: Descriptive Statistics

Variabel	N	Minimum	Maximum	Average	Standard Deviation
Sebelum Penerapan XBRL					
$P_{i,t+1}$	300	143	60.500	7,349.88	8,352.36
$EPS_{i,t}$	300	14	13,408	1,202.5	1,553.46
$BVE_{i,t}$	300	670	462,597	16,577.05	37,623.13
$Leverage_{i,t}$	300	0,06	0.96	0.4341	0.199
$Size_{i,t}$	300	4.26	8.17	5.46	0.7
Sesudah Penerapan XBRL					
$P_{i,t+1}$	300	540	207,500	16,949.59	19,842.23
$EPS_{i,t}$	300	15	39,163	2,119.26	3,386.024
$BVE_{i,t}$	300	748	734,645	54,523.10	103,936.24
$Leverage_{i,t}$	300	0.06	0.98	0.4107	0.21
$Size_{i,t}$	300	4.13	8.49	5.73	0.72

The results of analyzing the value relevance accounting information of XBRL implementation period 2001-2006 and 2008-2013 appear in Table 3.

Table 3: Results of Multiple Linear Regression

Variabel	Sebelum		Sesudah	
	Koefisien	Probabilitas	Koefisien	Probabilitas
Konstanta	-12,351	0,000	-7,169	0,000
EPS _{i,t}	22,031	0,000	53,699	0,000
BVE _{i,t}	18,514	0,000	5,541	0,000
Leverage _{i,t}	-7,536	0,000	-3,326	0,001
Size _{i,t}	13,733	0,000	8,433	0,000
F-statistik	592,61	0,000	860,247	0,000
Jumlah Observasi	300		300	
R ²	0,889		0,96	
Adjusted R²	0,888		0,92	

Regression testing results show that each of the variable EPS, BVE, Lev, and SIZE significantly influence stock prices both in the period before and the period after the implementation of XBRL. It can be seen from the t-test probability of each variable in both the period before and after the implementation of XBRL less than 0.05. In addition, the independent variables and controls together significantly influence stock prices both in the period before and the period after the implementation of XBRL. It is seen in the F-test probability of both the period before and after the implementation of XBRL less than 0.05.

The coefficient of the variable EPS, BVE, and firm size (SIZE) both in the period before and the period after the implementation of XBRL, each showed positive and significant (p-value = 0.00). These results indicate that each variable EPS, BVE, and SIZE positively associated with stock prices. The opposite occurs in variable leverage which has a negative coefficient in the period before and after the implementation of XBRL.

Testing is done by performing regression test well in the period before and after the implementation of XBRL. The hypothesis in this study stated that an increase in the value relevance after the required the implementation of XBRL in Korea. Implementation of an integrated XBRL reporting system in Korea is expected to facilitate and enhance the ability of the analyst in the process of analyzing companies for investment purposes. The hypothesis would be supported if there is an increase in EPS and adjusted R² coefficient after the implementation of XBRL.⁴

Table 4 shows an increase in explanatory power in the period after the implementation of XBRL in comparison with the period before the implementation of XBRL. This is shown by the adjusted R² period after implementation of XBRL at 0.92 (92%) higher than the adjusted R² period before the implementation of XBRL in the amount of 0.88 (88%). In addition, the coefficient of EPS after implementation of XBRL (53.699) showed an increase compared to before the the implementation of XBRL (22.031). It indicates an increase in the value relevance of accounting information after the implementation of XBRL.

Regression test results indicate that the value relevance of accounting information in Korea has increased after the implementation of XBRL. Users of financial information were able to conclude the information underlying stock price with the better after the the implementation of XBRL. Relevance increased value because XBRL improve consumers'

⁴ See the research of Halonen et al., 2013; Shamki and Rahman, 2013; Dontoh et al., 2004 saw an increase in the value relevance of the increase adj. R-square. Research Zeng et al., 2015 saw an increase in the value relevance based on an increase in the coefficient of EPS.

ability to combine enterprise information with a variety of data and decision models. XBRL is also able to find relevant information, incorporating specific tag definitions and taxonomies that allow machines to understand the data.

XBRL support the analysis process for making investment decisions through advanced search capabilities to a variety of financial data. Investors can easily find and compare the data that has the same or similar tags. Tag identification of XBRL provide additional information to investors because metadata capable of defining the meaning of the data item. The implementation of XBRL has been done more than 7 years (starting October 2007) allows its users already familiar in the use of XBRL technology. Proficiency in the use of XBRL technology was one of the factors that make the user / analyst for the better in the analysis of the company.

5. CONCLUSION

This study examined the impact of XBRL implementation on the value relevance of accounting information in Korea. Hypothesis testing results showed an increase in adjusted R^2 in the period after the XBRL implementation from 0.88 becomes 0.92. Coefficient EPS also increased in the period after the implementation of XBRL into 53.699 from 22.031. Statistical test results showed that the hypothesis is supported. XBRL support the analysis process for making investment decisions through advanced search capabilities to a variety of financial data. Investors can easily find and compare the data that has the same or similar tags.

This study has some limitations, such as not controlling macroeconomic impacts that occur during the period of observation and research data is secondary. Secondary research data in this study showed that the study could not directly observe the effects of the use of XBRL for users in the analysis of the company. For future research, it can add control variables to control the influence of outside independent variable and direct observation approach in research such as questionnaires to analysts using XBRL.

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