

# ANALYSIS OF IMPLEMENTATION *EXTENSIBLE BUSINESS REPORTING LANGUAGE* (XBRL) ON THE MARKET PERFORMANCE AND INFORMATION ASYMMETRY

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**Abstract:** *This study aims to assess, learn and obtain evidence of whether there is a difference on the market performance and information asymmetry before and after the application of Extensible Business Reporting Language (XBRL) in the banking companies Indonesian listed in Indonesia Stock Exchange period 2015-2017. Market performance was measured by using a proxy Price Earning Ratio (PER) and Price Book Value (PBV). While the information asymmetry is measured by a proxy Bid Ask Spread. The study using by specific criteria (purposive sampling) and acquired 25 banking companies in the sample. The data used in this research is secondary data. The analytical method used is different test paired samples (paired sample t test). The results showed that there is a difference in market performance before and after the application of XBRL (Extensible Business Reporting Language) through the Price Book Value (PBV). This is evident from the significant value (2-tailed) of paired samples t-test Price Book Value (PBV) of less than 0.05 is equal to 0.029. Meanwhile for the variable information asymmetry indicate that there are differences on the information asymmetry before and after the application of XBRL (Extensible Business Reporting Language). This is evident from the significant value (2-tailed) of paired samples t-test Bid Ask Spreads less than 0.05 is equal to 0.008.*

**Key Words:** *Extensible Business Reporting Language (XBRL), Market Performance and Information Asymmetry.*

## 1. INTRODUCTION:

The financial report is one of the information resulting from the accounting process and was instrumental in the decision making so that the delivery of timely financial reporting is indispensable. The use of technology in the financial statements are considered very important. According to Hall & Singleton (2009) with the use of technology in the process of inputting data, it can automatically reduce the potential for error compared to the process of manual input. However, there are still some weaknesses in financial reporting, as yet available provision standardized format (PDF, Excel, or Word), have not provided a validation tool automatically lowering the quality of information and is not yet available tools to perform analysis report (analysis tools). Thus, in recent times the AICPA has developed a system financial reporting based *Extensible Business Reporting Language* (XBRL).

XBRL is reporting language based on XML that is used to improve efficiency, reliability and accuracy of financial reporting, XBRL can ensure accuracy, reliability, timeliness and speed of decision making to stakeholders (Ashoka & Abhishek, 2018). Transparency can help external users of financial reporting information so as to better understand the company's decision to increase performance (Wang, et al., 2014), According to Harmono (2009), the market performance is a measure of company performance as measured from the level of the stock return or return on long term investment the company's. The rate of return is expected to be seen from the market price is determined and adjusted by the rate of return is desirable for investors. Furthermore Dontoh, et al. (2014) revealed that the adoption of XBRL will significant effect on market performance during the period VFP (Voluntary Filing Program) than before adopting XBRL. Empirically, this is evidenced by the research Wanaputra & Harahap (2017), Wang, et al. (2014), Yu, et al. (2014) and Premuroso & Bhattacharya (2008) who found that the application of XBRL have a positive impact on market performance. However, there are few studies that are inconsistent with the above research. Research conducted by Suwardi & Tohang (2017) found conflicting results, where they found that the adoption of XBRL has no effect on performance. They argued that there are other factors that affect to application of XBRL as governance (corporate governance) companies.

In addition to comparing market performance before and after the application of XBRL, another yardstick used in the implementation of XBRL is to compare information asymmetry before and after the adoption of XBRL. Information asymmetry is a state where the agent has more information about the company and prospects in the future compared with principal, Application XBRL will be able to reduce processing costs and can improve the environmental

information enterprise to facilitate the aggregation of data more easily, so that smaller investors will have greater access to financial data than ever before (SEC 2009). Yoon et al. (2011) revealed that the adoption of XBRL can reduce information asymmetry in the Korean stock market. They argue that XBRL can improve the compatibility of integrated information in the information system and can increase transparency and quality of corporate disclosures than before the adoption of XBRL. Empirically this is evidenced by the research of Liu, et al. (2016), Tzu Yi, et al. (2016), Hannioui (2017) and Joung W. (2012) who found that the application of XBRL positive impact in reducing information asymmetry. However, research conducted by Blankespoor, et al. (2011) show that the impact of the adoption of XBRL resulted in a significant increase of the information asymmetry and also resulted in a decrease in the volume of stock trading.

In this study, researchers refers to the banking sector companies listed on the Indonesia Stock Exchange in 2014-2017. Banking sector was chosen as the research object because this sector consists of financial institutions are very important and greatly affect of the economy State's. Besides that, Bank Indonesia itself is the first institution to use XBRL in Indonesia. Martono (2004) states that a banking institution is one of the backbone of the economy's country because it has a function as a financial intermediary between parties who have the funds (surplus units) with the parties who need funding (deficit units). Due to the role of the banking sector in a country, so researchers are interested to take this sector as an object of research to examine the application of the Extensible Business Reporting Language (XBRL) on market performance and information asymmetry.

Based on the study above, the purpose of this study were (1) to assess, learn and obtain evidence of whether there is a difference in market performance before and after the application of the Extensible Business Reporting Language (XBRL) in the banking company in Indonesia, and (2) to assess, learn and obtain evidence of whether there is a difference in information asymmetry before and after the application of the Extensible Business Reporting Language (XBRL) in the banking company in Indonesia.

## **2. LITERATURE REVIEW AND HYPOTHESIS:**

### **A. Resources Based View Theory**

Barney (1991) explains that the Resource Based View theory regards the company as a collection of resources and strength of the company. Resource Based View theory focused on the company's ability to maintain a combination of resources that can not be owned or built in the same way by competitors. Differences in resources and capabilities to the company's competitors will give the company a competitive advantage.

### **B. Agency Theory**

Jensen and Meckling (1976) argued that the agency relationship is a contract which takes place between the manager (agent) to the owner of the company (the principal). Conflicts of interest between owners and agents because of possible agents do not always act in accordance with interest of the principal.

### **C. Extensible Business Reporting Language (XBRL)**

XBRL is reporting language based on XML that is used to improve the efficiency, reliability and accuracy of financial reporting. The data in XBRL format does not need to be converted from one application to another because the data is independent by using standard tags to each item of data (Farewell, 2006). XBRL can support data context of financial and non-financial so that differentiate XBRL from other financial format (Debreceeny et al., 2010). The use of standard tags in XBRL document specifically allows for the identification, automatic exchange and extraction of reliable financial information on a variety of software applications. XBRL can provide identification tags for financial facts.

### **D. Market Performance**

According to Anthony & Govindarajan (2005), the company's main goal is to maximize profit and shareholder value. Maximizing shareholder value is reflected in market performance. Gunawan & Mayangsari (2015) revealed that the market performance can provide maximum shareholder wealth when the company's stock price to rise. In particular, the measurement of market performance ratio that is commonly used is the Price Earning Ratio (PER) and Price Book Value (PBV). In the study Dontoh & Trabelsi (2014) found that the adoption of XBRL significant positive impact on the market performance during the period VFP (Voluntary Filing Program) than before adopting XBRL. Empirically this is evidenced by the research Wanaputra & Harahap (2017), Wang, et al. (2014), Yu, et al. (2014) and Premuroso & Bhattacharya (2008) who found that the application of XBRL have a positive impact on market performance than before applying the XBRL (Extensible Business Reporting Language). However, Suwardi & Tohang (2017) found conflicting results, where they found that the adoption of XBRL doesn't positive impact on performance. They argued that there are other factors that affect the application of XBRL as governance (corporate governance) companies. Therefore the results of previous studies are still not in line, then to the researchers wanted to examine the relationship between the application of XBRL(Extensible Business Reporting Language) to the market performance. Based on a review of literature on top and is supported by the results of previous research, it can be put forward hypotheses as follows:

H1 : There are differences in the market performance before and after the application of XBRL (Extensible Business Reporting Language).

**E. Information Asymmetry**

According Pydick & Rubinfield (2012) information asymmetry is "one side of the negotiation process has better information than the other". From such understanding can be seen that the information asymmetry will occur when there are two parties have different information about when it will make the negotiation process as between prospective sellers and prospective buyers an investment. Yoon, et al., (2010) revealed that adoption of XBRL can reduce the information asymmetry in the Korean stock market. Adoption of XBRL can reduce the time and cost of company information in the stock market and to improve the compatibility of the information in the integration between different information systems than before the adoption of XBRL. Empirically this is evidenced by the research of Liu, et al. (2016), Tzu Yi, et al. (2016), Hannioui (2017) and Joung W. (2012) who found that the application of XBRL positive impact in reducing information asymmetry. However, Blankespoor, et al. (2011) find conflicting results, where they found that the impact of the adoption of XBRL resulted in a significant increase of the information asymmetry and also decrease in the volume of stock trading. Based on a review of literature on top and is supported by the results of previous research, it can be put forward hypotheses as follows:

H2 : There are differences in the information asymmetry before and after the application of XBRL (Extensible Business Reporting Language).

**3. METHODOLOGY:**

This study is a causal-comparative (Kuncoro, 2009). The population in this study are all banking sector companies listed on the Indonesia Stock Exchange in 2014-2017. Sampling was done by the method of "purposive sampling", namely the technique of determining the sample with certain criteria whose value will be able to provide maximum data in accordance with the research objectives (Sekaran, 2014). In period 2014-2017, there are 43 companies listed banking sector in Indonesia Stock Exchange. Results of purposive sampling, in accordance with the criteria established, obtained samples are 25 companies. This study tested the market performance and information asymmetry before and after the adoption of XBRL by using paired sample t-test.

**4. RESULT AND DISCUSSION:**

**A. Descriptive Statistics Analysis Market Performance**

Market performance in this study was measured by using a ratio of Price Earning Ratio (PER) and Price Book Value (PBV). Results of descriptive statistical analysis of market performance before and after the application of XBRL can be seen in table 4.1 below.

**Table 4.1**  
**Descriptive Statistics Analysis Market Performance**

Variables	N	Before the Application of XBRL				After the Application of XBRL			
		Min	Max	Mean	Std. Deviation	Min	Max	Mean	Std. Deviation
<i>Price Earning Ratio</i>	50	-14.21	114.75	20.4208	26.66418	-66.34	141.14	18.8490	33.21649
<i>Price Book Value</i>	50	0.07	2.49	0.9256	0.57547	0.05	3.40	1.1836	0.73048

Based on table 4.1, Price Earning Ratio (PER) on a banking company before the implementation of XBRL has a minimum and maximum value of -14,21 and 114,75 with the average and standard deviation of 20,4208 and 26,66418. While Price Earning Ratio (PER) after application of XBRL has a minimum and maximum value of -66,34 and 141,14 with the average and standard deviation of 18,8490 and 33,21649. As for the minimum and maximum values Price Book Value (PBV) in the banking company before the implementation of XBRL of 0,07 and 2,49 with the average and standard deviation of 0,9256 and 0,57547. As for Price Book Value (PBV) after application of XBRL has a minimum and maximum value of 0,05 and 3,40 with average and standard deviation of 1,1836 and 0,73048.

**B. Descriptive Statistics Analysis Information Asymmetry**

Information asymmetry in this study was measured by using a ratio Bid Ask Spread. Results of descriptive statistical analysis of information asymmetry before and after the application of XBRL can be seen in table 4.2 below.

**Table 4.2**  
**Descriptive Statistics Analysis Information Asymmetry**

Variables	N	Before the Application of XBRL				After the Application of XBRL			
		Min	Max	Mean	Std. Deviation	Min	Max	Mean	Std. Deviation
<i>Bid Ask Spread</i>	50	0.13	5.03	0.9532	0.90655	0.15	0.99	0.5580	0.25448

Based table 4.2, Bid Ask Spread the banking company before the implementation of XBRL has a minimum and maximum value of 0,13 and 5,03 with the average and standard deviation of 0,9532 and 0,90655. While Bid Ask Spreads after the adoption of XBRL has a minimum and maximum value of 0,15 and 0,99 with the average and standard deviation of 0,5580 and 0,25448.

**C. Normality Test**

Normality test is done to determine the normal distribution of data population or not. When the normal distribution of data, it can be used parametric statistical tests. The method used to test the normality of data is the method of “One Sample Kolmogorov-Smirnov Test”. Here's a table that presents the results of the test for normality of data Price Earning Ratio (PER), Price Book Value (PBV) and Bid Ask Spreads using the “One Sample Kolmogorov-Smirnov Test”.

**Table 4.3**  
**Normality Test Kolmogorov Smirnov Before the Application of XBRL**

One-Sample Kolmogorov-Smirnov Test				
		<i>Price Earning Ratio</i>	<i>Price Book Value</i>	<i>Bid Ask Spread</i>
N		50	50	50
Normal Parameters <sup>a</sup>	Mean	20.4208	.9256	.9532
	Std. Deviation	26.66418	.57547	.90655
Most Extreme Differences	Absolute	.289	.121	.219
	Positive	.289	.121	.219
	Negative	-.193	-.069	-.182
Kolmogorov-Smirnov Z		2.041	.857	1.549
Asymp. Sig. (2-tailed)		.000	.455	.017
a. Test distribution is Normal.				

Based on table 4.3 above, the value of the Kolmogorov-Smirnov for data Price Earning Ratio (PER), Price Book Value (PBV) and Bid Ask Spreads prior to the application of XBRL has a value > 0,05, each amounting to 2,041, 0,857 and 1,549. This indicates that the data in period before the application of XBRL in this study normally distributed, so as to test the hypothesis can use parametric statistical tests Paired Sample T-Test.As for the normality test results in period after the adoption of XBRL can be seen in the table below :

**Table 4.4**  
**Normality Test Kolmogorov Smirnov After the Application of XBRL**

One-Sample Kolmogorov-Smirnov Test				
		<i>Price Earning Ratio</i>	<i>Price Book Value</i>	<i>Bid Ask Spread</i>
N		50	50	50
Normal Parameters <sup>a</sup>	Mean	18.8490	1.1836	.5580
	Std. Deviation	33.21649	.73048	.25448
	Absolute	.276	.179	.120

Most Extreme Differences	Positive	.276	.179	.120
	Negative	-.203	-.076	-.106
Kolmogorov-Smirnov Z		1.950	1.267	.851
Asymp. Sig. (2-tailed)		.001	.081	.463
a. Test distribution is Normal.				

Based on table 4.4, the value of the Kolmogorov-Smirnov for data Price Earning Ratio (PER), Price Book Value (PBV) and Bid Ask Spread after adoption of XBRL also has a value > 0,05, each amounting to 1,950, 1,267 and 0,851. This indicates that the data in period after the adoption of XBRL in this study also normally distributed, so as to test the hypothesis can use parametric statistical tests Paired Sample T-Test.

**D. Hypothesis Testing**

- **Paired Sample T-Test Price Earning Ratio (PER)**

The results of this test is to see Price Earning Ratio (PER) before and after the adoption of XBRL. The results of paired samples t-test were as follows :

**Table 4.5**  
**Paired Sample T-Test Price Earning Ratio (PER) Before and After Implementation of Extensible Business Reporting Language (XBRL)**  
**Paired Samples Test**

		Paired Differences				T	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Price Earning Ratio Sebelum XBRL - Price Earning Ratio Setelah XBRL	1.57180	41.89072	5.92424	-10.33341	13.47701	.265	49	.792

In accordance with the decision making criteria for testing the hypothesis, if the value is significantly smaller than 0,05 (sig < 0,05) then the hypothesis accepted and vice versa if the value is significantly greater than 0,05 (sig > 0,05) hypothesis rejected. Based on table 4.5 shows t-count < t-table that is equal to 0,265 < 2,010 with a significance value of 0,792. Because sig > 0,05 it can be concluded that H<sub>a</sub> rejected, which means that there is no significant difference between the value Price Earning Ratio (PER) before and after the application of XBRL in banking companies listed in Indonesia Stock Exchange.

- **Paired Sample T-Test Price Book Value (PBV)**

The results of this test is to see Price Book Value (PBV) before and after the adoption of XBRL. The results of paired samples t-test were as follows :

**Table 4.6**  
**Paired Sample T-Test Price Book Value (PBV) Before and After Implementation of Extensible Business Reporting Language (XBRL)**  
**Paired Samples Test**

		Paired Differences				T	Df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Price Book Value Sebelum XBRL - Price Book Value Setelah XBRL	-.25800	.81067	.11465	-.48839	-.02761	-2.250	49	.029

In accordance with the decision making criteria for testing the hypothesis, if the value is significantly smaller than 0,05 ( $\text{sig} < 0,05$ ) then the hypothesis accepted and vice versa if the value is significantly greater than 0,05 ( $\text{sig} > 0,05$ ) hypothesis rejected. Based on table 4.6 shows t-count  $>$  t-table that is equal to  $2,250 > 2,010$  with a significance value of 0,029. Because  $\text{sig} < 0,05$  it can be concluded that  $H_a$  accepted, which means that there is a significant difference between the value Price Book Value (PBV) before and after the application of XBRL in banking companies listed in Indonesia Stock Exchange.

• **Paired Sample T-Test Information Asymmetry (Bid Ask Spread)**

The results of this test is to see Bid Ask Spread before and after the adoption of XBRL. The results of paired samples t-test were as follows :

**Table 4.7**  
**Paired Sample T-Test Bid Ask Spread Before and After Implementation of Extensible Business Reporting Language (XBRL)**  
**Paired Samples Test**

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Bid Ask Spread Sebelum XBRL - Bid Ask Spread Setelah XBRL	.39520	1.01755	.14390	.10602	.68438	2.746	49	.008

In accordance with the decision making criteria for testing the hypothesis, if the value is significantly smaller than 0,05 ( $\text{sig} < 0,05$ ) then the hypothesis accepted and vice versa if the value is significantly greater than 0,05 ( $\text{sig} > 0,05$ ) hypothesis rejected. Based on table 4.7 shows t-count  $>$  t-table that is equal to  $2,746 > 2,010$  with a significance value of 0,008. Because  $\text{sig} < 0,05$  it can be concluded that  $H_a$  accepted, which means that there is a significant difference between the value information asymmetry (Bid Ask Spread) before and after the application of XBRL in banking companies listed in Indonesia Stock Exchange

**5. CONCLUSION:**

This study was conducted to prove whether there are differences in the market performance and information asymmetry before and after the application of XBRL (Extensible Business Reporting Language). Based on the research that has been done, it can be concluded as follows :

- There are differences in the market performance before and after the application of XBRL (Extensible Business Reporting Language) through the Price Book Value (PBV). This is evident from the significant value (2-tailed) of paired samples t-test Price Book Value (PBV) of less than 0,05 is equal to 0,029. Test results paired sample t-test resulted in the average difference PBV before and after the application of XBRL on banking companies listed in Indonesia Stock Exchange in 2014 -2017. PBV after the adoption of XBRL increased to 1,1836 while before the adoption of XBRL average PBV value of 0,9256. These results indicate that the average PBV banking company in period before the application of XBRL smaller than after the adoption of XBRL. This shows that an increase of the PBV of the banking company after the implementation of XBRL.
- There are differences in the information asymmetry before and after the application of XBRL (Extensible Business Reporting Language). This is evident from the significant value (2-tailed) of paired samples t-test Bid Ask Spreads less than 0,05 is equal to 0,008. Test results paired sample t-test resulted in the average difference Bid Ask Spread before and after the adoption of XBRL. Bid Ask Spread after adoption of XBRL decreased to 0,5580 where as before to the adoption of XBRL average value of Bid Ask Spread 0,9532, When the value of the Bid Ask Spread low, it can be interpreted that the company was in good condition. Conversely, if the value of high Bid Ask Spread it can be said that the company is in good condition.

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