RISK RELEVANCE OF COMPREHENSIVE INCOME: EVIDENCE FROM NON-FINANCIAL INDONESIA COMPANIES

Amrie Firmansyah[1*], Wiwik Utami[2], Haryono Umar[3], Susi Dwi Mulyani[4]

[1*]Department of Accounting, Polytechnic of State Finance STAN, Indonesia; [2]Department of Accounting, Mercubuana University, Indonesia; [3]Department of Accounting, Perbanas Institute, Indonesia; [4]Department of Accounting, Trisakti University, Indonesia.
Email: [1*]amrie.firmansyah@gmail.com, [2]wiwikutami@gmail.com, [3]flamboyan24@gmail.com, [4]susi.dwimulyani@yahoo.com

Abstract

Purpose of the study: This study aims to examine the effects of net income volatility, other comprehensive income volatility, and comprehensive income volatility on stock return volatility.

Methodology: This study employed a quantitative method with multiple linear regression. The sample is all non-financial companies listed on the Indonesia Stock Exchange from 2012 to 2017. Data used in this study are panel data sourced from www.idx.co.id and www.finance.yahoo.com. The sample selection in this study used a purposive sampling method with a total sample of 246 observations.

Results: This study suggests that net income volatility is not associated with stock return volatility. However, other income volatility and comprehensive income volatility are positively associated with stock return volatility.

Implications: Future studies can employ data from other developing country companies and developed countries to be able to compare the results of this study. Based on the result findings, the existing and potential investors must improve their ability and understanding of IFRS-based financial accounting standards. The Accounting Standard Board, especially in Indonesia, is expected to be able to improve the rules of financial accounting standards as well as the access to the availability of financial accounting standards for financial statements users, primarily related to the disclosure policies.

Novelty: This study calculates risk-relevant, which is different from the previous studies, namely annual stock return volatility and annual comprehensive income components volatility. Annual stock return volatility is calculated based on the standard deviation of monthly stock return volatility, which is multiplied by $\sqrt{12}$. Besides, the annual comprehensive income components volatility is generated from the standard deviation of comprehensive income components generated every three months divided by the market value of equity at the beginning of the period, and multiplied by $\sqrt{4}$.

Keywords: *Accounting Standards, Comprehensive Income, Firm Risk, Standard Deviation, Stock Return, Volatility.*

INTRODUCTION

The International Accounting Standards Committee (IASC) and the International Accounting Standards Board (IASB) are the drafting bodies of international financial reporting standards using the concept of principles-based standards, from now on, referred to as International Financial Reporting Standards (IFRS) and previously International Accounting Standards (IAS). The aim of compiling standards with this principle is to produce high-quality financial reporting. IFRS rules in each country are carried out through adoption in the hope that companies in the country can produce financial reports that have high quality and credibility. Some studies suggest that the adoption of IFRS is generally able to improve the quality of accounting standards in most countries (Chen & Lin, 2010; Daske et al., 2008). The obligation to use IFRS for companies listed on the capital market is one of the most significant changes in the history of accounting regulation (Daske et al., 2008).

In Indonesia, since January 1, 2012, there has been a change in financial accounting standards, namely the full implementation of financial accounting standards that have been converged with IFRS. The policy should be implemented in Indonesia because Indonesia has become a member of the G-20 country where the agreement of these countries to have a single set of high-quality global accounting standards to provide quality financial information on international capital markets (Cahyonowati & Ratmono, 2012). One of the effects of IFRS convergence on earnings reporting in the Indonesian Institute of Accountants regulates the presentation of financial statements in PSAK 1 (IAI, 2018) which states that the component of statements of income and other comprehensive income consists of net income, other comprehensive income, and comprehensive income.

Financial statements prepared by the IFRS-based Accounting Standards state two main measures of overall performance, namely net income and total comprehensive income. Net income is the difference between income realized in transactions and related historical costs that occur in a certain period, based on the accrual basis, realization principle, and matching principle (Liu & Liu, 2007). Comprehensive income covers all wealth acquired by the company, which reflects the measurement of the overall performance of the company (Devalle & Magarini, 2012). One of the functions of information from components of comprehensive income (net income, other comprehensive income, and

comprehensive total income) can reflect stock prices and stock returns. In accounting research, this condition is called value relevance.

One of the main problems for companies in reporting comprehensive income is that the share of other comprehensive income is more volatile than net income (Hirst & Hopkins, 1998). Thus, investors assume that the higher the volatility of the comprehensive income component, the higher the company's risk. With these conditions, value relevance research that tests the component of comprehensive income on stock prices and stock returns develops into the research of risk relevance that tests the volatility of a comprehensive income component against stock return volatility. The risk of information presented from accounting data can be reflected in the volatility of net income, other comprehensive income, and comprehensive income, which are the main business performance results that may confuse financial statement users and cause a significant misinterpretation of company performance (Khan & Bradbury, 2015). However, studies that examine risk relevance are still limited.

Since IFRS adoption was carried out in Indonesia, which began in 2012, research in Indonesia that examines the effect of net income volatility, comprehensive income volatility, and other comprehensive income volatility on stock return volatility (stock risk) are still rare. Thus, it is essential to examine the extent to which the risk of accounting data, as measured by the volatility of income, other comprehensive income, and comprehensive income that can be used by investors, influence market risk reflected in stock return volatility. The presence of IFRS in Indonesia should provide a guarantee for users of financial statements, especially investors, that the financial statements presented by the company must be more reliable and relevant. From financial report data that have adopted IFRS rules, investors can also test the extent to which the risk of accounting information data through testing earnings size volatility (net income, comprehensive income, other comprehensive income). On the other hand, the adoption of IFRS does not necessarily provide empirical evidence of an increase in the quality of financial statements. It does not necessarily prove the existence of low risk, especially for deviations in earnings quality, because opportunities for opportunistic behavior in the presentation of financial statements remain open.

Based on the description above, this study aims to examine the effects of net income volatility, other comprehensive income volatility, and comprehensive income volatility on stock return volatility. This study includes liquidity ratio as control variables. The liquidity ratio is related to the company's operating performance, which measures the extent to which cash flow from operating activities can guarantee the company's current liabilities. The higher cash flow from operating activities can guarantee the company's current liabilities that are due. Rajgopal & Venkatachalam (2011) stated that operating performance usually has a negative influence on stock return volatility. The higher operating performance is expected to reduce stock return volatility that reflects company risk. This study employs the financial statement data of non-financial companies listed on the Indonesia Stock Exchange starting in 2012, which is the year from the adoption of IFRS in Indonesia until 2017. Nasser & Hajilee (2016) stated that markets in emerging markets are integrated with the global markets. This study employs non-financial companies that have derivative transactions. Black (2016) emphasized that the company which has derivative transactions for hedging purposes may have the association between other comprehensive income volatility and stock return volatility. Zhang (2009) provided further evidence that accounting standards that regulate derivatives transactions can reduce speculative practices. Thus, the manager's effort to reduce the volatility of performance measures results in a decrease in the volatility of performance measures and stock return volatility through hedging that is by applicable standards carried out by the company. Barton et al. 2010 concluded that derivatives and accounting manipulation are used as instruments that can be substituted to manage earnings volatility. Managers can use derivatives to reduce volatility in cash flows due to changes in interest rates, foreign exchange rates, and commodity prices because these components can manage company accounts by reducing earnings volatility. Meanwhile, Huang et al. (2009) stated that managers could use derivatives when managers want to do earnings smoothing for the benefit of investors in the long run.

Also, in previous studies, the volatility of the comprehensive income component uses annual time series data, whereas in this study, uses the components of comprehensive income quarterly so that the volatility of the comprehensive income component is obtained annually. Therefore, the time frame used in this study during 2012-2017 makes it possible to use panel data. Based on the research literature that has been conducted, for research that examines the components of comprehensive income against company risk, it has been rarely used in the 3-month financial report data. Black (2014) stated that the use of shorter financial data (quarterly comprehensive income statement data/short windows) aims to find whether accounting information through shorter financial statements can attract investors' attention in describing company performance (comprehensive income component). In Indonesia, the use of net income volatility used was only carried out by Baskoro & Wardhani (2016) by annual net income data for three years.

Research questions

The investigation of risk relevance of comprehensive income in this study includes examining the effect of net income volatility, other comprehensive income volatility, and comprehensive income volatility on company risk. The data used in this study are company data in Indonesia after Indonesia conducted IFRS adoption in its financial accounting standards, starting in 2012. The adoption of IFRS led to Indonesian companies presenting the statements of comprehensive income that consists of net income information sourced from the company normal activities, other comprehensive income derived from activities outside the company's operations, and comprehensive income, which is a

combination of net income and other comprehensive income. Before Indonesia adopted IFRS, the available information was only net income in the income statements. The investigating risk relevance of comprehensive income attempts to provide evidence whether the risk of accounting information contained in the financial statements after the adoption of IFRS in Indonesia is associated with the risk of investor response to the condition of the company in the Indonesia capital market.

LITERATURE REVIEW

Barth et al. (2008) stated that the IFRS implementation could limit management opportunistic actions. Restrictions on managerial discretion in choosing a measurement method can reduce management's ability to provide accounting information that better describes the economic condition of the company. Also, flexibility in principles-based standards can provide more significant opportunities for companies to take earnings management actions. Besides conceptual debates, the results of previous studies show contradictory empirical evidence related to the benefits of IFRS/IAS in improving the quality of accounting information, as indicated by the earnings quality. The results of Alali & Foote (2012), Barth et al. (2008), Liu & Liu (2007) suggested that accounting information compiled based on IFRS/IAS has better quality than accounting information compiled based on previous accounting standards. Conversely, Hung & Subramanyam (2007), Karampinis & Hevas (2011), Meulen et al. (2007) suggested conflicting empirical evidence. The studies proved that IFRS adoption does not significantly improve the quality of accounting information, as indicated by the earnings quality after IFRS adoption.

According to Kanagaretnam et al. (2009), periodic performance measurement and financial position of business entities have always been a challenge for accounting decision-makers and a significant concern for users of accounting information. Financial statements prepared by the IFRS-based state two main measures of overall performance, namely net income and comprehensive income. Net income is the difference between income realized in transactions and related historical costs that occur in a certain period, based on the accrual basis, realization principle, and matching principle (Liu & Liu, 2007). Comprehensive income covers all wealth acquired by the company, which reflects the measurement of the overall performance of the company (Devalle & Magarini, 2012). One of the functions of information from components of comprehensive income (net income, other comprehensive income, and comprehensive total income) can reflect stock prices and stock returns. In accounting research, this condition is called value relevance. Research on value relevance has been conducted to test which component of earnings can better explain stock prices or stock returns. This information can provide a signal given by the company to investors in making investment decisions in the market. Research conducted by Biddle & Choi (2006), Dhaliwal et al. (1999), Goncharov & Hodgson (2011), Mechelli & Cimini (2014) proved that net income has more value relevance, while Biddle & Choi (2006), Cahan et al. (2000), Choi & Zang (2006), Kanagaretnam et al. (2009), concluded that comprehensive income has more value relevance compared to current year's earnings.

Research related to value relevance in Indonesia has been conducted by Cahyonowati & Ratmono (2012), proving that net income before IFRS adoption has a higher value relevance compared to profit and loss after IFRS adoption. While Sinarto & Christiawan (2014) suggested that an increase in the value relevance of net income after the implementation of IFRS and comprehensive income had a higher value relevance than net income after the IFRS implementation. Furthermore, Harimurti & Hidayat (2013) proved that comprehensive income in aggregate has value relevance. The value relevance of other comprehensive income is lower than net income. Also, this study suggested that other comprehensive income items that have value relevance are changes in the effective part of the revaluation surplus of the gains and losses of hedging instruments in the context of cash flow hedges.

Meanwhile, Chambers et al. (2007) and Kubota et al. (2011) proved that the component of other comprehensive income provides the highest value relevance compared to the current year's earnings and comprehensive income. Furthermore, from other components of comprehensive income, Kanagaretnam et al. (2009), Kubota et al. (2011) proved that the advantages and disadvantages of measuring financial assets as 'available for sale' have the most relevance of value. Meanwhile, Goncharov & Hodgson (2011) and Devalle & Magarini (2012) proved that the highest value relevance is profit and loss arising from the translation of financial statements from foreign business activities. Wang et al. (2006) proved that the profits and losses arising from the translation of financial statements from foreign business activities and changes in the fixed assets revaluation surplus both have value relevance compared to other items from other comprehensive income.

Furthermore, Ryan (2012) used the conceptual Standard Financial Accounting Board (FASB) and a stock return volatility benchmark to test the effect of other comprehensive income components on the company's total risk. Easton & Zmijewski (1989) concluded that the relationship between earnings and returns is different both with earnings persistence and with the firm's systematic risk in the equity market. Research conducted by Barth et al. (1995) found that income statement was more volatile compared to comprehensive income, while Bamber et al. (2010) and Khan & Bradbury (2014, 2015) proved that comprehensive income is more volatile than net income.

Meanwhile, Hodder et al. (2006) showed that comprehensive income based on fair value (after adjustment) is more volatile than comprehensive income and net income. Furthermore, research examining the volatility of profit and loss, other components of comprehensive income, and comprehensive income on stock return volatility (risk relevance)

provides different results. Maines & Mcdaniel (2000) and Bloomfield et al. (2006) proved that the advantages and disadvantages of measuring the available financial assets for sale have a positive effect on stock return volatility (having risk relevance).

Black (2014) proved that the gains and losses of measuring financial assets as available for sale negatively affect stock return volatility. Hodder et al. (2006) suggested that net income volatility and comprehensive income volatility have a positive effect on stock return volatility. Hodder et al. (2006) and Khan & Bradbury (2014, 2015) concluded that comprehensive income incremental volatility (difference in the difference between comprehensive income volatility and net income volatility) is not associated with stock return volatility. From these studies, the accounting risk assessed by investors lies in the volatility of the comprehensive income component, which consists of the volatility of net income, other comprehensive income, and comprehensive income.

Hypothesis Development

Beaver et al. (1970) stated that the portfolio theory specifies risk measurement solely in terms of determining market interactions. However, the important thing for the accounting profession is to understand the relationship between accounting measurements that are intended and the measurement of determining market risk. Meanwhile, the measure of accounting risk can be considered as a substitute for the total variability of returns from a company's equity securities (Beaver et al., 1970). The measure of accounting risk is closely related to the net income volatility obtained by the company from time to time. Thus, the accounting measure reflects the component of systematic risk and unsystematic (idiosyncratic) risk. Beaver et al. (1970) found a high level of contemporary relations between accounting measures and measures of market risk. Ryan (2012) found that earnings variability has historically been the accounting variable most related to equity risk. Khan & Bradbury (2014, 2015) found that net income volatility has historically been the accounting variable most associated with firm risk.

Agency theory states that the relationship between agent and principal problems can lead to information asymmetry. This problem causes the agent to freely use his incentives in determining accounting policies and other policies related to the company. The policies taken by the company can be reflected in the amount of profit and loss obtained by the company in a certain period. If the income statement is not stable from time to time, it can indicate that the policy chosen by the company results in uncertainty about the company's future conditions. This condition may be caused by the existence of specific policies from management that are opportunistic so that it results in instability of profit and loss from period to period. Therefore, the policies taken by management in the company specifically related to the company's operating activities can cause uncertainty in the future of the company. Thus, the hypothesis in this study is as follows:

H₁: Net income volatility is positively associated with stock return volatility

Other comprehensive income is a component of comprehensive income generated not from the company's operating activities. Still, it has a role in influencing changes inequity in a company that occurs due to transactions or because of transactions or economic events in a reporting period other than transactions involving non-owners. Another component of comprehensive income is a new item that usually occurs after IFRS adoption is carried out by companies within a country, for countries that do not use US GAAP. In PSAK 1 (IAI, 2018), other comprehensive income consists of several components, namely changes in fixed asset revaluation surplus, gains and losses from remeasuring the value of investment / available-for-sale financial assets, the effective portion of the gain and loss in hedging instruments cash flow hedges, gains and losses arising from the translation/translation of financial statements in foreign currencies, as well as actuarial gains and losses on defined benefit programs.

Other comprehensive income items are the result of changes in interest rates, exchange rates, and other randomly running processes. In general, changes in the fair value of assets and certain obligations that a company itself results in the creation of other comprehensive income items (Chen & Lin, 2008). Khan & Bradbury (2015) found that when the results of financial statements that are reflected in fluctuations in net income and comprehensive income are not proven, the market will be confused about other comprehensive income information that can mislead users of financial statements.

Other comprehensive income arises as a result of activities outside the company's normal operations. If the amount of other comprehensive income is not stable every period, this shows that the company's policy for activities outside the regular operation changes. In addition to investors' poor understanding of other comprehensive income items and the high volatility of other comprehensive income, investors are worried about the condition of the company. Therefore, the instability of other comprehensive income can trigger the emergence of unsystematic risk due to management policies within the company. Thus, the hypothesis in this study is as follows:

H₂: Other comprehensive income volatility is positively associated with stock return volatility

In PSAK 1 (IAI, 2018), comprehensive income is defined as changes in equity during one period resulting from transactions and other events, in addition to changes resulting from transactions with owners in their capacity as owners. The main component of comprehensive income is net income and other comprehensive income. Dhaliwal et al. (1999) found that comprehensive income does not have a stronger relationship with market return/value. Cahan et al. (2000) concluded that comprehensive income has more value relevance than net income. Still, there is no clear benefit in

reporting separate components of other comprehensive income, at least related to fixed asset revaluation components and foreign exchange differences due to foreign currency translation. Chambers et al. (2007) found evidence that after the period of the SFAS 130 concerning the disclosure of comprehensive income, other comprehensive income as transitory income has value relevance on a dollar-to-dollar basis. However, Chambers et al. (2007) did not prove that investors pay more attention to other comprehensive income presented in the Financial Performance Report. Kanagaretnam et al. (2009) found that comprehensive income in aggregate had a more substantial influence on stock prices and stock return compared to net income. The study also proved that comprehensive income volatility is positively associated with stock return volatility. Khan & Bradbury (2014, 2015) stated that comprehensive income volatility leads to a perception of increased company risk. The comprehensive income volatility can reflect both the effect of the instability of the income statement component and the instability of other comprehensive income components. The existence of accounting policies chosen by management in the company related to the normal activities of the company or not the normal activities of the company can be reflected in the comprehensive income generated by the company during one period. Therefore, accounting policies made by companies that change for all company activities can result in company risk arising from policy mistakes taken by management within the company. Thus, the hypothesis in this study is as follows:

H₃: Comprehensive income volatility is positively associated with stock return volatility.

METHODOLOGY

The research method used in research is quantitative methods. The object of research uses companies listed on the Indonesia Stock Exchange. The population used in the study is non-financial companies listed on the Indonesia Stock Exchange. Data was collected using the documentation method through the official website of the Indonesia Stock Exchange, namely www.idx.co.id and finance.yahoo.com. Information data from the financial statements used in this study for components of comprehensive income using quarterly financial statement data, while other data use annual data. The technique in selecting the sample used is using a non-random sampling technique (purposive sampling). In this study, samples were taken with several criteria. First, companies used in the sample are non-financial companies that have registered their shares on the Indonesia Stock Exchange before January 1, 2012. Second, this study removed financial companies from the sample because the characteristics of asset structure and liabilities generate high leverage. Third, this study removed non-financial companies that have incomplete financial statements, including information on comprehensive income components and data needed in this study from the period January 1, 2012, to December 31, 2017. Fourth, non-financial companies have disclosure data of at least 1 type of derivative transaction either for hedging purposes or for speculative purposes or which have both during the period of January 1, 2012, to December 31, 2017. Based on the calculation of data for each variable, this study excludes one company because it has outlier data that have anomalous value. The amount of the company that can be used in this study is 41 companies so that the sample is 246 observations (firm-year). The data and information from financial statements sampled companies were obtained by content analysis.

The dependent variable in this study is stock return volatility. The proxy uses the standard deviation of monthly stock return as follows Khan & Bradbury (2014, 2015). The annual stock return volatility is calculated based on the standard deviation of monthly stock return volatility that needs to be multiplied by √12 to avoid bias. Standard deviations based on daily, weekly, monthly, or quarterly stock return data can be annualized by making a standard deviation of these data by multiplying by the root of the amount of daily, weekly, monthly and quarterly data so that they become standard deviations or annual volatility (financetrain.com). Therefore, in line with this study, to get annual stock return volatility, the standard monthly residual deviation from the above equation needs to be multiplied by √12 to obtain stock return volatility in one year.

This study uses comprehensive income volatility, net income volatility, and other comprehensive income volatility as independent variables. Comprehensive income volatility, net income volatility, and other comprehensive income volatility in this study follow the proxy used by Black (2014) and Khan & Bradbury (2014, 2015). The comprehensive income volatility, net income volatility, and other comprehensive income volatility are calculated by the quarterly components during one year divided by the market value of equity at the beginning of the period. The volatility of the components in one year is generated from the standard deviation of comprehensive income generated every three months divided by the market value of equity at the beginning of the period, and multiplied by √4. Also, this study employs a liquidity ratio as a control variable. It is measured by the ratio of operating cash flows to total current liabilities each year, as used by Khan & Bradbury (2014, 2015).

The equation of the regression analysis using stock return volatility is as follows:

$$RtVol_{it} = \beta0 + \beta1 NIVOL_{it} + \beta1 OCIVOL_{it} + \beta2 LIQ_{it} + \varepsilon_{it} \qquad (1)$$

$$RtVol_{it} = \beta0 + \beta1 CIVOL_{it} + \beta2 LIQ_{it} + \varepsilon_{it} \qquad (2)$$

RESULTS

The descriptive statistical components used in this research are the mean, median, maximum value, minimum value, and standard deviation. Table 1 suggests the results of a descriptive statistics summary that describe information on variable

characteristics in this study.

Table 1: Descriptive Statistics Summary

	SERVOL	NIVOL	OCIVOL	CIVOL	LIQ
Mean	0.373	0.032	0.022	0.047	0.445
Median	0.320	0.018	0.002	0.021	0.343
Maximum	1.900	0.399	1.256	1.506	2.467
Minimum	0.069	0.001	0.000	0.001	-0.558
Std. Dev.	0.231	0.049	0.092	0.112	0.459
Observations	246	246	246	246	246

Source: Processed from www.idx.co.id

Table 1 suggests that the mean value of stock return volatility is 0.373, the median value is 0.320, the maximum value is 1,900, the minimum value is 0.069, and the standard deviation value is 0.231. The mean value of net income volatility is 0.032, the median value is 0.018, the maximum value is 0.399, the minimum value is 0.001, and the standard deviation value is 0.049. The mean value of other comprehensive income volatility is 0.022, the median value is 0.002, the maximum value is 1.256, the minimum value is 0,000, and the standard deviation is 0.092. The mean value of comprehensive income volatility is 0.047, the median value is 0.021, the maximum value is 1.506, the minimum value is 0.001, the standard deviation is 0.112. The mean value of liquidity is 0.445, the median value is 0.343, the maximum value is 2.467, the minimum value is -0.558, and the standard deviation is 459.

Furthermore, the results of regression model selection tests (chow test, Lagrange multiplier test, Hausman test) suggest that the most appropriate regression model 1 is a fixed-effect model. Meanwhile, the most appropriate regression model 2 is a random-effect model. The summary of the regression test results for equation 1 is as follows:

Table 2: The summary of the regression test result equation 1

Variable	Coef.	t-Stat.	Prob.	
C	0.3899	14.7182	0.000	***
NIVOL	-0.1750	-0.4835	0.314	
OCIVOL	0.3474	1.9319	0.027	**
LIQ	-0.0422	-0.9322	0.176	
R^2	0.3930			
Adj. R^2	0.2637			
F-stat.	3.0415			
Prob(F-stat.)	0.0000			

Source: Processed from Eviews 9

The regression test result for equation 2 in Table 3 is as follows:

Table 3: Regression Test Result: Equation 2

Variable	Coef.	t-Statistic	Prob.	
C	0.3737	12.945	0.000	***
CIVOL	0.2021	1.620	0.053	*
LIQ	-0.0229	-0.623	0.266	
R2	0.0129			
Adj. R2	0.0048			
F-stat.	1.5961			
Prob(F-stat.)	0.2048			

Source: Processed from Eviews9

DISCUSSIONS

The effect of net income volatility on stock return volatility

The result of hypothesis testing suggests that net income volatility is not associated with stock return volatility. The result differs from Rajgopal & Venkatachalam (2011). The result of this study is also not in line with Khan & Bradbury (2014, 2015). Khan & Bradbury (2014, 2015) used volatility of annual income for several years. Whereas, this study follows the recommendation of Black (2014), which stated that shorter financial statement data might attract investors' attention in describing the company's performance. Therefore, investors as users of financial statements, do not use quarterly earnings movement information in determining company risk.

Net income volatility does not affect stock return volatility may reflect that the quarterly net income volatility does not reflect earnings management activities in one period. Therefore, financial statements by IFRS-based financial accounting standards, the volatility of the current quarter net income still requires further analysis and interpretation. Thus, net income volatility is not information that can be used by investors in determining the systematic risk in the current year. Although Khan & Bradbury (2014, 2015) stated that net income volatility is the best measure of accounting risk in capturing company risk information, it is not proved in the Indonesia context. Investors may still use net income information as accounting information that results in economic consequences even though investors need more time to interpret the income statement by the new financial accounting standards. Also, they may be more careful in responding to accounting information issued by the company to the public as well as more attention to annual net income information than quarterly net income information. It is supported by Khan & Bradbury (2014, 2015), who found that investors use annual net income information as a basis for decision making related to company risk.

Information on quarterly net income in the current year cannot be used as decision making related to investment risk, especially firm risk. Investors may be more careful in responding to the movement of quarterly net income information in the current year, which may not necessarily be used in investment decision making in the capital market. Also, users of financial statements, especially investors, need time to be able to understand the company's activities that are reflected in net income, including the policies chosen by the company in determining revenue and expenses every quarterly period in one year. Changes in IFRS-based financial accounting standards implemented by companies in Indonesia, starting in 2012 is not an easy thing for investors to interpret. Net income information is still used by investors in making decisions regarding the information on company risk, given that investors are familiar with net income information using previous accounting standards.

This study found that the level of net income stability cannot conclude the systematic risk of a company. By using the context of Indonesian companies and stock markets, the efficient market theory does not apply because earnings information cannot be used as a basis for decision making, especially in assessing risk systematically. Based on the efficient market theory, financial statement data should be able to be used in investment decision making related to firm risk. Based on the test data in this study, the conditions occurring in Indonesia do not support the theory. The condition of net income in a reasonable period, which is more volatile due to the possibility of internal company policies that are too aggressive, cannot capture the firm risk.

The effect of other comprehensive income volatility on stock return volatility

The result of hypothesis testing suggests that other comprehensive income volatility is positively associated with stock return volatility. The result of this study indicates that information on the instability of other comprehensive income of a company could reflect the firm risk. It is reflected from descriptive statistics that other comprehensive income owned by the companies are various in amount. Other comprehensive income items that emerged after the adoption of IFRS in financial accounting standards in Indonesia since 2012 have come to the attention of investors. However, they are not a regular activity of a company that could endanger the company, and the amount is relatively low compared to net income. This finding is not relevant to the results of tests conducted by Khan & Bradbury (2015), which found that other comprehensive income volatility does not affect firm risk. Other comprehensive income items could be a problem for users of financial statements because they appear as an impact due to changes in financial accounting standards in Indonesia. The emergence of other comprehensive items is different from the net income component that can be done, which is partly an accrual component, which is a regular activity of the company is a risky action for users of financial statements, especially investors. In addition to the value of other comprehensive income is lower than net income, investors do not necessarily understand other comprehensive income items that arise as a result of changes in accounting standards starting in 2012. The result of his study is in line with the findings of Maines & Mc Daniel (2000), which stated that other comprehensive income volatility could capture the presence of firm risk. The findings in this study indicate that investors may use the information on other comprehensive income to assess firm risk. The emergence of comprehensive income items and the amount is unstable and relatively low, resulting in investor response to the information to the firm risk information.

Investors may consider items of other comprehensive income to be unstable and of relevance to low entity core business results so that investors assume that it is related to firm risk. Also, other quarterly comprehensive income information in one year can confuse users of financial statements and cause significant misinterpretations of the entity's performance (Khan & Bradbury, 2014; 2015). Other comprehensive income is regulated in IFRS-based financial accounting standards, and it is not an easy thing for investors to interpret the activities that arise in these other comprehensive income items. According to Khan & Bradbury (2015), other comprehensive income items have different properties, are less controlled, challenging to predict, and cannot be linked to management performance. The usefulness of information on other comprehensive income is considered for investors in making investment decisions related to firm risk. The result does not confirm the findings of Bima & Afri (2017), which stated that comprehensive income information is less able to provide information on better quality financial information.

This study proves that other comprehensive income items arising from management policies within the company related to company activities outside the regular operation of the company are related to firm risk. Investors may consider comprehensive income items after the company has applied IFRS-based financial accounting standards since 2012,

resulting in instability of other comprehensive income items that investors have not responded to in providing information related to company risk. Therefore, accounting information on other comprehensive income may not be used in assessing the current and future conditions of a company. Still, it reflects that the information is related to market-based firm risk. Furthermore, the test results in this study prove the prediction of Black (2016), which stated that the use of shorter data could better capture firm risk in general and be more attractive to investors, especially other comprehensive income.

The effects of comprehensive income volatility on stock return volatility

The result of hypothesis testing suggests that comprehensive income volatility is positively associated with stock return volatility. The result of this study is also similar to Hodder et al. (2006) and Khan & Bradbury (2014, 2015), who found that comprehensive income is positively associated with firm risk. The data examined in this study uses company data in Indonesia as a developing country and uses quarterly comprehensive income data in one year. At the same time, Khan & Bradbury (2014, 2015) employed data from developed country companies and used annual comprehensive income data for several years. With IFRS-based financial accounting standards used by companies in Indonesia, investors may be more interested in using annual accounting information data such as comprehensive income information than quarterly accounting information data. Moreover, quarterly comprehensive income information consists of 4 financial statements in one year, which requires more time to interpret the information. However, the result of this study is not in line with the findings of Dhaliwal et al. (1999), which proved that comprehensive income volatility does not affect company risk.

The information on comprehensive income differs from net income information because the market only reacts for comprehensive income information. Investors assume that if the quarterly comprehensive income information for four periods in one year is volatile, they will react that it will be riskier for investment purposes. Financial accounting standards in Indonesia that have used IFRS starting in 2012 regulate the separation of net income components from normal company activities and other comprehensive income components that come from activities outside the company's regular business. The combination of these two components is then included in comprehensive income. The separation of these components should make it easier for investors to analyze the financial statement information submitted by the company so that comprehensive income information has usefulness for investors. It is easier for investors to detect items included in net income as well as those included in other comprehensive income. Although most components of comprehensive income come from net income, investors may assume that comprehensive income is new information after companies in Indonesia apply IFRS-based accounting standards. There are other components of comprehensive income in comprehensive incomes that are subject to change from time to time. Therefore, investors consider comprehensive income information to be influenced by other comprehensive income so that this information is related to firm risk. The finding in this study proved the prediction of Black (2016) that the shorter financial data that is quarterly comprehensive income information can attract investors' attention in Indonesia is proven.

CONCLUSIONS

Net income volatility is not associated with stock return volatility, but other comprehensive income volatility and comprehensive income volatility are positively associated with stock return volatility. Although Indonesia investors are not easy to interpret net income information using IFRS-based financial accounting standards, they have known net income information using previous financial accounting standards. Thus, they respond to comprehensive income information the same as investors' responses to net income. Information on net income volatility obtained by the company every quarter in the current year does not reflect the risk of not being systematic in Indonesia. Comprehensive income items appear after companies in Indonesia use IFRS-based financial accounting standards instead of becoming information that is easily understood by users of financial statements. In addition to the relatively low amount, other comprehensive income items originating from activities outside the company's regular operations do not become too attractive information for investors.

This study suggests that investors should have functional understandings of financial accounting standards because changes in financial accounting standards can result in different interpretations rather than the prior financial accounting standards. It will be beneficial for making investment decisions in the capital market. Based on the findings in this study, investors as users of financial statements need time to interpret information in financial statements, especially information on comprehensive income components. Based on the results of this study, the Accounting Standard Board, especially in Indonesia, is expected to continue to be able to improve the rules of financial accounting standards, especially related to the policy of disclosure of activities included in comprehensive income to increase the usefulness of financial statements for users of financial statements. Changes in financial accounting standards lead to adjustment investor's understanding of new financial accounting standards. Therefore, IAI needs to improve the quality of financial accounting standard settings as well as the access to the availability of financial accounting standards so that information in financial statements can be better understood and more useful for investors.

LIMITATION AND STUDY FORWARD

This study has several limitations. First, this study examines the risk of accounting information due to IFRS adoption in Indonesia, which began in 2012. Therefore, the scope of data and information is only limited to the condition of companies in Indonesia. Also, the results of this study cannot generalize the results for data from other developing and

developed countries. Second, considering that IFRS adoption has only been started in 2012 in Indonesia, financial statement data that have a net income, other comprehensive income, and comprehensive income information can only use the company's financial statement data starting in 2012, so that the time horizon used in this study is not too long. Therefore, future studies can be developed using data from other developing country companies and also developed countries both by using data and information on net income. Future studies can also examine net income volatility by using data before and after the application of IFRS in Indonesia or other countries.

AUTHORS CONTRIBUTION

Amrie Firmansyah contributed to the concepts, theories, and methodology. The concepts were discussed with Wiwik Utami, Haryono Umar, and Susi Dwi Mulyani. The data and its processing were conducted by Amrie Firmansyah. Data analysis was conducted altogether by Amrie Firmansyah, Wiwik Utami, Haryono Umar, and Susi Dwi Mulyani. The results of the study were discussed by Amrie Firmansyah, Wiwik Utami, Haryono Umar, and Susi Dwi Mulyani.

REFERENCES

1. Alali, F. A., & Foote, P. S. (2012). The value relevance of international financial reporting standards: empirical evidence in an emerging market. *International Journal of Accounting*, *47*(1), 85–108. https://doi.org/10.1016/j.intacc.2011.12.005
2. Bamber, L. S., Jiang, J. X., Petroni, K. R., & Wang, I. Y. (2010). Comprehensive income: who's afraid of performance reporting? *The Accounting Review*, *85*(1), 97–126. https://doi.org/10.2308/accr.2010.85.1.97
3. Barth, M. E., Landsman, W. R., & Lang, M. H. (2008). International accounting standards and accounting quality. *Journal of Accounting Research*, *46*(3). https://doi.org/10.1111/j.1475-679X.2008.00287.x
4. Barth, M. E., Landsman, W. R., & Wahlen, J. M. (1995). Fair value accounting: effects on banks' earnings volatility, regulatory capital, and value of contractual cash flows. *Journal of Banking and Finance*, *19*, 577–605. https://doi.org/10.1016/0378-4266(94)00141-O
5. Barton, J., Hansen, T. B., & Pownall, G. (2010). Which performance measures do investors around the world value the most—and why? *The Accounting Review*, *85*(3), 753–789. https://doi.org/10.2308/accr.2010.85.3.753
6. Baskoro, M. P., & Wardhani, R. (2014). Analisis pengaruh volatilitas laba dan manajemen laba riil dan akrual terhadap kebijakan investasi. In *SNA 17 Mataram, Lombok* (Issue June).
7. Beaver, W., Kettler, P., & Scholes, M. (1970). The association between market determined and accounting determined risk measures. *The Accounting Review*, *45*(4), 654–682.
8. Biddle, G. C., & Choi, J. (2006). Is comprehensive income useful? *Journal of Contemporary Accounting & Economics*, *2*(1), 1–32. https://doi.org/10.1016/S1815-5669(10)70015-1
9. Bima, P. G., & Afri, Y. E. N. (2017). Dampak pengungkapan pendapatan komprehensif lain terhadap manajemen laba pada perusahaan manufaktur di Indonesia. *Diponegoro Journal Of Accounting*, *6*, 1–15.
10. Black, D. E. (2014). *Essays on Other Comprehensive Income*. Duke University.
11. Black, D. E. (2016). Other comprehensive income: a review and directions for future research. *Accounting and Finance*, *56*, 9–45. https://doi.org/10.1111/acfi.12186
12. Bloomfield, R. J., Nelson, M. W., & Smith, S. D. (2006). Feedback loops, fair value accounting and correlated investments. *Rev Acc Stud*, *11*, 377–416. https://doi.org/10.1007/s11142-006-9003-2
13. Cahan, S. F., Courtenay, S. M., Gronewoller, P. L., & Upton, D. R. (2000). Value relevance of mandated comprehensive income disclosures. *Journal of Business Finance & Accounting*, *27*(9), 1273–1301. https://doi.org/10.1111/1468-5957.00356
14. Cahyonowati, N., & Ratmono, D. (2012). Adopsi IFRS dan relevansi nilai informasi akuntansi. *Jurnal Akuntansi Dan Keuangan*, *14*(2), 105–115. https://doi.org/10.9744/jak.14.2.105-115
15. Chambers, D., Linsmeier, T. J., Shakespeare, C., & Sougiannis, T. (2007). An evaluation of SFAS No. 130 comprehensive income disclosures. *Rev Acc Stud*, *12*, 557–593. https://doi.org/10.1007/s11142-007-9043-2
16. Chen, H., & Lin, Z. (2010). The Role of international financial reporting standards in accounting quality: evidence from the European Union. *Journal of International Financial Management and Accounting*, *21*(3), 220–278. https://doi.org/10.1111/j.1467-646X.2010.01041.x
17. Choi, J., & Zang, Y. (2006). Implications of comprehensive income disclosure for future earning and analysts' forecasts. *Seoul Journal of Business*, *12*(2), 77–109.
18. Daske, H., Hail, L., Leuz, C., & Verdi, R. (2008). Mandatory IFRS reporting around the world: early evidence. *Journal of Accounting Research*, *46*(5), 1085–1142. https://doi.org/10.1111/j.1475-679X.2008.00306.x
19. Devalle, A., & Magarini, R. (2012). Assessing the value relevance of total comprehensive income under IFRS : an empirical evidence from European stock exchanges. *Int. J. Accounting*, *8*(1), 43–68. https://doi.org/10.1504/IJAAPE.2012.043965
20. Dhaliwal, D., Subramanyam, K. R., & Trezevant, R. (1999). Is comprehensive income superior to net income as a measure of firm performance? *Journal of Accounting and Economics*, *26*, 43–67. https://doi.org/10.1016/S0165-4101(98)00033-0
21. Easton, P. D., & Zmijewski, M. E. (1989). Cross-sectional variation in the stock market response to accounting earnings announcements. *Journal of Accounting and Economics*, *11*, 117–141. https://doi.org/10.1016/0165-4101(89)90003-7

22. Goncharov, I., & Hodgson, A. (2011). Measuring and reporting income in Europe. *Journal of International Accounting Research*, *10*(1), 27–59. https://doi.org/10.2308/jiar.2011.10.1.27

23. Harimurti, A. A., & Hidayat, T. (2013). *Value Relevance atas Pelaporan Laba Rugi Komprehensif*.

24. Hirst, D. H., & Hopkins, P. E. (1998). Comprehensive income reporting and analysts' valuation judgments. *Journal of Accounting Research*, *36*, 47–75. https://doi.org/10.2307/2491306

25. Hodder, L. D., Hopkins, P. E., & Wahlen, J. M. (2006). Risk-relevance of fair value income measures for commercial banks. *The Accounting Review*, *81*(2), 337–375. https://doi.org/10.2308/accr.2006.81.2.337

26. Huang, P., Zhang, Y., Deis, D. R., & Moffitt, J. S. (2009). Do artificial income smoothing and real income smoothing contribute to firm value equivalently? *Journal of Banking and Finance*, *33*(2), 224–233. https://doi.org/10.1016/j.jbankfin.2008.07.012

27. Hung, M., & Subramanyam, K. (2007). Financial statement effects of adopting international accounting standards: the case of Germany. *Rev Acc Stud*, *12*, 623–657. https://doi.org/10.1007/s11142-007-9049-9

28. IAI. (2018). *SAK Efektif Per 1 Januari 2018 9*. Ikatan Akuntasi Indonesia.

29. Kanagaretnam, K., Mathieu, R., & Shehata, M. (2009). Usefulness of comprehensive income reporting in Canada. *J. Account. Public Policy*, *28*, 349–365. https://doi.org/10.1016/j.jaccpubpol.2009.06.004

30. Karampinis, N. I., & Hevas, D. L. (2011). Mandating IFRS in an unfavorable environment: the Greek experience. *International Journal of Accounting*, *46*(3), 304–332. https://doi.org/10.1016/j.intacc.2011.07.001

31. Khan, S., & Bradbury, M. E. (2014). Volatility and risk relevance of comprehensive income. *Journal of Contemporary Accounting & Economics*, *10*, 76–85. https://doi.org/10.1016/j.jcae.2014.01.001

32. Khan, S., & Bradbury, M. E. (2015). The volatility of comprehensive income and its association with market risk. *Accounting and Finance*, *56*(3), 727–748. https://doi.org/10.1111/acfi.12108

33. Kubota, K., Suda, K., & Takehara, H. (2011). Information content of other comprehensive income and net income: evidence for Japanese firms. *Asia-Pacific Journal of Accounting & Economics*, *18*(2), 145–168. https://doi.org/10.1080/16081625.2011.9720879

34. Liu, J., & Liu, C. (2007). Value relevance of accounting information in different stock market. *Journal of International Accounting Research*, *6*(2), 55–81. https://doi.org/10.2308/jiar.2007.6.2.55

35. Maines, L. A., & Mcdaniel, L. S. (2000). Effects of comprehensive-nonprofessional characteristics on investors' judgement: the role of financial-statement presentation format. *The Accounting Review*, *75*(2), 179–207. https://doi.org/10.2308/accr.2000.75.2.179

36. Mechelli, A., & Cimini, R. (2014). Is comprehensive income value relevant and does location matter? A European study. *Accounting in Europe*, *11*(1), 59–87. https://doi.org/10.1080/17449480.2014.890777

37. Meulen, S. Van Der, Gaeremynck, A., & Willekens, M. (2007). Attribute differences between U.S. GAAP and IFRS earnings: an exploratory study. *The International Journal of Accounting*, *42*, 123–142. https://doi.org/10.1016/j.intacc.2007.04.001

38. Nasser, O. M. Al, & Hajilee, M. (2016). Integration of emerging stock markets with global stock markets. *Research in International Business and Finance*, *36*, 1–12. https://doi.org/10.1016/j.ribaf.2015.09.025

39. Rajgopal, S., & Venkatachalam, M. (2011). Financial reporting quality and idiosyncratic return volatility. *Journal of Accounting and Economics*, *51*, 1–20. https://doi.org/10.1016/j.jacceco.2010.06.001

40. Ryan, S. G. (2012). Risk reporting quality: implications of academic research for financial reporting policy. *Accounting and Business Research*, *42*(3), 295–324. https://doi.org/10.1080/00014788.2012.681855

41. Sinarto, R. J., & Christiawan, J. J. (2014). Pengaruh penerapan IFRS terhadap relevansi nilai laba laporan keuangan. *Tax & Accounting Review*, *4*(1), 1–13.

42. Wang, Y., Buijink, W., & Eken, R. (2006). The value relevance of dirty surplus accounting flows in The Netherlands. *The International Journal of Accounting*, *41*, 387–405. https://doi.org/10.1016/j.intacc.2006.09.005

43. Zhang, H. (2009). Effect of derivative accounting rules on corporate risk-management. *Journal of Accounting and Economics*, *47*(3), 244–264. https://doi.org/10.1016/j.jacceco.2008.11.007

44. Finance Train. (n.d.). How to calculate annualized standard deviation. Retrieved from https://financetrain.com/calculate-annualized-standard-deviation