www.bircu-journal.com/index.php/birci
Budapest International Research and Critics Institute-Journal (BIRCI-Journal)
Humanities and Social Sciences
ISSN 2615-3076 Online)
ISSN 2615-1715 (Print)
Budapest Institute

The Effect of Derivative Transactions on the Value Relevance of Earnings through Corporate Earnings Management in Indonesia

Suhendra[1], Limajatini[2], David Kiki Baringin MT. Samosir[3]
[1,2,3]*Universitas Buddhi Dharma, Tangerang, Indonesia*

Abstract

This study aims to examine and analyze the effect of derivative transactions on earnings management, the effect of earnings management on value relevance of earnings, and the effect of derivative transactions on value relevance of earnings. This study uses data from non-financial companies in Indonesia for the period 2013-2017 with 43 sample of companies. In this study, earnings management is calculated based on the Jaggi model. The value relevance of earnings is calculated based on Ohlson's model. The results show that derivative transactions have a positive effect on earnings management. Earnings management negatively affects the value relevance of earnings. Derivative transactions are not proven to have a negative effect on the value relevance of earnings. Derivative transactions, especially those with non-hedging criteria, show a high tendency towards earnings management activities. Derivative transactions have a positive effect on earnings management. With the negative influence of derivative transactions and earnings management activities on the value relevance of earnings, the commissioner or audit committee needs to carry out an internal oversight function in reporting financial statements, especially in non-financial companies that carry out derivative transactions.

Keywords
derivative transactions; earnings management; value relevance of earnings; corporate tax avoidance

I. Introduction

Derivative transactions were originally related to anticipating price declines during the 19th century wheat farmers' harvest season and a to-arrive contract (a type of future contract) was made that allowed them to lock in prices for future transactions. They get price certainty when selling products in the future (Brav et al., 2018; Fischer et al., 2016; Rakowski et al., 2017)

Table 1. Indonesia's Macroeconomics

Macroeconomics	2013	2014	2015	2016	2017
GDP Per capita Growth	4.2%	3.7%	4.5%	3.7%	3.8%
Balance of Payments Surplus (Deficit)	-3.2%	-3.1%	-2.0%	-1.8%	-1.7%
Inflation	6.9%	6.4%	6.4%	3.5%	3.8%
Country rating (Fitch Ratings)	BBB-	BBB-	BBB-	BBB-	BBB
Bank Indonesia Rate/7-day Reverse Repo Rate	6.5%	7.5%	7.5%	6.0%	4.5%

*Country rating*Indonesia in 2017 was BBB and Indonesia's GDP per capita in 2016 was 3.7% and in 2017 it was 3.8%. Based on the current account side, Indonesia experienced a national trade deficit of -1.6% in 2017. In 2017, inflation in Indonesia was 3.8%. Since

DOI: https://doi.org/10.33258/birci.v4i3.2547

August 19, 2016, Bank Indonesia has used the BI 7-day reverse repo rate as the policy interest rate to replace the BI rate and in 2017 the interest rate was 4.5%.

In Indonesia, financial instruments and related derivatives through the Indonesian Institute of Accountants issued Statement of Financial Accounting Standards No. 71 which replaced Statement of Financial Accounting Standards No. 55. Indonesia adopted IFRS 9 through PSAK 71 (2018)and has been effective since January 1, 2020. There are 3 fundamental changes in PSAK 71 (2018), namely: (a) new classification and measurement of financial assets. (b) The expected credit loss recognition model, and (c) improve accounting for hedges.

In 2017 the volume of derivative contracts increased by 213.5% compared to 2016. The following is Table 2 of the volume of derivatives trading in Indonesia in 2013-2017.

Table 2. Derivative Trading Volume in Indonesia in 2013-2017

Derivative Type	2013	2014	2015	2016	2017
Right	30	22	21	35	41
Warrant	31	33	27	28	40
Future Trading Activities	-	-	-	291	168
LQ45 Index Futures	-	-	-	-	-
Exchange Trade Fund	119,879,775	11,747,100	22,212,400	54,025,900	245,019,000
Real Estate Investment Trust (REIT)	127,627,275	1,486,329,790	1,353,884,490	136,273,800	351,614,401
Total Derivative Volume	247.507.111	1,498,076,945	1,376,096,938	190.300.054	596,633,650

Source: IDX Fact Book 2018
**) in the number of derivative contract units*

Changes in technology, globalization, and the development of business transactions such as hedging and derivatives have led to higher challenges faced by companies in managing the risks they must face. (Beasley et al., 2008). PSAK No. 55 explains that the accounting for derivative transactions and hedging activities states that derivative transactions require formal documentation of risk management analysis and analysis of transaction effectiveness if the company hedges the derivative transaction. In addition, a company (entity) is required to report every derivative transaction at least every three months in the company's financial statements.

Derivative transactions cannot be separated from risk and financial risk management is necessary to minimize potential losses arising from unexpected changes in currency, credit, commodity and equity prices. The risk of price volatility faced is known as market risk. Market risk is sometimes also used for the term value at risk which refers to the potential loss of a company's traded portfolio, which includes hedging instruments caused by changes in asset prices, interest rates, market volatility or market liquidity.

Value relevance very important to be studied and several studies including by Ozek (2016)the result is that it has not been able to prove the relationship between the use of derivative transactions and the value relevance of earnings. StudyMurwaningsari et al. (2015), the results can prove the existence of a relationship between derivatives on the relevance of the value of earnings. Value relevance is an interesting study, an interesting phenomenon regarding value relevance studies is the pros and cons of researchFrancis and Schipper (1999)who do not find a large decrease in value relevance in industries that use high technology. Recent research that supports Murtini and Lusiana (2016), there is no difference between earnings management before and after IFRS adoption as measured by discretionary accruals and value relevance before and after IFRS adoption. His research uses earnings management and value relevance to describe the quality of accounting information. These

findings are also consistent with research Der et al. (2016), that it is not proven that earnings management has implications for value relevance.

Other findings regarding value relevance have been made Lev and Zarowin (1999), a significant decrease in the role of value relevance for companies with an increase in research and development. Dahmash and Qabajeh (2012), explained that the Ohlson model, namely firm value consists of book value and earnings as well as the clean surplus concept of shareholder value. Shows results that are highly relevant to publicly traded and publicly traded companies on stock prices. The book value of equity and abnormal earnings are relevant values. Study Heshmat et al. (2015), proves that real earnings management and artificial earnings management have a negative effect on the value relevance of earnings. Mostafa (2017), value relevance relates to earnings management, because both value relevance and earnings management relate to the empirical phenomenon of fraud that occurs in the development of international business.

Based on the exposure of empirical studies, several research gaps were found, namely first, inconsistent results were found regarding the effect of earnings management on the value relevance of earnings. *Earnings management* has a negative effect on the value relevance of earnings (Mostafa, 2017;Heshmat et al. (2015), another finding that earnings management has a positive effect on the value relevance of earnings (Agostino et al., 2011; Rachmawati, 2019; Temile et al., 2018), there is no relationship between earnings management and accounting value relevance (Fattahi et al., 2014). The relationship of derivatives with earnings management and the value relevance of earnings is a research gap to place earnings management as a mediator of the effect of derivatives on the value relevance of earnings.

Earnings management is interference in the process of preparing external financial reporting, with the aim of obtaining personal benefits (Almadara, 2017). According to Scott (2014: 403) earnings management is a choice made by managers in determining accounting policies to influence reports to achieve certain goals. Earnings management can reduce the credibility of financial reports when used for decision making, because earning management is a form of manipulation of financial reports that is the target of communication between managers and external parties of the company. (Sitanggang, S. et al. 2020)

Second, model Ohlson (1995) which is a proxy for value relevance, found inconsistent results between researchers and inconsistent findings on the effect of earnings management on value relevance. In addition, several empirical studies state that the Ohlson model is very relevant for measuring the VRE variable. Finding Dahmash and Qabajeh (2012), that the Ohlson model shows a highly relevant value for public and commercial companies that have gone public on stock prices. The book value of equity and abnormal earnings are relevant values. It is a gap to test the effect of earnings management on VRE with Ohlson's model.

Third, empirical studies have been conducted to prove the relationship between profitability and earnings management as well as company growth variables as control variables (Gorganlidavaji and Vakilifard, 2014; Llukani, 2013; Ohlson, 2014). Firm size is used as a control variable for earnings management (Dang et al., 2017; Dechow et al., 1995; Kothari et al., 2005; Nguyen, 2015). These findings will be redeveloped in this study involving firm growth variables and firm size as earnings management control variables. In addition, the control variable for VRE is earnings persistence (Atash band et al., 2014; Sloan, 1996; Yang, 2018; Zach, 2001) and audit quality (Jensen and Meckling, 1976; Subanidja et al., 2016).

Fourth, there is a positive relationship between earnings management and cash flow which is in line with the model Jaggi et al. (2009) which is based on a cash flow based accrual model with company growth by measuring through changes in revenue and in

property, plant and equipment (PPE). Many empirical accounting research seeks to find the relevant value of accounting attributes in order to enhance the analysis of financial statements. Accounting attributes are thought to be of value relevance because these accounting attributes are statistically related to stock prices(Rachmawati, 2019). Value relevance of accounting information is often measured by the coefficient of determination (R2), from the price regression model which is based on the relationship between market values and accounting variables in the Ohlson model. Ohlson's model is a measure of value relevance that is widely used in many studies (Dahmash and Qabajeh, 2012; Der et al., 2016; Rivera et al., 2018).

II. Review of Literature

2.1 Profit Management

Earnings management is a form of intervention carried out intentionally by management in the external financial reporting process with the aim of obtaining personal gain. The manager manipulates earnings through earnings management so that profits appear as expected. Profit is the main measure in accounting and is considered a summary of the company's activities, able to summarize the company's past and present and to provide input for predictions in the future. Profit is also a measure of efficiency, and to assess investment risk. according toLeal et al. (2017) revealed that investors are more likely to be guided by earnings indicators than other indicators to make decisions.

There are a number of reasons why managers do earnings management. Earnings management is carried out to manipulate stock prices, increase management compensation, avoid violation of loan agreements, and avoid government regulations. Earnings management is also carried out to reduce the cost of capital(Altintas, Sari, & Otluoglu, 2017). Latif and Abdullah (2015) views that the policy of The International Financial Reporting Standards (IFRS) which gives managers greater flexibility in choosing alternative accounting treatments, indirectly contributes to making managers dare to practice earnings management. Beneish (2001) revealed that there is a relationship between earnings management incentives and regulations, debt and compensation contracts, insider trading and security insurance.

Model Jaggi et al. (2009), using total accruals (TAC) as the dependent variable and three proxies of operating cash flows [CFO (t-1), CFO (t), and CFO (t + 1)], and two proxies of accrual quality: earnings changes (Δ R) and property, plant and equipment (PPE).

$$TAC_{i,t} = \delta_0 + \delta_1 CFO_{i,t-1} + \delta_2 CFO_{i,t} + \delta_3 CFO_{i,t+1} + \delta_4 \Delta Rev_{i,t} + \delta_5 PPE_{i,t} + \varepsilon_{1i,t} \quad \text{..... (1)}$$

The notes for the first equation are as follows.

- The company's TAC at time t is calculated by the formula in equation 1a.
  TAC = (profit before extraordinary + depreciation + amortization) - CFO ..... (1a)
- All variables have been divided by total assets.
- 1 is the residue based on the Jaggi model.

2.2 Value Relevance of Earnings

Value relevance is an information perspective that sees financial statements as a provider of information for the valuation model. Value relevance reflects the primary function of accounting, which is concerned with providing useful information that enables investors to value securities and make rational decisions. Referring to the concept of value relevance, in order to be value-relevant, accounting information must be related to the current value of the company (Kimouche and Rouabhi, 2016).

This research uses Clean Surplus Theory(Feltham and Ohlson, 1995)to test the value relevance of earnings. Ohlson's model is used to estimate firm value based on the book value of equity plus the cash value of abnormal earnings. Clean Surplus Theory(Feltham and Ohlson, 1995) and modification (Botosan, 1997; Utami, 2006) as follows:

$$r_t = (B_t + E (x_{t+1}) – P_t) / P_t \quad \text{……………………………...……(2)}$$

Information:

Pt	= stock price in period t
Bt	= Book value per share period t
E(xt+1)	= Estimated earnings per share in period t + 1
rt	= Cost of equity capital in year t

Book value per share this year plus expected earnings next year minus current share price divided by current share price.Botosan (1997), using the Ohlson model to estimate the cost of equity capital and the higher the risk of stock returns will make investors increase the rate of cost of equity capital (Utami, 2006).

2.3 Derivative Transactions

Derivative is a contract whose value or profit opportunity is related to the performance of another asset which is referred to as the underlying asset. A more specific definition of a derivative is a financial contract between 2 or more parties to fulfill a promise to buy or sell assets/commodities that are traded as objects at a time and price which is a mutual agreement between the seller and the buyer.

The level of use of financial derivatives (TD) is measured using the total notional amount by measuring the amount of currency, shares, units of weight or volume, or other measures specified in the contract divided by the total assets of the previous year. This measurement has been used in studies(Allayannis, 2001; Barton, 2001; Huang et al., 2009).

$$\text{Derivative}_t \text{ Transaction} = \frac{\textit{Notional Amount Derivative}_t}{\textit{Total asset}_{t-1}} \quad \text{………………….(3)}$$

2.4 Derivative Transactions on Earnings Management

Research on the relationship between derivatives and earnings management activities is explained by Devi and Efendi (2018), that companies reduce tax payments by delaying the realization of derivative profits designed for hedging. The company delays the realization of profits while accelerating the realization of losses on non-hedged derivatives to reduce taxes paid. There was a reduction in the tax burden by accelerating the realization of non-hedged derivative losses, so it can also be said that the company carried out earnings management activities by minimizing the tax burden using derivative financial instruments. The researcher proposes the following hypothesis:

H1: Derivative transactions have a positive effect on earnings management.

2.5 Earnings Management on Value Relevance of Earnings

Earnings management with Ohlson's model is related to the value relevance of earnings, such as research Dahmash and Qabajeh (2012), that the Ohlson model shows a very relevant value for public and commercial companies that have gone public in the share price distribution. Ohlson's model is based on the theory of clean surplus accounting which became known as clean surplus (Feltham and Ohlson, 1995). The researcher proposes the following hypothesis:

H2: Earnings management has a negative effect on the value relevance of earnings.

2.6 Derivative Transactions on Value Relevance of Earnings

Derivatives contain relevant value information and other studies linking VRE with derivative instruments have been carried out among others by (Altintas et al., 2017; Cheng and Li, 2014; Feltham and Pae, 2000; Habib, 2004; Marquardt and Wiedman, 2004; Mostafa, 2017; Tucker and Zarowin, 2006). Studies on the effect of derivative instruments on earnings management have also been carried out by Murwaningsari et al. (2015), that there is a negative relationship between financial derivatives and the value relevance of earnings using the price and return model.

H3: Derivative transactions have a negative effect on the value relevance of earnings.

III. Research Methods

3.1. Variable Definition and Operation

This study uses two kinds of dependent variables, namely earnings management and value relevance of earnings. The explanatory variables consist of derivative transactions, firm growth, firm size, audit quality and earnings persistence. Measurements for research variables are as follows:

a. Derivative Transactions (TD), the measurement uses the total notional amount according to the currency stated in the contract divided by the total assets of the previous year according to the third equation.
b. *Value relevance of earnings*(VRE), measurement using clean surplus theory(Feltham and Ohlson, 1995) according to the second equation.
c. Earnings management (EM), measurement using the model (Jaggi et al., 2009) according to the first equation.
d. To calculate firm size and firm growth, the measurement uses the natural logarithm of total assets and asset growth.
e. To determine audit quality, the big four and other public accountants are used, and earnings persistence uses an accrual quality-based earnings persistence approach.

3.2. Population and Sample

The population of this study is non-financial companies on the Indonesia Stock Exchange (IDX) which have data for a five-year research period (2013-2017). Financial firms are excluded from the population, because (1) industry-specific accounting practices and derivatives use functions differ due to specific regulations, and (2) the financial firms sector has a large share of monetary assets. The sampling technique in this study uses purposive sampling, because the sample criteria are determined subjectively by the researcher(Cooper and Schindler, 2014:343). The sample criteria in the study are:

1. Non-financial companies that have derivative transactions registered in Indonesia and conducted derivative transactions during 2013-2017.
2. Non-financial companies that have complete financial statements for the year 2013-2017.

A complete summary of sample selection based on these two criteria can be seen in Table 3 below.

Table 3. Summary of Sample Selection

Criteria	BEI
Total number of companies listed on the Stock Exchange except finance	**480**
(The number of observations does not have derivative transaction data)	**(437)**
Number of observations that have derivative transaction data for 2013-2017	43
Number of observations that have complete financial statement data for 2013-2017	43
Number of company year observations in the sample	**215**

Source: Data processed from www.idx.co.id

3.3. Data Analysis Method

Data analysis using Smart Partial Least Square (PLS) version 3.2.8. Answering hypothesis 1 using equations in model 4 and answering hypotheses 2 and 3 using equations in model 5. The structural equation model is stated as follows.

a. $EM_{it} = \gamma_0 + \gamma_1 TD_{it} + \gamma_2 FS_{it} + \gamma_3 FG_{it} + \varepsilon_{1it}$ ……(4)

b. $VRE_{it} = \gamma_0 + \gamma_4 TD_{it} + \beta_1 EM_{it} + \gamma_5 KA_{it} + \gamma_6 EP_{it} + \varepsilon_{2it}$ …….. (5)

IV. Result and Discussion

4.1 Descriptive Statistical Analysis of Research Variables

This study consisted of 43 non-financial companies for a period of 5 years and there were 215 observations (N). Table 2 presents statistics to describe the variables based on the mean, minimum, maximum, and standard deviation values.

Table 4. Descriptive Statistics

Variable	N	Average	Minimum	Maximum	Standard Deviation
TD	215	0.09944	0.00000	0.87568	0.15801
EM (Jaggi)	215	0.03932	0.00012	0.30563	0.03852
VRE (Ohlson)	215	0.42993	-0.96021	19.52482	2.04184
FS (LNAsset)	215	20.68845	18.07552	23.80681	1.30977
FG (Asset)	215	0.05957	-0.27149	1.30168	0.17921
KA (Big Four)	215	0.63256	0.00000	1.0000	0.48323
EP (Residual)	215	0.00529	-0.16813	0.42941	0.07471

Source: IBM SPSS 22

The data in table 4 shows that the derivative transaction variable (TD) has a minimum value of 0.00000, not all companies consistently have derivative transactions every year and are indicated by a minimum value of 0 and a maximum value of 0.87568 or 87.6%. derivative transactions and the underlying value on which the derivative transactions are based. On average, the sample companies have derivative transactions of 10%. Using a scale from 0% to 100%, the average derivative transactions of the sample companies are still relatively small, namely 10%. The standard deviation value of 0.16 indicates that the variation of derivative transactions between sample companies is not too much different.

The earnings management variable (EM) Jaggi has a minimum value of 0.00012, there is a very small sample company in conducting earnings management (EM) Jaggi and a maximum value of 0.30563 or 30.6%, there are sample companies that are quite aggressive in

carrying out activities earnings management (EM) Jaggi. The average sample company performing earnings management (EM) Jaggi activities is 0.03932 or 3.9%. The standard deviation value of 3.9% indicates that Jaggi's earnings management (EM) variation is low.

4.2 Regression Model Estimation Results

Table 5 shows the estimation results of the regression model. This model consists of two panels, namely panel A: the results of the estimated path coefficients associated with testing hypotheses 1 to 3 and panel B: the results of the estimated path coefficients related to testing the direct and indirect effects with the Sobel Test. In addition, to test the proposed hypothesis, this study uses regression estimation in the model.

Table 5. Estimation Results of Structural Equation Model

Panel A. Path Coefficient Estimation Results Related to Hypothesis Testing 1 to 3							
Hypothesis	Causality Relationship	Coefficient Track	*Standard error*	*t-statistics*	Prob.		
1	TD → EM	0.228	0.060	3.795	0.000		
-	FS → EM	-0.092	0.064	1,440	0.075		
-	FG → EM	0.095	0.079	1,213	0.113		
2	EM → VRE	-0.164	0.067	2.426	0.008		
3	TD → VRE	-0.021	0.070	0.304	0.380		
-	EP → VRE	-0.170	0.074	2.287	0.011		
-	KA → VRE	-0.211	0.071	2,948	0.002		
Panel B. Path Coefficient Estimation Results Related to Testing Direct and Indirect Effects with Sobel Test							
	Mediation relationship: TD→ EM → VRE	Path Coefficient	*Standard error*	Multiplication coefficient track	*Standard error* Sobel	Z-stats	Prob. (2-tailed)
	TD → EM	0.228	0.060	-0.0365	0.0186	-2.0092	0.05300
	EM → VRE	-0.164	0.067				

Source: Data processed

4.3 Hypothesis Testing Results

In table 5, the t-statistic probability values in the causal relationship of TD to EM and EM to VRE are 0.000 and 0.008, respectively, still below the significance level (α) of 5%, while TD to VRE is 0.380 above the significance level (α). by 10%. Based on these conditions, hypothesis 1, derivative transactions have a positive effect on earnings management, hypothesis 2, earnings management has a negative effect on the value relevance of earnings, and hypothesis 3, derivative transactions have a negative effect on earnings value relevance, not proven.

Associated with tests that have more influence, direct derivative transactions on the value relevance of earnings or through earnings management, considering the probability value (2-tailed) on the Z-statistic for the Sobel test of 0.053 which is lower than the significance level of 10%, then with This result states that earnings management mediates the effect of derivative transactions on the value relevance of earnings. The direct effect of derivative transactions on the value relevance of earnings can be seen in the path coefficient, which is -0.021 (Table 5). While the indirect effect is calculated from the multiplication of the coefficient of the effect of derivative transactions on earnings management with the coefficient of the effect of earnings management on the value relevance of earnings. The coefficient of the influence of earnings management on the value relevance of earnings is -

0.164. The coefficient of the effect of derivative transactions on earnings management is 0.228. The product of the two is -0.164 x 0.228 = -0.037. The direct effect coefficient -0.021 is smaller than the indirect effect coefficient -0.037. Thus, what has a greater influence is the indirect effect, namely earnings management mediating the effect of derivative transactions on the value relevance of earnings.

Overall the research model is a fit model because both have a significant model together. In the estimation results of the structural equation model with the residual Jaggi model as a mediating variable, it is proven that derivative transactions are a strong signal to the occurrence of earnings management activities. Activities that delay or accelerate the recognition of gains or losses from derivative transactions can be a signal of positive earnings management. In line with the rationale of the agency theory of Jensen and Meckling (1976), that the manager as an agent has a performance contract that must be achieved, so that derivative transactions also have the potential to be part of the means of proving the performance contract. Responding to this condition, the principal or stakeholders certainly hope that the potential for earnings management does not occur as a result of derivative transaction activities.

In the same model, it is proven that earnings management has a negative effect on value relevance or earnings. These results support the agency theory rationale of Jensen and Meckling (1976), where the agent is bound by a contract to provide good performance for the issuer. Earnings management activities are proven to reduce the value relevance of earnings in this study. In line with the thinking of signaling theory (Spence, 1973). Furthermore, derivative transactions have a negative impact on the value relevance of earnings which is not proven. It can be interpreted that derivative transactions do not directly have information that is relevant to the income statements presented in the financial statements.

V. Conclusion

1. Derivative transactions have a positive effect on earnings management.

These results provide an interpretation that derivative transactions are followed by earnings management activities. Derivative transactions themselves are intended to manage risk, but risk management is also followed by earnings management activities. The results of this study support research Murwaningsari et al. (2015) states that derivatives are positively related to discretionary accruals, where in its implementation discretionary accruals are used in earnings management mode.

2. Earnings management has a negative effect on the value relevance of earnings.

The presentation of earnings with a high accrual side in the recognition of expenses and income will cause the relevance of the value of reported earnings to be low. On the other hand, the presentation of earnings with a small accrual side in the recognition of income and expenses will present real profits and make the relevance of the value of earnings presented in the financial statements higher. The results of this study support (Heshmat et al., 2015; Altintas et al., 2017), stated that earnings management practices reduce the value relevance of earnings and earnings management will be a negative signal for the value relevance of earnings.

3. Derivative transactions are not proven to have a negative effect on the value relevance of earnings.

One of the objectives of derivative transactions is to manage the risks faced by the issuer company. If the derivative used is speculative, then according to Aabo (2007), speculative derivatives lead to higher earnings volatility than hedging derivatives. With the increase in earnings volatility according to Graham et al. (2005), stock prices are less

responsive because the market prefers low earnings volatility. Thus, the use of speculative derivative transactions will weaken the value relevance of earnings.

By referring to some research evidence, this study provides the following suggestions.

a. Financial services authorities need to formulate regulations related to the presentation and disclosure of the financial statements of issuers or public companies in relation to derivative transactions.
b. Financial analysts and investors can evaluate and analyze whether derivative transactions are used to manage financial asset risk, risk mitigation and procedures for managing derivative transactions comply with accounting standards and applicable laws and regulations.
c. Derivative transactions must be carried out in accordance with the objectives in order to get a positive signal from investors. It is the duty of the board of commissioners or audit committee to carry out the supervisory function, especially on company activities related to the review of financial information, risk management, effectiveness of internal and external auditors, and compliance with applicable laws and regulations.
d. This study does not distinguish derivative transactions based on the types so that the conclusions are general, the next researcher can conduct research based on the types of derivative transactions carried out by the company.

References

Aabo, T. (2007). The Impact of Individual-Owners on Currency Speculation: the Case of Danish Non-Financial Firms. International Journal of Managerial Finance, 3(1), 92–107. https://doi.org/10.1108/17439130710721671

Agostino, M., Drago, D., & Silipo, DB (2011). The Value Relevance of IFRS in the European Banking Industry. Review of Quantitative Finance and Accounting, 36(3), 437–457. https://doi.org/10.1007/s11156-010-0184-1

Allayannis, G. (2001). The Use of Foreign Currency Derivatives and Firm Market Value. The Review of Financial Studies, 14(1), 243–276. https://doi.org/10.1093/rfs/14.1.243

Altintas, AT, Sari, ES, & Otluoglu, E. (2017). The Impact of Earnings Management on the Value Relevance of Earnings: Empirical Evidence from Turkey. Journal of International Social Research, 10(51), 885–891. https://doi.org/10.17719/jisr.2017.1823

Atashband, A., Moienadin, M., & Tabatabaenasab, Z. (2014). Examining the Earnings Persistence and Its Components in Explaining the Future Profitability. Interdisciplinary Journal of Contemporary Research in Business, 5(10), 104–117.

Barton, J. (2001). Does the Use of Financial Derivatives Affect Earnings Management Decisions? Accounting Review, 76(1), 1–26. https://doi.org/10.2308/accr.2001.76.1.1

Bartov, E., Givoly, D., & Hayn, C. (2002). The Rewards to Meeting or Beating Earnings Expectations. Journal of Accounting and Economics, 33(2), 173–204. https://doi.org/https://doi.org/10.1016/S0165-4101(02)00045-9

Bassiouny, SW, Soliman, MM, & Ragab, A. (2016). The Impact of Firm Characteristics on Earnings Management : an Empirical Study on the Listed Firms in Egypt. The Business and Management Review, 7(2), 91–101. https://doi.org/10.1109/TEC.2010.2041551

Beasley, M., Pagach, D., & Warr, R. (2008). Information Conveyed in Hiring Announcements of Senior Executives Overseeing Enterprise-Wide Risk Management Processes. Journal of Accounting, Auditing & Finance, 23(3), 311–332. https://doi.org/10.1177/0148558X0802300303

Beneish, MD (2001). Earnings Management : A Perspective. Managerial Finance, 27(12), 3–17. https://doi.org/10.1108/03074350110767411

Blom, M. (2009). The Effect of the Implementation of IFRS on the Level of Earnings Management. Erasmus University Rotterdam.

Botosan, CA (1997). Disclosure Level and the Cost of Equity Capital. Accounting Review, 72(3), 323–349.

Brav, A., Jiang, W., Ma, S., & Tian, X. (2018). How does hedge fund activism reshape corporate innovation? Journal of Financial Economics, 130(2), 237–264. https://doi.org/10.1016/J.JFINECO.2018.06.012

Cheng, CSA, & Li, S. (2014). Does Income Smoothing Improve Earnings Informativeness? – A Comparison between the US and China Markets. China Accounting and Finance Review, 16(2), 128–147. https://doi.org/10.7603/s40570-014-0010-6

Cooper, DR, & Schindler, PS (2014). Business Research Methods.

Dahmash, FN, & Qabajeh, M. (2012). Value Relevance of Ohlson Model with Jordanian Data. Interdisciplinary Journal of Contemporary Research in Business, 3(11), 551–560.

Dang, NH, Hoang, TVH, & Tran, MD (2017). Factors Affecting Earnings Management: The Case of Listed Firms in Vietnam. International Journal of Economic Research, 14(20), 117–134.

Dechow, PM, Sloan, RG, & Sweeney, AP (1995). Detecting Earnings Management. The Accounting Review, 70(2), 193–225.

Der, BA, Polak, P., & Masri, M. (2016). Investigation on the Value Relevance of Accounting Information: Evidence from Incorporated Companies in the Singapore Capital Market. Investment Management and Financial Innovations, 13(3), 9–21. https://doi.org/10.21511/imfi.13(3).2016.01

Devi, B., & Efendi, S. (2018). Financial Derivatives in Corporate Tax Aggressiveness. The Indonesian Journal of Accounting Research, 21(2), 251–268. https://doi.org/10.33312/ijar.360

Eragbhe, E., & Omokhudu, OO (2018). Value Relevance of Financial Derivatives : Evidence from Nigerian Listed Banks. European Journal of Business and Management, 10(17), 46–54.

Fattahi, R., Moeinaddin, M., & Abtahi, Y. (2014). Impact of Earning Management on Value Relevance of Accounting Information of the Firms Listed on the Tehran Stock Exchange.

Feltham, GA, & Ohlson, JA (1995). Valuation and Clean Surplus Accounting for Operating and Financial Activities. Contemporary Accounting Research, 11(2), 689–731. https://doi.org/10.1111/j.1911-3846.1995.tb00462.x

Feltham, GA, & Pae, J. (2000). Analysis of the Impact of Accounting Accruals on Earnings Uncertainty and Response Coefficients. Journal of Accounting, Auditing & Finance, 15(3), 199–220. https://doi.org/10.1177/0148558X0001500301

Fischer, M., Hanauer, MX, & Heigermoser, R. (2016). Synthetic Hedge Funds. Review of Financial Economics, 29(C), 12–22. Retrieved from https://econpapers.repec.org/RePEc:eee:revfin:v:29:y:2016:i:c:p:12-22

Francis, J., & Schipper, K. (1999). Have Financial Statements Lost Their Relevance? Journal of Accounting Research, 37(2), 319–352. https://doi.org/10.2307/2491412

Givoly, D., Hayn, C., & Lehavy, R. (2013). Analysts' Cash Flow Forecasts are Not Sophisticated: A Rebuttal of Call, Chen and Tong (2013). In SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2297608

Gorganlidavaji, J., & Vakilifard, H. (2014). The Effect of Firm Size and Growth Opportunity on Accounting Discretion and its Relationship with Future Stock Return (Management Opportunism Test). European Online Journal of Natural and Social Sciences, 3(3), 511–521. Retrieved from www.european-science.com

Graham, JR, Harvey, CR, & Rajgopal, S. (2005). The Economic Implications of Corporate Financial Reporting. Journal of Accounting and Economics, 40(1), 3–73. https://doi.org/https://doi.org/10.1016/j.jacceco.2005.01.002

Habib, A. (2004). Impact of Earnings Management on Value-Relevance of Accounting Information: Empirical Evidence from Japan. Managerial Finance, 30(11), 1–15. https://doi.org/10.1108/03074350410769344

Heshmat, N., Nahandi, YB, & Khanghah, VT (2015). The Effect of Real and Artificial Earnings Management on the Value Relevance of Earnings. Indian Journal of Fundamental and Applied Life Sciences, 5(S1), 1727–1741.

Huang, P., Zhang, Y., Deis, D., & Moffitt, J. (2009). Do Artificial Income Smoothing and Real Income Smoothing Contribute to Firm Value Equivalently? Journal of Banking & Finance, 33(2), 224–233. https://doi.org/10.1016/j.jbankfin.2008.07.012

Jaggi, B., Leung, S., & Gul, F. (2009). Family Control, Board Independence and Earnings Management: Evidence Based on Hong Kong Firms. Journal of Accounting and Public Policy, 28(4), 281–300. https://doi.org/10.1016/j.jaccpubpol.2009.06.002

Jensen, MC, & Meckling, WH (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. Journal of Financial Economics, 3(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Kimouche, B., & Rouabhi, A. (2016). The Impact of Intangibles on the Value Relevance of Accounting Information: Evidence from French Companies. Intangible Capital, 12(2), 506–529. https://doi.org/10.3926/ic.653

Kothari, SP, Leone, AJ, & Wasley, CE (2005). Performance Matched Discretionary Accrual Measures. Journal of Accounting and Economics, 39(1), 163–197. https://doi.org/10.1016/j.jacceco.2004.11.002

Latif, AS, & Abdullah, F. (2015). The Effectiveness of Corporate Governance in Constraining Earnings Management in Pakistan. The Lahore Journal of Economics, 20(1), 135–155. https://doi.org/10.1017/CBO9781107415324.004

Leal, LTY, Girao, LFDAP, Lucena, WGL, & Martins, VG (2017). Persistence, Value Relevance, and Accruals Quality in Extreme Earnings and Cash Flow Situations. Mackenzie Management Review, 18(3), 203–231. https://doi.org/10.1590/1678-69712017/administracao.v18n3p203-231

Llukani, T. (2013). Earnings Management and Firm Size: An Empirical Analyze in Albanian Market. European Scientific Journal, 9(16), 135–143.

Marquardt, CA, & Wiedman, CI (2004). The Effect of Earnings Management on the Value Relevance of Accounting Information. Journal of Business Finance & Accounting, 31(3❤4), 297–332.

Minton, BA, Stulz, R., & Williamson, R. (2009). How Much Do Banks Use Credit Derivatives to Hedge Loans? Journal of Financial Services Research, 35(1), 1–31. https://doi.org/10.1007/s10693-008-0046-3

Mostafa, W. (2017). The Impact of Earnings Management on the Value Relevance of Earnings: Empirical Evidence from Egypt. Managerial Auditing Journal, 32(1), 50–74. https://doi.org/10.1108/MAJ-01-2016-1304

Murtini, H., & Lusiana. (2016). Earning Management and Value Relevance Before and After the Adoption of IFRS in Manufacturing Company in Indonesia. Review of Integrative Business and Economics Research, 5(1), 241–250.

Murwaningsari, E., Utama, S., & Rossieta, H. (2015). The Combined Effects of Financial Derivatives and Discretionary Accruals on the Value Relevance of Earnings and the Book Value of Equity. Gajah Mada International Journal of Business, 17(2), 179–198. https://doi.org/10.22146/gamaijb.6909

Nguyen, B., & Cuong, H. (2015). Interim Financial Reporting in the Asia-Pacific Region.
Ohlson, J.A. (1995). Earnings, Book Values and Dividends in Equity Valuation. Contemporary Accounting Research, 11(2), 661–687.
Ohlson, J.A. (2014). Accruals: An Overview. China Journal of Accounting Research, 7(2), 65–80. https://doi.org/10.1016/j.cjar.2014.03.003
Ozek, P. (2016). An Empirical Investigation on The Use of Derivative Instruments by Industrial Firms in Turkey. Finansal Araştırmalar ve alışmalar Dergisi, 8, 173–187. https://doi.org/10.14784/jfrs.23358
Rachmawati, S. (2019). Company Size Moderates the Effect of Real Earning Management and Accrual Earning Management on Value Relevance. Ethics, 18(1), 133–142. https://doi.org/10.15408/etk.v18i1.9381
Rakowski, D., Shirley, SE, & Stark, JR (2017). Tail-Risk Hedging, Dividend Chasing, and Investment Constraints: The Use of Exchange-Traded Notes by Mutual Funds. Journal of Empirical Finance, 44, 91–107. https://doi.org/10.1016/J.JEMPFIN.2017.08.003
Rivera, SI, Román, J., & Schaefer, T. (2018). An Application of the Ohlson Model to Explore the Value of Big Data for AT&T. Academy of Accounting and Financial Studies Journal, 22(1), 1–9.
Sitanggang, S. et al. (2020). Analysis ofthe Influence ofManagerial Ownership, Audit Quality and Audit Committee on Income Management (Study on Manufacturing Companies in the Consumer Goods Sector Listed on the Indonesia Stock Exchange 2014-2018). Budapest International Research and Critics Institute-Journal (BIRCI-Journal). P. 2521-2533.
Sloan, RG (1996). Do Stock Prices Fully Reflect Information in Accruals and Cash Flows about Future Earnings? The Accounting Review, 71(3), 289–315.
Spence, M. (1973). Job Market Signaling. The Quarterly Journal of Economics, 87(3), 355–374. https://doi.org/10.2307/1882010
Subanidja, S., Rajasa, A., Suharto, E., & Atmanto, JD (2016). The Determinants of Firm Value: the Role of Earnings Management and Good Corporate Governance. Corporate Ownership & Control, 13(4), 609–615.
Temile, SO, Mohammed, A., & Jatmiko, D. (2018). Earnings Management and Value Relevance in Nigeria: A Pre and Post Ifrs Analysis. The International Journal of Social Sciences and Humanities Invention, 5, 4672–4680. https://doi.org/10.18535/ijsshi/v5i5.05
Tucker, JW, & Zarowin, PA (2006). Does Income Smoothing Improve Earnings Informativeness? The Accounting Review, 81(1), 251–270.
Utami, W. (2006). The Effect of Earnings Management on the Cost of Equity Capital (Study on Public Company Manufacturing Sector). The Indonesian Journal of Accounting Research, 9(2), 178–199.