

DO ARTIFICIAL AND REAL INCOME SMOOTHING INCREASE EARNINGS INFORMATIVENESS EQUIVALENTLY IN INDONESIA?

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ABSTRACT

This research aims to examine the relationship between artificial and real income smoothing and earnings informativeness. Real income smoothing is represented by the ownership of hedging instruments by the company, while artificial income smoothing is one of the earnings management patterns carried out by the company. Furthermore, earnings informativeness is represented by future earnings response coefficient (FERC). The research method in the study employs a quantitative method using multiple linear regression analysis. This study uses panel data with a basis from 2014 to 2016. The companies employed in the study are Indonesia non-financial companies listed on IDX in the period 1 January 2010 to 31 December 2017 to calculate artificial income smoothing and FERC. The results suggest that real and artificial income smoothing is not associated with earnings informativeness. The company does not employ real and artificial income smoothing to increase earnings informativeness, while investors do not respond to the two types of income smoothing conducted by the company as an efficient act.

Keywords: income smoothing, earnings informativeness

INTRODUCTION

Investors are the main stakeholders of financial statements that need a complete source on the firm financial condition (Kieso et al., 2018). This information could be used for investors in evaluating and analyzing investments related to the risk and return on firm investment. One of the information that is very important for investors in financial statements is the earnings. Company earnings information could be used by investors to assess performance, predict future earnings and estimate investment risk (Kirschenheiter & Melumad, 2002). The use of accounting earnings in assessing companies could be considered by the association between accounting earnings and company stock returns. Earnings are considered to have information content if there is an association between earnings and stock returns.

Early research regarding the association between earnings and stock returns was conducted by Ball & Brown (1968) which proved that there was a relationship between both of them. Research on earnings information content was continued by Beaver (1968) who examined the major influence and direction of unexpected earnings on the magnitude and direction of stock returns. Beaver (1968) found that unexpected earnings have a positive effect on the size and direction of stock returns. The further research which examined the association between accounting earnings and stock returns considered as earnings response coefficient, which is defined as the effect of unexpected earnings on stock returns (Choi & Jung, 2007).

Provided the importance of earnings quality, investors should not only look at the company's financial statements by focusing on the profit and loss component without regard to the procedures used to produce information about the earnings. This condition causes company managers to take actions that make financial reports good, to maintain the survival of the company so that it runs stable to attract the attention of investors to invest (Tucker & Zarowin, 2006). Therefore, the management is probably to act of income smoothing to attract investors so that the offered stock price meets the company's expectations.

The income smoothing is a signaling technique that is intended to provide a signal that could predict future earnings more accurately so that income smoothing would have a beneficial impact on the firm value (Tucker & Zarowin, 2006). Income smoothing is one part of earnings management often leads to a perception that is not good from the public. Breton & Stolowy (2000) suggested that useful information is relevant and reliable, so with the earnings management activities, reliability would be reduced because in earnings management there is a refraction of measurement of reported earnings (raised or lowered). The act of earnings management occurs because of opportunities that are limited by accounting standards so that these actions are not violations that lead to manipulation.

Regarding the information side of income smoothing, Zarowin (2002) stated income smoothing actions with the stock price of a company. Informative stock prices contain some information about future earnings and future cash flow. The study concluded that companies with a higher level of income smoothing had more value on the informatization of their stock prices. The research implied that managers employ income smoothing to disclose the future profitability of the company. Subsequent investigation conducted by Tucker & Zarowin (2006) suggested that income smoothing could be an informative side to future earnings. The current market reaction could be used to predict future earnings. Tucker & Zarowin (2006) also found that income smoothing could be an informative side of a company where companies make more income smoothing, then future earnings from the company are reflected in the current stock price.

Managers use their discretion to make income smoothing across periods so that companies may report earnings in each period not reflecting economic income from that period (Trueman & Titman, 1988). When managers conduct income smoothing over

time, these behaviors could increase or disrupt earnings informativeness depending on managerial incentives for these income smoothing actions. Chaney & Lewis (1995) developed a model where managers of good companies make income smoothing to convey their personal information, which allows investors to predict future earnings better. Also, Sankar & Subramanyam, (2001) made a model of two periods of pure exchange economies in which managers have personal information about future earnings. The study suggested that managers make income smoothing in the first year to communicate their personal information through reported profits. On the contrary, managers may act income smoothing to cover the company's real performance, so that income smoothing actions are dangerous for investors.

Furthermore, Bhattacharya et al. (2003) and Jayaraman (2008) suggested that income smoothing measures distort earnings content and cash flow, which leads to higher income. Leuz et al. (2003) found that the company's internal actions made income smoothing to hide the actual company's performance. Furthermore, Myers et al. (2007) proved that companies use income smoothing as a tool of earnings management to maintain the continued increase in profit trends artificially. According to Hepworth (1953) in Tucker & Zarowin (2006), there are several reasons for companies to carry out income smoothing actions. First, income smoothing measures could decrease earnings and increase costs in the current year to reduce tax debt. Second, income smoothing could boost investor confidence, because it supports earnings stability and desired dividend policy. Third, income smoothing measures could strengthen the relationship between managers and employees, because earnings information that increases sharply would distribute the possibility of a salary increase request so that this action could avoid requests for salary increases by employees. Fourth, income smoothing measures have a psychological impact on the economy, where progress and setbacks could be compared, and waves of optimism and pessimism could be suppressed. The same thing was stated by Beidleman (1973) in Tucker & Zarowin (2006), that income smoothing is a management effort of a company to reduce variations that are not normal in its earnings to the extent permitted by accounting and management principles.

Supporting the above statement, Huang et al. (2009) classified income smoothing as artificial income smoothing and real income smoothing. Real income smoothing that occurs when management takes the effort to use economic transactions or events in the company to produce an even income stream. In contrast to that, artificial income smoothing is an income smoothing that occurs when management regulates accounting records to provide a flat earnings stream.

Several previous studies have examined income smoothing on earnings informativeness. Hunt et al. (2000) found that income smoothing increases the Earnings Response Coefficient. Tucker and Zarowin (2006) applied the Future Earnings Response Coefficient (FERC) framework, which was subsequently named as earnings informativeness. The study found that income smoothing is positively associated with earnings informativeness. Other research conducted by Cheng et al. (2014) proved that the income smoothing undertaken by the companies increases both ERC and FERC. Meanwhile, Cheng & Li (2014) found that income smoothing is positively associated with FERC for firms in the United States and China. Using Korean firms, Shin et al. (2019) documented that income smoothing based on related party transactions improves future earnings.

This study aims to examine the relationship between artificial and real income smoothing and earnings informativeness in Indonesia. Similar to other developing countries, some important features in developing countries are higher transaction costs, multiple tax regimes, lack of transparency, illiquidity, non-synchronous trading, lack of regulations, and weak enforcement of contracts (Kumari et al., 2017). Financial markets in developing countries often could not function smoothly because the physical and institutional infrastructure is underdeveloped, and governance is weakened by corruption.

In Indonesia, the studies related to the examining of income smoothing on earnings informativeness have been carried out by several researchers. Using the sample 104 non-financial companies listed on the Indonesia Stock Exchange (IDX) from 2004 up to 2011, Agustiningsih (2014) suggested that income smoothing could strengthen the relationship between future earnings and stock return. This study proved that income smoothing could be as efficient communication so that the information produced by the company could significantly be used as predictions of future information. Furthermore, Firmansyah (2017) employed data of Indonesia non-financial companies from 2008 to 2013, proved that income smoothing is not associated with earnings informativeness. The study is relevant with Nazar (2017) who examined data of Indonesia companies as well. As a result of the three studies, still, there was the inconsistency of the results so that this study aims to re-examine the effect of income smoothing on earnings informativeness in Indonesia. The three previous studies used ordinary least square; this study employs panel data regression in examining income smoothing on earnings informativeness. The context of income smoothing in previous studies employed artificial income smoothing. Besides using artificial income smoothing, this study also applies real income smoothing to examine its effect on earnings informativeness. The use of the real income smoothing concept follows Huang et al. (2009), namely the ownership of hedging instruments by companies.

To control the equation model, this study employs control variables namely leverage and firm size. Nofianti (2014) proved that leverage and firm size are associated with earnings response coefficient. Therefore, those variables are expected to have an association with FERC.

HYPOTHESES DEVELOPMENT

According to Ross (1977), signaling theory was developed regarding the existence of asymmetric information of well-informed managers as well as poor-informed stockholders. The theory highlights the idea that managers would provide good news to investors to increase the firm value. However, investors are not easy to trust the information, because managers are interested parties in the company so that the company would try to do signaling on their financial policy by consuming huge costs that are generally carried out by large companies. Signals are an expensive process in the form of deadweight costing that aims to ensure

investors about the firm value (Ross, 1977). Good signals could not be received by other companies which are categorized as smaller companies because of cost factors.

Relevant with that, Megginson (2010) stated that if managers recognize that their company is "strong" while investors for some reason do not recognize this, managers could distribute dividends (or aggressively buy back shares) with the expectation the quality of their company's signals to the public. Signals effectively separate strong companies from weak companies (so that strong companies could provide their type signals to the market), it becomes expensive for a weak company to mimic the actions taken by reliable companies.

Research with a focus on the relationship of the current period of stock returns with future information, conducted by Zarowin (2002) who argued that firms with a higher level of income smoothing would have a higher coefficient also on profit as well as cash flow. This result suggested that the level of income smoothing is associated with information on stock prices. The research was further strengthened by Tucker & Zarowin (2006) who focused on the relationship between return and earnings information in the future. The study proved that companies that do more income smoothing and earnings in the future could be represented in current stock returns compared to companies that conduct little income smoothing, so that share prices contain more news about future earnings when a company makes income smoothing. This study is relevant to Cheng et al. (2014), Cheng & Li (2014), and Shin et al. (2019).

In Indonesia, research related to the testing of income smoothing on profit informativeness has been carried out by several researchers. Using the sample Agustiniingsih (2014) who found that the study sample included 104 non-financial companies listed on IDC from 2004 up to 2011. The study was carried out multiple regression analysis with the ordinary least square. The result suggested that income smoothing could strengthen the relationship between future earnings and stock return. This study proved that income smoothing do not aim as efficient exchanging information so that the information produced by the company could importantly be consumed as predictions of expected information. Furthermore, using data from non-financial companies from 2008 to 2013, Firmansyah (2017) found that income smoothing is not associated with earnings informativeness. The study is relevant with Nazar (2017) who examined data of Indonesia companies as well.

In this study, income smoothing measures consist of real income smoothing and artificial income smoothing. Real income smoothing relates to management action to use economic transactions or events to produce an even income stream, while artificial income smoothing relates to management regulates accounting records to provide a flat earnings stream. Income smoothing is considered an action that is effective because company management adds earnings transparency in communicating information internally (Scott, 2015). Therefore, it is expected that investors consider real income smoothing and artificial income smoothing to provide adequate information on earnings informativeness, especially future earnings. Relevant to the empirical evidence above, the hypothesis proposed in this study as follows:

H1: Real income smoothing is positively associated with earnings informativeness.

H2: Artificial income smoothing is positively associated with earnings informativeness.

RESEARCH METHODS

DATA SAMPLING

The method employed in this research is a quantitative method. The examining was conducted by multiple linear regression analysis using panel data. The technique for selecting samples used is using a non-random sampling technique. The selection of samples used in this study was carried out with several criteria. First, the firms employed in the sample are non-financial companies that have registered their shares on the IDX from January 1, 2010, up to December 31, 2017. The selection of the samples according to the base year used is 2014, 2015 and 2016, while in 2015, 2016, 2017 is used to calculate next year's return and next year's earnings for the FERC basic equation. The period of 2010 to 2016 is used for the calculation of income smoothing. Second, companies that provide financial statements in rupiah. Third, companies that have annual financial reports with complete information during 2010-2017. The data employed is sourced from www.idx.co.id and finance.yahoo.com.

OPERATIONAL DEFINITION OF VARIABLES

In this study, the dependent variable is earnings informativeness which is represented by FERC follows Collin et al. (1994) with a model regression as follows:

$$R_t = \beta_0 + \beta_1 E_{t-1} + \beta_2 E_t + \beta_3 E_{t+1} + \beta_4 R_{t1} + \varepsilon_t$$

In the regression model, E_{t-1} and E_t are earnings per share (EPS) for Year $t-1$ and t , respectively, and E_{t+1} is EPS for Year $t + 1$, divided by stock price at the beginning of Year t . R_{t1} is the stock return in Year $t + 1$. The purpose of Collins et al. (1994) is to maximize R^2 over the return-earnings model. Collins et al. (1994) included the next 3 (three) years of earnings and returns in the regression. The purpose of this study is only to examine FERC, not maximize R^2 by including more years ahead. Therefore, this study only includes one period ahead in regression. With a horizon of only one year, analysis becomes consistent, which focuses on next year's earnings forecasting. Furthermore, a longer earnings horizon would make it difficult to forecast, so it would be easy to detect it with the closest year.

Furthermore, independent variables in this study are artificial income smoothing and real income smoothing. The proxy employed for artificial income smoothing in this study follows Tucker & Zarowin (2006), with a negative correlation between

changes in discretionary accrual proxy (ΔDAP) and changes in pre-discretionary income (ΔPDI). To estimate discretionary accruals, this study employs a cross-sectional Jones model modified by Kothari et al. (2005), as follows:

$$accruals = a \left(\frac{1}{TAt - 1} \right) + b \frac{\Delta sales_t}{TAt - 1} + c \frac{PPE_t}{TAt - 1} + dROAt + \epsilon_t$$

Accruals are calculated from income before extraordinary minus the cash flows from operations less extraordinary items in year t divided by a total asset of year t-1. The above equation is estimated cross-sectional every year to produce expected (non-discretionary) accruals and the difference between observed value and fitted value (residual ϵ_t) is discretionary accrual predicted (DAP). Pre-discretionary income (PDI) is calculated by the year t net income that has been divided by total asset year t-1 reduced by DAP. Income smoothing is calculated as a negative correlation of changes in DAP and PDI, using the current year and the last four years -Corr (ΔDAP_{it} , ΔPDI_{it}). The higher the correlation, the more likely the company is conducting income smoothing.

Meanwhile, real income smoothing in this study is represented by a hedging instrument. The proxy employs dummy variable 1 for companies that report the existence of hedging derivatives while 0 for those that do not report the presence of derivatives for hedging as Huang et al. (2009). Furthermore, the control variables in this study are firm size and leverage. Firm size in this study follows the proxy employed by Nofianti (2014) namely the logarithm of the company total assets. While, the proxy is used for leverage in this study follows Nurhaqiqi & Suryarini (2018), Nofianti (2014) namely total debt is divided by total assets.

Below is shown the model in this study:

$$R_{it} = \beta_0 + \beta_1 E_{t-1} + \beta_2 E_t + \beta_3 E_{t+1} + \beta_4 R_{t-1} + \beta_5 IS_t + \beta_6 IS_t * E_{t-1} + \beta_7 IS_t * E_t + \beta_8 IS_t * E_{t+1} + \beta_9 IS_t * R_{t-1} + \beta_{10} SIZE_t + \beta_{11} LEV_t + \epsilon_t \dots \dots \dots (1)$$

$$R_{it} = \beta_0 + \beta_1 E_{t-1} + \beta_2 E_t + \beta_3 E_{t+1} + \beta_4 R_{t-1} + \beta_5 HDG_t + \beta_6 HDG_t * E_{t-1} + \beta_7 HDG_t * E_t + \beta_8 HDG_t * E_{t+1} + \beta_9 HDG_t * R_{t-1} + \beta_{10} SIZE_t + \beta_{11} LEV_t + \epsilon_t \dots \dots \dots (2)$$

Where:

- R_{it} : annual stock return for year t, measured over the 12 month period ending December 31
- E_{it} : income available to common shareholders before extraordinary items in year t; divided by market value of equity at the beginning of the year t
- E_{t-1} : income available to common shareholders before extraordinary items for the year before year t; divided by market value of equity at the beginning of the year t
- E_{t+1} : income available to common shareholders before extraordinary items for the year t+1, divided by market value of equity at the beginning of the year t.
- R_{t+1} : annual stock returns for year t+1
- IS_t : income smoothing conducted in the current year.
- Hedge_t : 1 for companies that report the existence of hedging derivatives while 0 for those that do not report the existence of derivatives for hedging
- LEV_t : total debt divided by total assets in year t
- $SIZE_t$: Natural logarithm of total assets in year t

RESULTS AND DISCUSSION

The sampling process starts with knowing the number of companies listed on the IDX as of September 1, 2018, totaling 589 companies. Companies that must be excluded from the sample are companies listed on IDX in 2017 amounted of 28 companies. Data needed for tax risk and income smoothing variables is t-4 years, so the next process is to calculate the number of companies listed on the IDX after January 1, 2010, until December 31, 2016. This criterion is intended to avoid the existence of incomplete financial report data. The total sample selection was 66 companies for three years with a basis for 2014 to 2016. Therefore, the total sample used in this study is 198 firm-year.

Descriptive statistical analysis in this study is explained by using the mean, median, standard deviation, maximum, minimum. A summary of descriptive statistics for variable data is presented in Table 1, as follows:

Table 1 Descriptive Statistics of Variables

Variables	Obs	Mean	Med	Std. Dev	Min	Max
R_t	198	0.0318	0.0050	0.1728	-0.0643	1.5093
E_{t-1}	198	0.1821	0.0693	0.3745	-0.7418	3.1526
E_t	198	0.2569	0.0733	1.2327	-0.6852	16.0592
E_{t+1}	198	0.2211	0.0691	1.2080	-0.6302	16.7475
R_{t+1}	198	0.0211	0.0041	0.1314	-0.0643	1.4236
IS	198	0.7614	0.9487	0.4371	-0.9972	1.0000
Hedging	198	0.2121	0.0000	0.4098	0.0000	1.0000
Leverage	198	0.4239	0.4146	0.1774	0.0006	0.8047
Size	198	29.0242	28.9818	1.5820	25.2954	33.1988

From the table above, it could be concluded that R_t is higher than R_{t+1} for mean, median and standard deviation. Meanwhile, E_t is higher than E_{t-1} and E_{t+1} for mean, median and standard deviation. Generally, Indonesia companies conduct artificial income

smoothing. However, there are only several companies in Indonesia which have derivatives for hedging purpose. Furthermore, Indonesia companies have similar value for mean and median, but the variation of leverage is quite larger. Lastly, the firm size in Indonesia shows that there are various companies in Indonesia from total assets perspective.

Furthermore, the model regression test results are shown in table 2 as follows:

Table 2 Equation Model Regression Test Results

Variable	Model 1			Model 2		
	Coef	t-Stat	Prob.	Coef	t-Stat	Prob.
C	1.007	2.598	0.005 ***	-0.347	-0.910	0.182
E t-1	0.035	0.603	0.274	0.067	5.461	0.000 ***
Et	0.027	0.320	0.375	0.003	1.175	0.121
E t+1	0.026	0.534	0.297	0.003	1.065	0.144
R t+1	0.018	0.096	0.462	-0.277	-3.862	0.000 ***
IS	-0.013	-0.681	0.249			
IS*E t-1	-0.051	-0.841	0.201			
IS*Et	-0.028	-0.337	0.368			
IS*Et+1	-0.027	-0.546	0.293			
IS*Rt+1	-0.378	-1.818	0.036 **			
HEDGE				0.012	0.279	0.390
HDG*Et-1				-0.221	-1.107	0.135
HDG*Et				0.171	1.059	0.146
HDG*Et+1				0.062	0.436	0.332
HDG*Rt+1				0.222	0.838	0.202
LEV	-0.100	-9.919	0.000 ***	-0.128	-4.068	0.000 ***
SIZE	-0.032	-2.366	0.010 **	0.015	1.124	0.132
Adjusted R ²	0.6079			0.4737		
F-Stat	5.0196			3.3339		
Prob (F-Stat)	0.0000			0.0000		

From the examining of the hypothesis, it is known that artificial income smoothing does not affect earnings informativeness. The result is not relevant to the research of Tucker and Zarowin (2006), Cheng et al. (2014), Cheng and Li (2014). Also, the result is not in line with Agustini (2014) but the line with Firmansyah (2017) and Nazar (2017). These result suggested that income smoothing conducted by Indonesia companies could not explain the informativeness of future earnings. The result of this study implies that investors do not respond to income smoothing information as an act of management efficiency in generating earnings in the future, as well as opportunistic actions of managers in stabilizing earnings. As a result, investors do not assume that income smoothing is a signal to them whether it is good news or bad news.

Based on this study, income smoothing could not be used as a basis for providing information about future earnings, so that investors could not employ economic decisions from this result. Also, Indonesia investors are expected to be less familiar with income smoothing carried out by the companies. It is possible for investor characteristics in this study is employing one of the developing countries that rarely use financial statement information in decision making. Therefore, income smoothing could not be applied as equipment to capture future earnings information regarding returns obtained in the current year.

By using the second model, the examining model suggests that real income smoothing is not associated with earnings informativeness. The result indicates the same effect by examining the artificial income smoothing on earnings informativeness. Investors do not respond to both types of income smoothing as an efficient management action. Real income smoothing represented by hedging instruments is not essential information for investors, whereas hedging could be used as a tool to mitigate risk and stabilize earnings. Hedging instruments not only lead to stable earnings but also contribute to better performance so that they should be able to reduce the uncertainty caused by the company's operational performance (Kwong, 2016). In the Indonesian context, there are misperceptions both from the companies and the investor's side. The companies do not employ the use of hedging instruments to mitigate risks in future earnings volatility.

Meanwhile, Indonesia investors are lack of knowledge to understanding the role of hedging instruments. Whereas, those could generate stable future earnings. The low use of hedging instruments in Indonesia is one of the causes of the uselessness of this information. Also, the recognition and disclosure of mandatory hedging instruments should enable companies to be more prudent in reducing policies that result in increased earnings volatility (Tessema, 2016).

Furthermore, information on income smoothing originating from financial statements in Indonesia is not responded by investors. Septyanto (2013) stated that investors in Indonesia do not use financial statement information in making investment decisions. Also, Aprilianto et al. (2014) found that individual investors in Indonesia do not use accounting information as a decision-making tool because more individual investors in Indonesia are included in the group of naive investors who are not sophisticated in analyzing accounting information. Therefore, income smoothing from both real and artificial actions carried out by the company could not reflect to earnings informativeness.

CONCLUSIONS AND IMPLICATIONS

The study concluded that real and artificial income smoothing are not associated with earnings informativeness. The two types of income smoothing are signals from companies that are not responded to Indonesia investors in increasing earnings informativeness. The companies do not two types of income smoothing for delivering good news and bad news to investors related to future earnings while the investors do not assume that the two types of income smoothing are not essential information for decision making.

This study only employs data of Indonesia companies, so this results of the study do not exhibit the same condition for other developing countries. The future study could use more samples by increasing the number of years of research and the use of company data in other developing countries as well as regional data on companies to compare the results of this study. Based on the results of this study, companies in Indonesia must realize that both income smoothing conducted with real actions and artificial actions could not be a side of earnings informativeness. Furthermore, this study suggests the Indonesian Accounting Standard Board should strive to regulate the disclosure of information originating from financial reports that could easily be read by users of financial statements, especially by investors. Also, the Indonesian Financial Services Authority needs to educate investors in the use of information sourced from financial reports for investment decision making.

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