Income smoothing and market performance: empirical study on manufacturing companies listed in Indonesia stock exchange

by Mukhtaruddin Mukhtaruddin

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AUTHORS	Kencana Dewi Mukhtaruddin http://orcid.org/0000-0003-2743-8080 Iqbal Agung Prayudha

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Kencana Dewi (Indonesia), **Mukhtaruddin** (Indonesia), **Iqbal Agung Prayudha** (Indonesia)

INCOME SMOOTHING AND MARKET PERFORMANCE: EMPIRICAL STUDY ON MANUFACTURING COMPANIES LISTED IN INDONESIA STOCK EXCHANGE

Abstract

In the age of modern accounting, the era where income information is viewed to be no longer the main information that investor seeks, income smoothing is proven to be still existing. This study aims to find why income smoothing (*IS*) still exists in Indonesia Stock Exchange (*IDX*) by analyzing its effect on the market performance (*MP*). The study divides MP into three perspectives: market response is representing current investor; market risk (*MR*) is representing potential investor; and market value (*MV*) is representing the management. Purposive sampling method is applied in this study and 65 companies are examined throughout 2011–2013.

Using three models to analyze each of the relation, the results shows that *IS* only significantly affects the *MP* of companies in the aspect of market response, while the other aspects, *MR* and *MV*, yield insignificant results.

Keywords income smoothing, market performance, market response, market risk, market value

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Kencana Dewi, Associate Professor, Accounting Department, Faculty of Economics, Sriwijaya University, Indonesia.

Mukhtaruddin, Associate Professor, Accounting Department, Faculty of Economics, Sriwijaya University, Indonesia.

Iqbal Agung Prayudha, Bachelor Degree, Accounting Department, Faculty of Economics, Sriwijaya University, Indonesia.

INTRODUCTION

Income is one of the information contained in the financial statements and important for the internal and external users. Income information is a component of the company's financial statements which aims to assess the performance of management, help estimate the ability of a representative profit in the long term, and to assess investment and loan risks (Sepasi, 2007). Income information is an important factor in assessing the management accountability. It is also to help the owner or other party doing assessment to the earning power of the company in the future. Due to the nature of information availability, general investors based their judgements mostly on financial information. However, investors often focus only on income part of the information regardless of the procedure used to generate it. It encourages managers to manipulate the information and "dress" the income in their efforts to make it look good financially. The manipulation can be done by performing *IS* which aims to reduce abnormal variations in income information within the limits allowed in accounting practices and principles (Solihin, 2004).

IS is one of earnings management (*EM*) method involving a reduction in the intertemporal volatility of reported earnings relative to economic earnings, thus making income look more stable over time and yield better market response (Dey, 2004). In Indonesia, the practice of *IS* has been found in companies listed in Indonesia Stock Exchange (*IDX*) (Ilmainir, 1993). Various firm-specific characteristics, such as firm size, leverage, profitability and growth, also found to affect the extent of *IS* practices. In several studies, *IS* is even often seen as deceiving, misleading, and immoral method used by managements trying to take an advantage of market response (Muid, 2005). Even when sophisticated investors are found to be unaffected by such method (Dey, 2004), many studies still found that the general and less-informed investors are affected by *IS* practices in their judgements.

IS is associated with the information content of yearly financial report, thus, making research on the information content of earnings performed by Zarowin (2002) become very supportive. The study found that if the annual earnings announcement contains information, variability changes will appear larger on currently announced earnings than other times during the year. Because there is a change in the equilibrium value of the stock price during the announcement period. Earnings announcement is said to contain information if earnings are announced different from those predicted by the earnings investors. In such conditions certainly reflected, the market will react in the movement of stock prices on the announcement period. From the information provided by management, the market participants will make predictions and determine investment decision. It can be observed in the profit and loss account of a company which shows the magnitude earnings that are relatively stable from year to year. Some quite dynamic price changes could also open up opportunities for the management to perform manipulation by *IS*. For the general and less-informed investors, income information plays a huge part in their judgements. However, previous studies have shown various results regarding the relation between *IS* and *MP* of some companies. Muid (2005) research result showed that *IS* has an insignificant impact on the *MP*. The sample of this research however only consists of 32 companies (12 smoothers) due to the inavailability of the data. Solihin (2004) took an interesting approach in his study by adding size as a controlling variable and it shows a significant relation between *IS* and market reaction.

There are many factors affecting *MP*, moreover recently with the emergence of sustainability reporting, where financial information is seen not as important factor as before, previous research suggested that income is still the most important factor. Solihin (2004) in his study analyzing the *IS* effect on the *MV* calculated that the adjusted *R*-square of the variable reach as high as 98.4% which suggests that income is still the most significant factor in affecting *MP*.

In this study, samples are divided into two categories such as smoother and non-smoother companies. Smoother companies are companies that practice *IS* in their financial reporting. Non-smoother companies are companies that do not practice *IS* in their financial reporting. Manufacturing companies are chosen as the starting population because previous study proves that *IS* was mostly practiced by manufacturing companies. Therefore, the inclusion of the other company is avoided because it may distilate the study result (Muid, 2005). As for the effect of *IS*, *MP* is to be categorized into three aspects: market response, which is proxied by Cumulative Abnormal Return (*CAR*), *MR*, which is proxied by Standard Deviation of stock return (*SD*), *MV*, which are proxied by Ln of Market Value of Equity (*MVE*).

Market response is chosen to be one of the measurement of *MP* because the stability of market response marks the stability of companies day-to-day business. And this, in the perspective of current investors, means a stable earning per share and a stable capital gain. *CAR* is chosen as the proxy, because *CAR* is more suitable for the nature of the study, which is about stability of income. The other possible proxy for market response is Earning Response Coefficient (*ERC*), which is not suitable for this study because it measures market response under the effect of unusual or special circumstances. On the other hand, *MR* is chosen to be one of the aspects of *MP*, (from the perspective of potential investors?) because in the perspective potential investors, and risk is one of the most calculated factors in their decision. Whether

a company can yield a return or loss for their investment is determined by their view on said company's *MR*. *SD* of stock return is chosen to be the proxy of *MR* because it is the most common method to measure stock risk. Previous researches always use it as their proxy for stock risk, because in the actual market measurement, investors also use *SD* of stock return to calculate their risk.

MV is chosen to be the measurement of *MP* in the perspective of management. The reason is because *MV* are viewed to be management incentives to increase by doing *IS* because based on the increase or decrease of firm's *MV*, management will get a good performance report and may or may not receive bonuses by that. *MVE* is chosen as the proxy for *MV* because the model study wants to view the firm value in the market aspect. The Tobin's Q is not suitable because it compares the company's *MV* with book value. Previous researchers rarely used *MV* as a direct effect of *IS*. Solihin in 2004 took this opportunity and proved that *IS* has a strong direct relationship to *MV*. Efficient market theory states that accountants cannot do accounting fraud by using accounting techniques and transactions. Earlier researchers argued differently about how *IS* practice can have a positive implication on *MV*. Chaney and Lewis (1995) suggest that a consistent level of reported earnings is considered a way to signal a firm's quality. Trueman and Titman (2004) argue that *IS* decreases the likelihood of bankruptcy, consequently, *MV* will increase. Hepworth (1993) states that the owners will feel more confident in companies that report stable earnings. This was agreed by Gordon (1996) who suggested that management smooth out reported revenues as shareholder satisfaction increases with income stability. These results indicate that *IS* has a strong relationship to *MV*.

1. LITERATURE REVIEW

1.1. Agency theory

In every business relations, especially the ones with profit orientation, among parties involved there will always be an agency theory applied. Agency theory can be defined as a relation based on an agreement between the two parties, where one party (the agent) agreed to act on behalf of the other party (the principal). The principal and the agents are assumed to be the parties that have an ecomonic rationale and are motivated by their individual interest (Michelson, 2000). In practice, this conflict of interests can happen between a manager who tries to maximize his gains and an investor who wants to maximize his. The conflict will arise further when the method used by the management contradicts the investor's interests. By agreement, the principal used by management in formulating their judgement should be accommodating the investor's needs, yet in reality many managers tend to execute judgements which profits their side. Basically, when managers implement *IS*, their economic reasons usually are to reduce total tax payable, to increase his personal performance report, or even to reduce earning per share, which contradicts directly the investor's interest. In this case, the manager's action to implement the *IS* will contradict its business agreement with the investors. As the information will be "dressed", the actual income might not be as tempting both for current investor and potential investor.

1.2. Signaling theory

Signaling theory explains the usefulness of information in the market. The information has a content to support the investor's decision. Signalling is started from the concept of asymmetric information which explains that there are dissimilarities in access to information that affect the market in exchanging goods and services. Spence (1973) states that asymmetric information can be solved if one party sends relevant information to another party in which it is being interpreted in the form of purchasing behavior. If the party had not received the signal, the price offered would be higher (Dey, 2004).

In the financial market, there are some parties who have both more and better quality information than the other. As a consequence, the best informed parties are able to make economic decisions which allow them to gain, from the contractual relationships, greater benefits than the other players. In a market where contracts are

constantly being entered into and renewed, according to signaling theory, lenders and investors require companies which are seeking for capital to provide information about their performance. The management, therefore, is naturally induced to send signals to the market (Muid, 2004).

1.3. Stakeholder theory

Stakeholder theory supports firm value maximization in which managers need to pay close attention to all the stakeholders that can affect firm value. Decision-makers must be informed on how to choose multiple stakeholders with conflicting interests such as customers that want low prices, high quality and full service, meanwhile, employees want high wages and high quality working conditions. Managers cannot be assessed if there are no criteria for performance. Therefore, stakeholder theory may allow the stakeholders to practice their own interest at the expense of the firm's financial performance. Managers and directors are allowed to allocate firm's resources at their own interest without taking the responsibility of the effect of such expenditures on *MV* (Spence, 1973).

1.4. Income smoothing

There are two types of income smoothing: real and artificial. Real smoothing refers to those practices that involve decisions on production and investment that can minimize income variability, meanwhile, artificial smoothing is done through accounting practices. Belkaoui (2007) states essentially that operational definition of *IS* is the potential use of accruals management by objectives personal gain. Khafid (2004) defines *IS* as action of a manager to increase (or decrease) the reported current earnings of the unit manager without generating correspondence in long-term profitability of the economic unit. This definition is not limited to behavior but more broadly to include the entire actions taken by management to manage earnings. Practice about *IS* is seen as a form of earnings manipulation (Dey, 2004).

IS as a purposeful intervention by management in the earnings determination process, usually to satisfy objectives. According to Ilmainir (1993), *EM* is defined as a practice of reporting earnings that more reflect management's desire rather than the company's financial performance. Solihin (2004) defines *EM* as an action taken by the management company for affecting the reported earnings that can provide information about the economic benefits that can be detrimental for the company in the long run. With the practice of *IS*, the reliability of profit will be reduced. This is because in the *IS* there are refraction measurements of income (up or down) so that reported income is not represented faithfully as should be reported.

The *IS* can be defined as a means used by management to reduce the variability of the sequence, reporting earnings relative to a target sequence visible because of the manipulation of false accounting variables (artificial smoothing) or real transactions (real smoothing). According to the definition of Khafid (2004), *IS* is a way of removing volatility in earnings by leveling off the peaks and raising the valleys. Information about *IS* is the definition proposed by Belkaoui (2007) that is *IS* is normalized profit committed intentionally or trend to achieve the desired level. Namazi (2004) defined *IS* as earnings manipulation process time profile or reporting earnings that flow changes in the reported earnings more slightly. Other definitions by Booth (1996) is that smoothing reported earnings can be defined as a deliberate attempt to flatten or fluctuate the rate of profit so at the present time it is considered normal for a company.

1.5. Previous researches

Michelson (1995) conducts an empirical long-run analysis between smoothing and stock profitability. He used US stock companies as the sample and classified them into two groups: smoothes and non-smoothers based on the sales and earnings variation coefficient. The results show that non-smoothers sample shows a bigger average income, smaller size and bigger beta when compared to the non-smoothers sample. However, this result has no statistical evidence to support the findings.

Furthermore, Booth (1996) studies Finland market and explains that the size of smoother companies is bigger and they have smaller beta when compared to non-smoother companies. The non-smoother companies also show better performance against variability in income when com-

pared to the smoother ones. Michelson (2001) stated that accounting performance is related to smoothing. He further investigates the relationship between *IS* and abnormal returns based on the *CAR* using arithmetic series. The results show that smoother companies show a significantly bigger abnormal return that the non-smoother ones. Furthermore, smoother companies are bigger than the non-smoother ones.

Similarly, Iniguez (2004) studies Spanish market on smoothing behavior. The empirical evidence leads to think that the smoother companies obtain a bigger return than the non-smoother ones. Muid (2005) stated that *IS* was found to be having an insignificant impact to the *MP*. The sample of this research however only consists of 32 companies (12 smoothers), due to the un availability of the data. Solihin (2004) took an interesting approach in his study by adding size and industry type as controlling variables and it shows a significant relation between *IS* and market reaction.

1.6. Hypotheses

Based on the previous research, problem statement and the purpose of the study, the hypotheses of this study are as follows:

H1: *There is a significant negative effect of IS practice on the MR of manufacturing companies listed in IDX.*

H2: *There is a significant negative effect of IS practice on the MR of manufacturing companies listed in IDX.*

H3: *There is a significant positive effect of IS practice on the MV of manufacturing companies listed in IDX.*

2. RESEARCH METHODOLOGY

2.1. Population and sample

The population is manufacturing companies listed in the *IDX* throughout 2011–2013, by using the purposive sampling method in selecting sample from the target population which were filtered with such criteria as (1) manufacturing companies listed in the *IDX* before the year 2011; (2) did not delist from *IDX* throughout 2011–2013; (3) published financial statement is using Indonesian Rupiah (*IDR*) currency; (4) published financial statements as of December 31 of the years 2011 to 2013; and (4) did not have negative income and negative equity throughout 2011–2013. Based on these criteria, there are 65 companies which were selected to be the sample.

2.2. Variables measurement and operationalization

2.2.1. *Income smoothing (independent variable)*

The measurement of *IS* is a dummy. If a company is doing the income smoothing, value of 1 is used and otherwise value of 0 is used. In this study, the sample companies will be divided in to two groups: smoother and non-smoother companies. The index of *IS* will be determined by variance comparison of sale and profit method proposed by Eckel (1981). This index is calculated as follows:

$$D_f = \frac{CV\,\Delta I}{CV\,\Delta S}, \tag{1}$$

where D_f – index of income smoothing, ΔS – change in sales none period, ΔI – change in net income/profit in one period, CV – coefficient of variation of the variable.

A company is classified as smoother if the Eckel index is the same or less than 0.9 and if it is the same or less than 1.1 as non-smoother company. An interval between 0.9 and 1.1 is a grey area (Iñiguez & Poveda, 2004). The purpose of this classification is to reduce the bias risk.

$$0.9 \le D_f \le 1.1,$$

where 0.9 – smoother, D_f – gray area, 1.1 – non-smoother.

$CV\,\Delta I$ and $CV\,\Delta S$ are calculated as follows:

$$CV\,\Delta I = \frac{\sqrt{\sum\left(\Delta I - \Delta I_{mean}\right)}}{\Delta I_{mean}}, \tag{2}$$

$$CV\,\Delta S = \frac{\sqrt{\sum\left(\Delta S - \Delta S_{mean}\right)}}{\Delta S_{mean}}. \tag{3}$$

2.2.2. *MP (dependent variable)*

Market response

MR is proxied by the *CAR* and calculated by adding all the abnormal returns, which are the difference between the stocks price percentage increase or decrease with its respective expected stocks price which are the composite price index. The time period is 5 days before and after the announcement of financial report (–5 until +5). The formula to determine *CAR* is as follows:

$$CAR = \sum_{t} AR_t, \tag{4}$$

where CAR – Cumulative Abnormal Return, AR – Abnormal Return in day t; t – day of the research period (–5 until +5).

The research period is selected to be –5 until +5 to decrease the chance that other compounding effect will disrupt the *CAR* value which will decrease its relevance to the *IAS*. 5 days is considered because the trading days of *IDX* are effective for only 5 days, from Monday to Friday. The formula to determine *AR* is as follows:

$$AR_t = \left(1 - \frac{SP_t}{SP_{t-1}}\right) - \beta\left(1 - \frac{IHSG_t}{IHSG_{t-1}}\right), \tag{5}$$

where AR – abnormal return, SP – the stocks price of the company, $IHSG$ – Indonesia composite price index, B – stock beta.

The *AR* calculation uses *IHSG* as the benchmark expected value to make sure that the expected value represents the national economic conditions. The calculation is in ratios so if during the research period there's an economic phenomenon, for example, a raise in oil price, the ratio of the expected value will stay the same, because the *IHSG* will also fluctuate at the market. Stock beta measures the stock volatility at the market.

Market risk

MR is often related to the deviation of received return from the expected return. *MR* is the realized return variability in accordance to the return expected (Muid, 2005). *MR* are proxied by the *SD* of the stock return from each company in the observed period. The time period is 5 days before and after the announcement of financial report (–5 until +5). The *SD* of stock return can be calculated as follows:

$$SD = \sqrt{\sum \frac{\left(x_i - x\right)^2}{n}}, \tag{6}$$

where SD – standard deviation, x_i – stock return of each company in the observed period, x – expected stock return, which is the mean of stock return during the observed period, n – number of days in the observed period.

Market value

MV is the company performance which is reflected in the market by the price of the stock. *MV* is proxied by the *MVE* which is a natural logarithmic of multiplication of mean stock price in the observed period to the number of stock issued. The reason to use the natural logarithmic of *MV* is because the the nominal of *MV* is too variative and by turning it into natural logarithmic value the data become much more evenly distributed and easier to process. This value represents the value of the firm (Solihin, 2004).

$$MVE_{c,t} = Ln\left(P_{c,t} \cdot x \cdot N_{c,t}\right), \tag{7}$$

where MVE – market value of equity, P – mean stock price during observed period, n – number of stock issued, c – company, t – year.

2.3. Research model

There are three main proxies that are used in this study to measure *MP* which are market response, *MR* and *MV*.

Model 1

To test the hypothesis 1, market response has become the dependent variable which is proxied by the *CAR*. The main independent variable is the company type which is divided into two categories: smoother and non-smoother. The model can be described as follows:

$$CAR_{c,y} = \beta_1 + \beta_2 SMOOTHER_{c,y} + \\ + \beta_3 UE_{c,y} + \beta_4 MB_{c,y} + e, \tag{8}$$

where CAR – Cumulative Abnormal Return, $SMOOTHER$ – company type (dummy variable), 1 if smoother, 0 if non-smoother, UE – unexpected earning (controlling variable), MB – market to book ratio (controlling variable), β_1, β_2, β_3, β_4 – variable coefficient, c, y – company c on year y, e – error.

Model 2

This model is used to test the hypothesis 2, MR has become the dependent variable which is proxied by SD of the stock price. The main independent variable is the company type which is divided into two categories: smoother and non-smoother. The model can be described as follows:

$$SD_{c,y} = \beta_1 + \beta_2 SMOOTHER_{c,y} + \beta_3 LEV_{c,y} + e, \quad (9)$$

where SD – standard deviation of stock return, $SMOOTHER$ – company type (dummy variable). 1 if smoother, 0 if non-smoother, LEV – debt to equity ratio (controlling variable), β_1, β_2, β_3, β_4 – variable coefficient, c, y – company c on year y, e – error.

Model 3

This model is used to test the hypothesis 3, market response has become the dependent variable which is proxied by the MVE. The main independent variable is the company type which is divided into two categories: smoother and non-smoother. The model can be described as follows:

$$MVE_{c,y} = \beta_1 + \beta_2 SMOOTHER_{c,y} + \\ + \beta_3 SIZE_{c,y} + \beta_4 AGE_{c,y} + e, \quad (10)$$

where MVE – Ln of market value of equity, $SMOOTHER$ – company type (dummy variable), 1 if smoother, 0 if non-smoother, $SIZE$ – Ln total asset (controlling variable), AGE – number of years listing (controlling variable), β_1, β_2, β_3, β_4 – variable coefficient, c, y – company c on year y, e – error.

2.4. Method of analysis

The hypothesis testing is done using the standard Ordinary Least Square (*OLS*). Three models in this study use 1 independent variable, regression method used is single regression method. The panel data regression will be processed by statistical software.

3. RESULTS AND DISCUSSION

Model 1. Results

The result of research for model 1 is shown in Table 1 below.

From the table above, the coefficient of variables is substituted with the model, the end result is:

$$CAR = -0.417 \cdot SMOOTHING - \\ -0.158 \cdot UE - 0.009 \cdot MB + 0.018C.$$

Table 1. Regression analysis for research model 1

$$CAR_{c,y} = \beta_1 + \beta_2 SMOOTHER_{c,y} + \beta_3 UE_{c,y} + \beta_4 MB_{c,y} + e$$

Source: Data analysis.

Variable	Coefficient	Std. Error	t-statistic	Prob.
SMOOTHING	–0.417	0.213	–1.957	0.042
UE	–0.158	0.273	–0.579	0.563
MB	–0.009	0.017	–0.529	0.598
C	0.018	0.117	0.158	0.875
R-squared	0.022	Mean dependent var		–0.111
Adjusted R-squared	0.007	S.D. dependent var		1.326
S.E. of regression	1.321	Akaike info criterion		3.415
Sum squared resid	333.417	Schwarz criterion		3.482
Log likelihood	–328.992	Hannan-Quinn criter.		3.442
F-statistic	1.443	Durbin-Watson stat		1.854
Prob (F-statistic)	0.232	–	–	–

Table 2. Regression analysis for research model 2 $SD_{c,y} = \beta_1 + \beta_2 SMOOTHER_{c,y} + \beta_3 LEV_{c,y} + e$

Sources: Data analysis.

Variable	Coefficient	Std. Error	t-statistic	Prob.
LEV	0.004	0.005	0.785	0.434
SMOOTHING	0.002	0.002	1.088	0.278
C	0.002	0.002	1.034	0.303
R-squared	0.009	Mean dependent var		0.004
Adjusted R-squared	–0.001	S.D. dependent var		0.011
S.E. of regression	0.011	Akaike info criterion		–6.112
Sum squared resid	0.025	Schwarz criterion		–6.062
Log likelihood	598.947	Hannan-Quinn criter.		–6.092
F-statistic	0.884	Durbin-Watson stat		1.988
Prob (F-statistic)	0.45	–	–	–

1. Smoothing has a negative coefficient, which is suitable with the proposed hypothesis which stated that the practice of *IS* has a negative impact on market response which is proxied by *CAR*. The coefficient –0.417 means that by practicing *IS*, it will reduce the *CAR* by approximately 41.7%. This is in accordance to the previous researches that by practicing *IS*, the market response will be less fluctuative.

2. The *UE* as controlling variable also has a negative coefficient. The coefficient of –0.158 means that for each increase in *UE* will decrease *CAR* by approximately 15.8%.

3. The *MBV* as controlling variable has a negative coefficient, which is also the opposite of the predicted sign. The coefficient of 0.009 means that for each increase in *MBR*, the *CAR* is decreased by approximately 0.9%.

Variable significance test

To test whether the *IS* has a significant relation to *CAR*, the *t*-statistic test is applied. The *t*-statistic probability of *IS* has a value of 0.042 (< 0.05), it can be concluded that *IS* has a significant effect to the market response which are proxied by *CAR*.

Model significance test

To make sure that the model used in testing hypothesis 1 is good to predict future phenomenon, the model significance, or F-test is applied. F-statistic probabilty has a value of 0.23 (> 0.05). Therefore, the model does not have an acceptable level of confidence to be considered a good model for future predictions.

R-Squared

To make sure wether the set of independent variables and controlling variables in research model 1 really affect the dependent variable collectively, the *R*-squared test is applied. The model 1 has a value of *R*-squared of 0.022, which means that the variability in *CAR* can only be predicted at 2.2% by the independent and controlling variable in research model 1. The rest of the variability is explained by other variables not included in the study.

Model 2. Results

The result of research for model 2 is shown in Table 2.

From the result above, the equation for model 2 is:

$$SD = 0.004 \cdot LEV + \\ +0.002 \cdot SMOOTHING + 0.002C.$$

1. Smoothing has a positive value to *SD* which is the opposite to the stated hypothesis. The value of 0.002 means that by practicing *IS*, *MR*, which are represented by *SD* will be increased by approximately 0.19%.

2. Leverage has a positive coefficient to *SD*. The value of 0.003 means that for each increase of leverage will increase the *MR*, represented by *SD* of stock price, by approximately 0.3%.

Variable significancy test

To test wether the *IS* has a significant relation to *SD* of stock price, the *t*-statistic test is applied. *t*-statistic probability of *IS* has a value of 0.4337 (> 0.05), it can be concluded that *IS* doest not have a significant effect to *MR* which are proxied by *SD* of stock return.

Model significancy test

To make sure that the model used in testing hypothesis 2 is good enough to predict future phenomenon, the model significance or *F*-test is applied. *F*-statistic probabilty has a value of 0.302 (> 0.05). Therefore, the model does not have an acceptable level of confidence to be considered a good model for future predictions.

R-squared

To make sure wether the set of independent variables and controlling variables in research model 2 really affect the dependent variable collectively, the *R*-square test is applied. The model 2 has a value of *R*-square 0.009, which means that the variability in *CAR* can only be predicted 0.9% by the independent and controlling variable in model 2. The rest of the variability is explained by other variables not included in the study. This may be caused by the wrong approach of the model and by the lack of controlling variable.

Model 3. Results

The result research for model 3 is shown in Table 3.

From the result above, the equation for model 3 is:

$$MVE = 0.151 \cdot SMOOTHING + \\ +0.018 \cdot AGE + 1.294 \cdot SIZE - 9.020C.$$

From the result shown above, we can intepret:

1. Smoothing has a positive coefficient, which means that by practicing the *IS* companies have a tendency to have a better *MV*. The coefficient of 0.151 means that by practicing *IS*, the *MVE* is increased by approximately 15%.

2. Age has a positive coefficient to *MVE*, which means that older companies have a better *MV* because their stock and performance are already known by the public for a long time. The value is 0.01 which means that for each increase in age, the *MVE* is increased by approximately 1%.

3. Size has a positive coefficient to *MVE*. Means that, bigger companies have a bigger *MV*, and vice versa. The coefficient of 1.294 means that for each increase of size *MVE* will increase by 129%.

Variable significance test

To test whether the *IS* has a significant relation to the *MVE*, the *t*-statistic test is applied. *T*-statistic probability of *IS* has a value of 0.4991 (> 0.05), it can be concluded that *IS* does not have a significant effect to the *MR* which is proxied by *MVE*.

Table 3. Regression analysis for research model 3

$$MVE_{c,y} = \beta_1 + \beta_2 SMOOTHER_{c,y} + \beta_3 SIZE_{c,y} + \beta_4 AGE_{c,y} + e$$

Source: Data analysis.

Variable	Coefficient	Std. Error	t-statistic	Prob.
SMOOTHING	0.151	0.223	0.677	0.499
SIZE	1.294	0.061	21.175	0.000
AGE	0.018	0.015	1.195	0.234
	–9.020	1.685	–5.352	0.000
R-squared	0.717	Mean dependent var		27.7155
Adjusted R-squared	0.712	S.D. dependent var		2.564
S.E. of regression	1.375	Akaike info criterion		3.495
Sum squared resid	361.015	Schwarz criterion		3.562
Log likelihood	–336.745	Hannan-Quinn criter.		3.522
F-statistic	161.202	Durbin-Watson stat		0.866
Prob (F-statistic)	0.000	–	–	–

Model siginificance test

To make sure that the model used in testing hypothesis 3 is good enough to predict future phenomenon, the model significance or *F*-test is applied. *F*-statistic probabilty has a value of 0.000 (< 0.05). Therefore, with 99% level of confidence, it can be concluded that model 3 is good enough to predict future phenomenon.

R-squared

To make sure whither the set of independent variables and controlling variables in research model 3 really affects the dependent variable collectively, the *R*-squared test is applied. The model 3 has a value of *R*-squared of 0.7168, which means that the variability in *MVE* can be predicted 71% by the independent and controlling variable in model 3. The rest of the variability is explained by other variables not included in the study.

3.1. Hypotheses testing

3.1.1. The effect of income smoothing on market response

The t-statistic probability of IS has a value of 0.0418 (0.05), it can be concluded that IS has a negative significant effect to the market response (*CAR*), which means that the hypothesis (1) is accepted. This result is in accordance to the previous research by Muid (2005) and Khafid (2002), in which both of them result in significant negative effect.

However, the amount of market response variablity affected by *IS* in this study is lower than of Muid (2005) and Khafid (2002) research, respectively. This difference may be caused by the restriction this study implements in measuring company's *IS* status.

The result is in accordance to the agency theory, which states that agents have a conflict of interests with the principals, therefore have a tendency to manipulate the information provided. By practicing *IS*, companies can directly affect the current investor purchasing behavior, therefore reducing the *CAR*.

3.1.2. The effect of income smoothing on market risk

The *t*-statistic probability of *IS* has a value of 0.4337 (> 0.05), it can be concluded that *IS* does not have a significant effect to the *MR* (*SD* of stock return). Not only that it does not meet the hypothesis 2, the result is surprisingly shows that the *IS* is positively related to *MR*.

This result is not in accordance with previous research by Muid (2004) and Michelson (1999). This difference may be caused by several factors. The model only uses one controlling variable, that is Leverage, which is the same that was in the used previous researches. But, due to the nature of economic differences between the observed year (Michelson, 1999; Muid, 2004) and the years 2011–2013, the result is different. During 2011–2013, the investment risk may not be solely affected by *IS* and leverage, because during the 2008–2009 crisis, potential investor may have developed a much more cautious purchasing behavior. Therefore, the investment risks should have more controlling variables other than Leverage.

Other reason may be caused by the nature of market response calculation in this study that is only measuring the *SD* of stock return in a short observation period (–6 to +6 days from financial statement announcement) as opposed to the whole month observation that Muid (2004) and Michelson (1999) did in their research.

3.1.3. The effect of income smoothing on market value

The *IS* has a positive effect on *MV* which is suitable to the hypothesis 3. However, *t*-statistic probability has a value of 0.4991 (> 0.05), it can be concluded that the positive relation between them is not significant which means that the hypothesis 3 is rejected.

The result, even though not significant, is in accordance with the signaling theory, stating that the signal given by the companies affects the purchasing behavior of investor (Dey, 2004). The result also supports what Namazi (2011) stated that IS tends to positively affect companies' *MBV*. Companies that practice *IS* have better *MBV* than those that do not, because companies that practice *IS* tend to have higher earnings yield.

4. DISCUSSION

4.1. The effect of income smoothing on market response

The purpose of model 1 is to analyze the effect of *IS* practice on the *MP* in the perspective of current investor, therefore market response is chosen to be the dependent variable. The results shows that *IS* has a signficant negative relationship with market response, meaning that by practicing *IS*, companies will yield a better market response from their current investor. This is in accordance to the previous researches by Muid (2004) and Khafid (2002), both of them also yield a significant negative effect. By doing *IS*, companies will have a direct effect to the purchasing behavior of current investors, because current investor is already attached to the companies and therefore only based their investment decision on yearly income.

Unlike potential investors, current investor is already attached to the companies and therefore only expects return of their already invested capital. This current investor values the information contained in income statement more than the information in other part of financial statement. This is in accordance to what Zarowin (2002) states that *IS* increases the accounting informativeness of a financial report. It means that income is still the most influencing factor that affects the current investor's decision. This proves that income is still the main financial information that investors use in their decision making.

The result is also in accordance with the agency theory. By doing *IS*, management get what they want from investors which is stable stock prices in the cost of financial statement information relevance. By doing *IS*, the principal is being misguided, and therefore adjusted their purchasing behavior depending on the smoothed income, the smoothed income, the less fluctuative the stock prices become, which is represented by the lower number of *CAR* in smoother companies in the sample. Both Muid (2004) and Khafid (2002) stated that market response is a short-term matter, therefore the nature of *IS* is suitable to the perspective of current investor. Current investors only care about the direct return that they can yield from their already paid investment, therefore they tend to ignore the informativeness of other financial information and only focus on the stability of income. This is in accordance with signaling theory, which as explained by Dey (2004), states that the sophisticated investor will not be misguided by *IS*, most of the unsophisticated investor still views income as the main information, and therefore vulnerable to be misguided by *IS* practices.

4.2. The effect of income smoothing on market risk

The purpose of model 2 is to analyze the effect of *IS* practice to the *MP* in the perspective of potential investor. *MR* is chosen to be the dependent variable because potential investors will use investment risks as their main investment decision. The results shows that *IS* has a positive insignificant effect on the *MR*, which means that by practicing *IS*, companies tend to have a higher risk perceived by the potential investors. This is not in accordance to the signaling theory, because by practicing *IS*, companies are giving positive signals which should be perceived by investors as a reduced risk.

This result also cannot confirm what Muid (2004) states that when a company has smoothed income, it is easier for the potential investor to predict the future return on their investment, which will lead to stable stock return. Instead, this result proves that potential investor' not only base their investment risk analysis on each companies income smoothness, but rather companies' other financial condition, which cannot be explained by the model. This also means that potential investor also sees the market condition as a whole, which means economic condition such as inflation also affecting potential investor decision. As a result, the outcome of model 2 is also not in accordance with the agency theory, because the relation between *IS* and *MR* should be negative, representing the conflict of interensts between agent and principal.

This result can be interpreted that investment risk is more related to the companies economic condition, production process, labor, or even its industry type which will cause an inherent risk,

which means that when a potential investor tries to measure an investment risk of a company, potential investors will pay more attention to the companies balance sheet and other additional information rather than its income statement, which means that the relevance of *IS* has been eliminated, because *IS* does not wholely represent companies overall economic condition, but rather only shows the companies return in short term. Potential investor will look for an information that is reflecting the companies performance in the long run/long term instead of only *IS*.

4.3. The effect of income smoothing on market value

The purpose of model 3 is to analyze the effect of *IS* practices to the *MP* in the perspective of management. *MV* is chosen as the dependent variable because management have a tendency to increase the *MV* to gain incentives, and therefore have a cause to practice *IS*. The results show that *IS* has a insignificant positive relation to the *MV*. Although insignificant, the result is in accordance to the signalling theory, because by doing *IS* companies give positive signal to the market and therefore yield better market capitalization. This result also in accordance with Solihin (2004), who also found that *IS* insignificantly having a positive effect on *MV*. According to Solihin (2004), even though *IS* positively affects *MV*, other factors such as firm age and firm size affect firm value even more.

This is also supported by Namazi (2004) stated that the *MV* is more related to the age of the firm and being registered in a stock exchange and firm sizes, as high volume of purchases, which will increase the *MV*, tend to happen in companies that have larger assets, and a larger day-to-day operation. These companies tend to need more capital support and therefore will issue more stocks than the others. Companies with older age also tend to have a bigger *MB* ratio, due the inflation it suffered throughout the years, causing more and more stocks issued to the investor therefore having a higher *MV*.

The practice of *IS*, on the other hand, although affecting the *MV* positively, is insignificant because it is a short-term matter. The smoothness of the income in short-term will induce a reaction of purchasing behaviour and will affect the *MV* a little bit. But most of the changes in *MV* is still caused by firm size and age. This is in accordance to the research conducted by Sepasi (2007) who stated that firm value is more associated to the magnitude of the income rather than the its stream, which means the firm value is more affected or determined by the volume of companies day-to-day operation and income rather than the stability of the income itself.

CONCLUSION AND REMARKS

From the empirical analysis that has been taken, it can be concluded that the results of the study are as follows:

1. Research model (1) regression analysis shows that *IS* has a negative significant effect on market response (*CAR*). Therefore, the hypothesis 1 is accepted. This result is in accordance to the previous researches such as Ilmainir (1993), Khafid (2002), and Muid (2004).

2. Research model 2 regression analysis shows that *IS* has an insignificant positive effect to the *MR* (*SD* of stock return). Therefore, the hypothesis 2 is rejected. This result is different from the previous researches such as Muid (2004) and Michelson (2009). This failure may be caused by the model and is not suitable enough to the research objective, and economical condition differences between current and previous research.

3. Research model 3 regression analysis shows that the IS has an insiginficant positive effect to the *MV* (*MVE*). Although it is in accordance to the hypothesis (3), the failure of the model to achieve the desired level of significance made the hypothesis 3 to be rejected.

4. In general, the study tries to see the impact of practicing *IS* to the *MP* which are divided into three aspects: market response, *MR*, *MV*. The final conclusion is that *IS* has a significant impact on the *MP*, although only in the aspect of market response. On the other hand, in the aspect of market risk and *MV*, this study has failed to see the impact of *IS*.

LIMITATION

This study had some limitations which can be described as follows:

1. The sample of the study is only manufacturing companies, which, although representing the most area where smoother companies usually are, still cannot represent the whole market.

2. The design of model 2 is too simplified, therefore cannot represent the research objective. This is caused by the lack of previous researches that tries to observed it.

3. The choosing of controlling variable in model 2 is unsuitable because it apparently lacks a relation to the dependent variable.

4. Some variables appear to have a abnormal value such as 0, because the stock prices data reveal no changes during the observed period. This maybe caused by data recording error by the source data, or due to the very short observed period which is only +/–5 days from the financial announcement.

SUGGESTION

In order for future research in this topic to be much more useful, some suggestion can be described as follows:

1. The sample choosing can use the whole companies listed in *IDX*, although it may distilate the *IS* variable, because most of the smoother companies are manufacturing companies. Future researches can avoid this by adding more purposive sampling criteria, such as companies that does not belong in finance industry, to filter out non-manufacturing that is less likely to practice *IS*.

2. The design of model 2 should add more controlling variables related to the dependent variable to make it much more relevant to the research object, such as: inflation rate, financial distress, going concern opinion, etc.

3. The observation period should take longer time, and wider time-frame to make sure that the data collected is relevant. Even though, too wide time-frame can cause compounding factor affecting the variables. Based on previous researches, between –/+ 5 days to –/+14 days are the most preferred ones.

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