

Effect Of Earnings Management On Earnings Predictability In Information Signaling Perspective

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Abstract: This research is aimed to examine (1) effect of discretionary and innate accrual on earnings predictability (2) effect of market share and financial health on relationship between real earnings management and earnings predictability. This research use manufacture firms listed in Indonesian Stock Exchange 2003-2015 as research sample, with 2013-2014 as research period. Accrual earnings management is measured by discretionary and innate abnormal accrual. Real earnings management is measured by aggregate of abnormal cash flow of operation, abnormal production, abnormal discretionary expenses. As expected, discretionary accrual as opportunist act does not support earnings predictability, while innate accrual as information signaling of business model improves earnings predictability. Real earnings management as information signaling of market share and financial health improves earnings predictability as well. In general, earnings management as information signaling is more likely to communicate condition of firm and leads to informativeness of earnings.

Abstrak: Penelitian ini bertujuan untuk menguji (1) pengaruh akrual diskresioner dan *innate* terhadap prediktabilitas laba. (2) pengaruh pangsa pasar dan kesehatan keuangan terhadap hubungan antara manajemen laba riil dengan prediktabilitas. Penelitian ini menggunakan perusahaan manufaktur yang terdaftar di bursa efek Indonesia 2003-2015 sebagai sampel, dengan periode penelitian 2013-2014. Manajemen laba akrual diukur dengan akrual abnormal diskresioner dan *innate*. Manajemen laba riil diukur dengan agregat arus kas abnormal, produksi abnormal, dan beban diskresioner abnormal. Sesuai prediksi, akrual diskresioner tidak meningkatkan prediktabilitas laba, sedangkan akrual *innate* sebagai sinyal informasi model bisnis meningkatkan prediktabilitas laba. Manajemen laba riil sebagai sinyal informasi pangsa pasar dan kesehatan keuangan juga meningkatkan prediktabilitas laba. Secara umum, manajemen laba sebagai pensinyalan informasi cenderung mengkomunikasikan kondisi perusahaan dan menuju pada laba yang informatif.

Keywords: Earnings Management, Earnings Predictability, Information Signaling

INTRODUCTION

Earnings are the most vital information which demonstrates the financial stability and strength of any firm (Tabassum *et al.*, 2015). It refers to the bottom line item of income statement which exhibits how firm is financially beneficial and adding value to the shareholder's wealth as well as to predict future earnings. As earnings are the key to attain specific prediction of future earnings (Tabassum *et al.*, 2015), management uses various techniques and strategies which are legal and sometimes illegal to achieve specific earning goals. This phenomenon is called earnings management.

Earnings management can be classified into two categories, which are accruals earnings management (hereafter AEM) and real earnings management (hereafter REM). AEM means to manipulate the earnings through the utilization of accounting principles provided by GAAP, whereas REM means to accelerate earnings by changing some business activities (Roychowdhury, 2006). AEM is not accomplished by changing the underlying operating activities of the firm, but through the choice of accounting methods used to represent those activities, while REM involves changing the firm's underlying operations in an effort to boost current-period earnings (Gunny, 2010). Existences of AEM have been examined in previous researches, such as in pre and post-IFRS adoption in China (Ho *et al.*, 2015) and in CEO debt (Dhole *et al.*, 2016).

It is important to examine earnings management. Enron have been bankrupt in 2002 for earnings manipulation and covering financial problems and losses (Shirur, 2011). Enron case is a picture to describe existence of earnings management and its bad impact to the firm. Enron case leads to formulating of Sarbanes-Oxley Act (SOX). SOX is a set of business ethics, includes improvement of role of auditor, to reduce earnings management (Koh *et al.*, 2008). Post SOX period, there is reducing of accounting fraudulent to beating or meeting analyst forecast and, at the same time, increasing of REM (Koh *et al.*, 2008; Ho *et al.*, 2015). There are evidences about existences of REM (Roychowdhury, 2006; Cohen *et al.*, 2008).

In terms of earnings prediction, earnings management have effect on future earnings. REM have negative effect on future earnings (Cohen and Zarowin, 2010; Tabassum *et al.*, 2014; Filip *et al.*, 2015; Leggett *et al.*, 2016; Vorst, 2016). Vorst (2016) found that REM, trough discretionary investments cutting, have effect on lower future performance because discretionary investments cutting leads to opportunity lost of investment in the future. Filip *et al.* (2015) found that REM, trough avoidance of impairment losses recognition, decreases future growth opportunity. REM leads to bigger real economic cost (Leggett *et al.*, 2016) and create problems in the future (Tabassum *et al.*, 2014). Cohen and Zarowin (2010) found performance decreasing after seasoned equity offerings for firms that engaged in REM. Bhojraj *et al.* (2009) show that firms that beat analyst forecasts by using REM and AEM have worse operating performance and stock market performance in the subsequent three years than firms that miss analyst forecasts without earnings management. Altamuro *et al.* (2005) found that early recognition of revenues, in terms of managing earnings, have low relationship between earnings and cash flow. It shows that earnings management decreases future earnings prediction as well as current earnings predictability.

Earnings management could be signaling information to earnings forecasting as well. Gunny (2010) found that REM have positive effect on future earnings. Vorst (2016) found that suspect firms engaged in REM (firms that meet or beat zero earnings) weakens negative effect of REM, trough discretionary investments cutting, on future earnings. Contrast with opportunist concept, REM could be a signal of firm's ability to generate better earnings in the future (Gunny, 2010). Siregar and Utama (2009) found evidences that AEM in Indonesia is not opportunist but efficient act. Rezaei and Roshani (2012) found that earnings management in Iran is efficient purpose as well. It shows that AEM increases future earnings prediction as well as earnings predictability.

There are inconsistencies of previous researches about effect of earnings management related to earnings prediction. These inconsistencies happen because previous research did not distinguish earnings management as opportunist act or

information signaling. Jiraporn *et al.* (2008) found that discretionary accrual (proxy of AEM) in high-growth firms have higher pricing than low-growth firms. Gunny (2010) and Vorst (2016) have included information of meet or beat zero earnings on analysis of REM on future earnings. The results shows that meet or beat zero earnings could be information signaling of REM. Gunny and Zhang (2014) found that firms manage earnings to meet analyst forecasts to signal superior future performance. Previous researches do not include firm's condition that shown trough earnings management practices that could be information signaling to improve future performance.

In Indonesia, researches of earnings management are significant research because it have contribution of 18 percent of all accounting and finance research in National Symposium of Accounting as well as of 45.7 percent of all published research in big five accounting journal (*Jurnal Akuntansi dan Auditing Indonesia, Jurnal Akuntansi, Jurnal Riset Akuntansi Indonesia, Akuntabilitas, Jurnal Akuntansi dan Keuangan Indonesia* [Indonesian Journal of Accounting and Auditing, Journal of Accountancy, Indonesian Journal of Accounting Research, Accountability, Indonesian Journal of Accounting and Finance]) from 2000 until 2009 (Suhardianto and Harymawan, 2011). There are many previous researches have inconsistent result because of unclear earnings management motivations (Suhardianto and Harymawan, 2011). This research will contribute to spread of earnings management motivations as information signaling.

This research will examine effect of earnings management as information signaling on earnings predictability. In terms of AEM, this research will use innate abnormal accruals as information signaling of AEM. Francis *et al.* (2005) introduce innate abnormal accruals as accrual management caused by business model. Innate accruals (accrual management based on business model) increases earnings quality (Francis *et al.*, 2005), and further, it could reducing information risk and cost of equity capital (Francis *et al.*, 2004).

In terms of REM, this research will examine market share and financial health as information signaling of REM to increases earnings predictability. Zang (2012) and Abernathy *et al.* (2014) found that the higher market share and the healthier financial condition will leads to higher REM. Zang (2012) shows there are costs related to REM. Firms must have competitive advantage in its industry position and have healthy financial condition (Zang, 2012; Abernathy *et al.*, 2014). Zang (2012) stated that since REM is a departure from optimal operational decisions, it can be particularly costly for firms that face intense competition in the industry. Therefore, managers in firms who have a lower percentage of industry market share may perceive REM as more costly because it can further erode their status within the industry (Abernathy *et al.*, 2014). For a firm in poor financial health, the marginal cost of deviating from optimal business strategies is likely to be high (Zang, 2012). In this case, management might perceive real activities manipulation as relatively costly because their primary goal is to improve operations (Abernathy *et al.*, 2014). REM leads to bigger real economic cost (Leggett *et al.*, 2016) if only firms have lower market share and bad financial health. The aims of this research are (1) to examine effect of discretionary and innate abnormal accruals on earnings predictability (2) to examine effect of market share and financial health on relationship between REM and earnings predictability.

THEORETICAL REVIEW

Agency Theory. Jensen and Meckling (1976) define agency theory as a contract between one or more parties (principal) that bind the other party (the agent) to carry out management of firm based on interests of principal, including the delegation of decision making authority to the agent. The main issue of agency theory is agency conflict. Agency conflict is come from conflict of interest between owners, as a principal, and management, as an agent. Owners have interest to maximize their wealth as well as management.

In terms of earnings information, agency conflict leads to dysfunctional behavior of management, such as earnings management. Earnings management usually refers to the efforts of firm managers or executives to manipulate the earnings figures in financial reporting (Tangjitprom, 2012). Earnings management could be bigger because of information asymmetric. Management have more information and know better about firm's condition compares to owners. This point of view leads to earnings management as opportunist act of management based on information asymmetric for their own-interest. This research will examine earnings management as information signaling to communicate firm's business model, market share and financial health.

Earnings Management as Information Signaling. There are two ways to understands earnings management. First, earnings management as management opportunist behavior in maximizes their utilities in terms of face contract of compensation, debt, and political cost (Scott, 2011). Second, earnings management as efficient contract perspective, which is earnings management gives management a flexibility to protect themselves and firm in terms of anticipates unexpected events for benefits of related parties (Scott, 2011).

In terms of AEM, managerial discretion improves the ability of earnings to reflect economic value. There is evidence of pervasive income smoothing, which improves the persistence and predictability of reported earnings. Subramanyam (1996) found that managerial accrual discretion improves the ability of earnings to reflect economic value as well as help predict future cash flows, earnings, and dividends. Subramanyam (1996) finds evidence consistent with this hypothesis, suggests that discretionary accruals do add informational content to earnings. Lipe (1990) suggests that earnings management is technique that reduces earnings variability, and have advantage for stockholders to reduces uncertainty and increases predictability of future earnings. Innate accruals (accrual management based on business model) increases earnings quality (Francis *et al.*, 2005), and further, it could reducing information risk and cost of equity capital (Francis *et al.*, 2004), and increases firm value (Gaio and Raposo, 2011). Al-Attar *et al.* (2008) found that abnormal accrual could predict future cash flow and suggests that abnormal accruals are not merely the products of noise in the accruals-estimation process. In this case, managers will use earnings management to communicate some private information to the public, in order to get result in the improvement of firm value (Tangjitprom, 2012). Siregar and Utama (2009); Rezaei and Roshani (2012) found evidences that accrual earnings management as efficient purpose. Liu (2016) found that there is positive relationship between earnings management, both accrual and real earnings management, and economic value added in Association of Southeast Asian Nations (ASEAN).

In terms of REM, abnormal activities improve the ability of earnings to reflect economic value as well. Herbohn *et al.* (2010) suggest that management signal their expectations about an improvement (deterioration) in future firm performance via

decreases (increases) in unrecognized deferred tax assets (losses). Further, Herbohn *et al.* (2010) found evidence that management use their judgment to report useful, value-relevant information about future profitability of the firm. Gunny (2010) found that REM have positive effect on future earnings. There are two arguments of Gunny (2010), which are, first, the act of just meeting the benchmark by engaging in REM may provide benefits to the firm that enables better performance in the future, and second, the positive association between just meeting earnings benchmarks by engaging in REM and future performance is as well as consistent with signaling managerial competence or future firm performance. Vorst (2016) found that suspect firms of REM (firms that meet earnings) weakens negative effect of REM, trough discretionary investments cutting, on future earnings. Contrast with opportunist concept, REM could be a signal of firm's ability to generate better earnings in the future (Gunny, 2010).

As information signaling, earnings management practices have to be followed by some factors, in order to distinguish earnings management as opportunist act or information signaling one. Distinguish of abnormal accruals into discretionary and innate accruals (Francis *et al.*, 2005) could be done to see AEM as opportunist act or information signaling. Meet or beat earnings benchmark as well as factor that could picture REM as information signaling. The act of just meeting the benchmark by engaging in REM may provide benefits to the firm that enables better performance in the future (Gunny, 2010) and could weakens negative effect of real earnings management, trough discretionary investments cutting, on future earnings (Vorst, 2016). Gunny and Zhang (2014) found that firms manage earnings to meet analyst forecasts to signal superior future performance.

Hypotheses. As opportunist act, earnings management is done to covers bad firm's condition. Cohen *et al.* (2011) found evidence that indicates management use warranty accruals to manage earnings opportunistically to meet earnings targets. Further, Cohen *et al.* (2011) find that the stock market recognizes the understatement of warranty liabilities of firms that managed earnings, not as information about firms' future performance and liability. Irani and Oesch (2016) suggests that managers use REM to enhance short-term performance in response to analyst pressure. Markarian and Santolo (2014) study theoretically the effect of product market competition on the incentives to engage in earnings manipulation, and shows how manipulating earnings is particularly rewarding in more competitive markets since the boost in market value of reporting good earnings is especially important. Objective of manipulating earnings is to cover market disadvantages of firms. Another opportunist earnings management is to cover bad performance around seasoned equity offering (SEO) to boost up share price (Kothari *et al.*, 2016). Fisher *et al.* (2016) found that AEM prior to bankruptcy reduces the likelihood of plan confirmation and emergence of reorganization plan will be confirmed by a bankruptcy court.

Opportunist earnings management, both AEM and REM, have negative effect to future performance, firm value and share price. Opportunist earnings management could be done in order to fulfill bonus scheme or debt covenant (Scott, 2011). Earnings management responds by lowering share prices and corporate market value (Gill *et al.*, 2013). Athanasakou *et al.* (2011) found that stock market gives lower rewards for firm that achieve analyst earnings expectation trough earnings management than trough genuine earnings forecast guidance. Nuryaman (2013) stated that AEM have negative effect on share price because earnings management practices can reduce the credibility of accounting information. Farooqi *et al.* (2014) stated REM reduces firm value, especially in

industrially diversified firms. Fisher *et al.* (2016) stated management of earnings destroys economic value by making the emergence firms from bankruptcy looks like survival firms. REM will decrease future performance by opportunity lost of investment (Vorst, 2016) and future growth (Filip *et al.*, 2015), bigger real economic cost (Leggett *et al.*, 2016), destroys innovation strategy (Hwang *et al.*, 2014), and create problems in the future (Tabassum *et al.*, 2014). Cohen and Zarowin (2010) found performance decreasing after seasoned equity offerings for firms that engaged to REM.

As information signaling, earnings management improves the ability of earnings to reflect economic value, and have positive effect on future performance and firm value. Discretionary accruals help predict future cash flows, earnings, and dividends (Subramanyam, 1996) because earnings management is technique that reduces earnings variability and have advantage for stockholders to reduce uncertainty (Lipe, 1990). Al-Attar *et al.* (2008) suggests that abnormal accruals are not merely the products of noise in the accruals-estimation process.

Herbohn *et al.* (2010) suggest that management signal their expectations about an improvement (deterioration) in future firm performance via decreases (increases) in unrecognized deferred tax assets (losses). The act of just meeting the benchmark by engaging in REM may provide benefits to the firm that signaling managerial competence or future firm performance (Gunny, 2010; Gunny and Zhang, 2014; Vorst 2016). Eldenburg *et al.* (2011) found that REM related to pay-for-performance incentives leads to good operational decisions

In the other hand, there is contrast result between Gunny (2010); Gunny and Zhang (2014); Vorst (2016) stated that firms manage earnings to meet earnings benchmark to signal superior future performance, with Bhojraj *et al.* (2009) which stated that firms that beat analyst forecasts by using AEM and REM have worse operating performance and stock market performance in the subsequent three years. Cruz and Luiz (2015) stated that there is no association between both AEM and REM with stock return.

As information signaling, earnings management practices have to be followed by some factors, in order to distinguish earnings management as opportunist act or information signaling one. In order to distinguish earnings management as opportunist act or information signaling, analysis of earnings management could use fundamental factors as well, which is fundamental factors, such as innate factors (Francis *et al.*, 2005), bankruptcy risk (Al-Attar *et al.*, 2008), fundamental risk (Chen *et al.*, 2008), managerial competences (Gunny, 2010) or performance incentives (Eldenburg *et al.*, 2011). If abnormal accrual is not based on business model, then it is accrual earnings management as opportunist act.

This research will use discretionary abnormal accruals as opportunist act and innate abnormal accruals as information signaling of AEM based on Francis *et al.*, (2005). For example, discretionary of decreasing of allowance of bad debt is not based on business condition then there will be possibility for earnings increasing in bonuses purpose for management. It shows opportunist act and will not support earnings predictability. In the other hand, discretionary of decreasing of allowance of bad debt based on business condition that shows customers have good payment profiles as information signaling and increases earnings predictability.

H1a: Discretionary abnormal accruals have no effect on earnings predictability

H1b: Innate abnormal accruals have positive effect on earnings predictability

This research will use market share and financial health as information signaling of REM. High market share will reduce bankruptcy risk and increases firms' performance (Opler and Titman, 1994) and stock market value (Blundell *et al.*, 1999). Zang (2012) shows that market share is cost of REM. Market share show the position and advantage of competition of industry. Zang (2012) stated that since REM is a departure from optimal operational decisions, it can be particularly costly for firms that face intense competition in the industry. Therefore, managers in firms who have a lower percentage of industry market share may perceive REM as more costly because it can further erode their status within the industry (Abernathy *et al.*, 2014). Disadvantage of market position leads to opportunist REM (Markarian and Santolo, 2014). It shows that firms engaging in REM without high market share will leads to opportunist earnings management and decreases future earnings. Firms that have high market share means have low cost of REM (Zang 2012) and low cost of economic value, further, will lead to high future earnings. REM, as information signaling, communicate management competences (Gunny, 2010), such as high market share. For example, firms engage in REM trough over sales and over production activities shows that firms have ability to make high sales of product because of high market share, while cutting of RandD or advertisement expenses (expenses that support level of sales) have confidence in high sales of product because of high market share.

H2: REM have positive effect on earnings predictability, if market share is high

Healthier financial condition of firms leads to high performance (Opler and Titman, 1994) and high stock market value (Garlappi and Yan, 2011). Zang (2012) shows that financial health is cost of REM. High bankruptcy risk leads to opportunist earnings management (Al-Attar *et al.*, 2008; Fisher *et al.*, 2016). For a firm in poor financial health, the marginal cost of deviating from optimal business strategies is likely to be high (Zang, 2012). In this case, management might perceive REM as relatively costly because their primary goal is to improve operations (Abernathy *et al.*, 2014). REM, as information signaling, communicate management competences (Gunny, 2010), such as healthy financial condition. For example, firms engage in REM trough over production activities shows that firms have good financial health to invest in production activities, while cutting of RandD or advertisement expenses (expenses that support level of sales and production).

H3: REM have positive effect on earnings predictability, if financial health is high

Research's Framework. Based on hypotheses development, research framework is as followed.

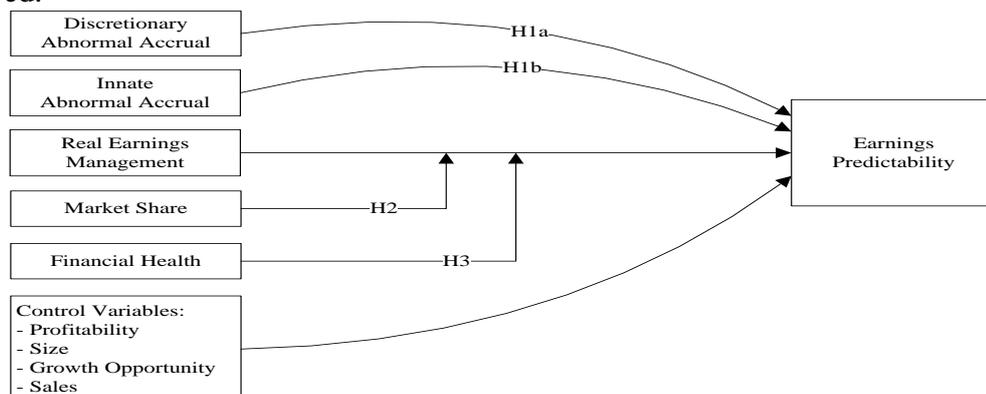


Figure 1. Research's Framework

Source: hypotheses development and previous researches

In this research, dependent variable is earnings predictability. Independent variables are AEM and REM. Moderating variables are market share and financial health; while profitability, size, growth opportunity, and sales are the control variables.

METHOD

Research Sample. Population of research is listed firms in Indonesian Stock Exchange. In 2013-2014, Asian Development Bank (2016) have reported that Indonesian Stock Exchange have the second lowest, after Vietnam, corporate governance score of six countries of ASEAN Capital Market Forum. Liu (2016) infer that the firms in ASEAN nations have operated in environments where government policies were lacking and the market structure was underdeveloped and leads to higher earnings management activities. In addition, Indonesia have low disclosures of right of shareholders and other stakeholders as well as lack of transparency (Asian Development Bank, 2016). It means that Indonesia still have lack of corporate governance in business practices and high asymmetric information and will leads to real earnings management practices. Meanwhile, Indonesian Stock Exchange have potential investor, with its largest population among ASEAN countries, and growing firms (USAID, 2013). Further, Indonesian Stock Exchange is one of the most sensitive stock exchange in ASEAN to international financial market information (USAID, 2013). It is important to see Indonesian listed firms financial reporting with lack of transparency, in the same time having potential capital market.

Research sample is manufacture firms listed in Indonesian Stock Exchange 2003-2015. Research period is 2013-2014, with the use of data 2003-2015 (period t-10 until t+1). In Indonesia, it is important to examine business practices in manufacture firms, because manufacture industry have the biggest contribution to national economic for last 20 years (BPS, 2015) as well as to avoid industry effect in earnings management practices. Total research sample is 125 manufacture firms. Sample selection process can be seen in Table 1.

Table 1. Research Sample

	Firm	Firm-Year (2013-2014)
Manufacture firms listed in Indonesian Stock Exchange 2003-2015 in a row	106	212
Less: incomplete data	(3)	(6)
change financial statement period	(4)	(8)
Total sample	99	198

Source: Indonesian Stock Exchange

Research Variables. Dependent variable is earnings predictability. Earnings predictability is ability of earnings to predict itself (Lipe, 1990). Earnings predictability is measured by model as follow (Francis *et al.*, 2004):

$$\frac{Earnings_t}{Assets_{t-1}} = \alpha + \beta \frac{Earnings_{t-1}}{Assets_{t-1}} + e_t \quad (1)$$

Earnings predictability shows by percentile rank of square root variance value of e_t [$\sqrt{\sigma^2(e_t)}$] (Francis *et al.*, 2004) in equation (1). Value of e_t calculated by autoregressive

model for past ten years (for time series period t-9 until period t) for each firm-years (Francis *et al.*, 2004). The higher $[\sqrt{\sigma^2(e_t)}]$, the higher earnings predictability is.

Independent variable is AEM and REM. AEM is measured by abnormal accruals with Dechow-Dichev model modified by Francis *et al.* (2005) is as follow:

$$\frac{TCA_t}{Assets_t} = a + b1 \frac{CFO_{t-1}}{Assets_t} + b2 \frac{CFO_t}{Assets_t} + b3 \frac{CFO_{t+1}}{Assets_t} + b4 \frac{PPE_t}{Assets_t} + b3 \frac{Sales_t}{Assets_t} + e_t \quad (2)$$

Absolute value of e_t in equation (2) is abnormal accruals. To distinguish AEM as opportunist act and information signaling, then model that will be used as follow (Francis *et al.*, 2005):

$$Abnormal\ accruals_t = a + b1Size_t + b2logOpcycle_t + b3stdevCFO_t + b4stdevSales_t + b5NegEarn_t + e_t \quad (3)$$

Value of e_t in equation (3) is discretionary accruals as opportunist AEM. Estimation of coefficient equation (3) will be used to calculated innate accrual (Francis *et al.*, 2005):

$$Innate\ accrual_t = a + b1Size_t + b2logOpcycle_t + b3stdevCFO_t + b4stdevSales_t + b5NegEarn_t \quad (4)$$

Higher innate accrual shows higher AEM as information signaling.

Activities that will be occurred to detect REM are sales manipulation, over production, and discretionary expenses cutting. In order to estimate sales manipulation activity, over production, and discretionary expenses cutting equation that will be used as follow (Roychowdhury, 2006):

$$\frac{CFO_t}{Assets_{t-1}} = a + b0 \frac{1}{Assets_{t-1}} + b1 \frac{Sales_t}{Assets_{t-1}} + b2 \frac{\Delta Sales_t}{Assets_{t-1}} + e_t \quad (5)$$

$$\frac{Production_t}{Assets_{t-1}} = a + b0 \frac{1}{Assets_{t-1}} + b1 \frac{Sales_t}{Assets_{t-1}} + b2 \frac{\Delta Sales_t}{Assets_{t-1}} + b3 \frac{\Delta Sales_{t-1}}{Assets_{t-1}} + e_t \quad (6)$$

$$\frac{Discretionary\ expenses_t}{Assets_{t-1}} = a + b0 \frac{1}{Assets_{t-1}} + b1 \frac{Sales_t}{Assets_{t-1}} + e_t \quad (7)$$

Indication of REM is negative value of abnormal CFO (ABCFO), positive value of abnormal PROD (ABPROD), and negative value of abnormal DISEXP (ABDISEXP) (Cohen *et al.*, 2008). Abnormal CFO is value of e_t from the equation (5). Abnormal PROD is value of e_t from the equation (6). Abnormal DISEXP is value of e_t from the equation (7).

If management of a firm is engaged with one type of REM activity, then management will be engaged as well as the other type of REM activity (Cohen *et al.*, 2008; Chi *et al.*, 2011). This research will use aggregate of three types of REM activities as well as comprehensive measurement of REM is as follow (Cohen *et al.*, 2008; Chi *et al.*, 2011):

$$REM = -\text{standardize abnormal CFO} + \text{standardize abnormal PROD} - \text{standardize abnormal DISEXP} \quad (8)$$

Real earnings management occurred by positive value of REM (Chi *et al.*, 2011).

Moderating variables are market share and financial health. Market share show the position and competition of industry. Zang (2012) stated that since REM is a departure from optimal operational decisions, it can be particularly costly for firms that face intense competition in the industry. Therefore, managers in firms who have a lower percentage of industry market share may perceive REM as more costly because it can further erode their status within the industry (Abernathy *et al.*, 2014). Market share is calculated by total sales of firm divided by total sales of industry group (within three digits of industry code) at the beginning period (Zang, 2012; Abernathy *et al.*, 2014).

For a firm in poor financial health, the marginal cost of deviating from optimal business strategies is likely to be high (Zang, 2012). In this case, management might perceive real activities manipulation as relatively costly because their primary goal is to improve operations (Abernathy *et al.*, 2014). Financial health is measured by z score of Altman (1968) at the beginning period. The higher z score, the healthier a firm. Z score of Altman (1968) as follow:

$$z = 1.2 X1 + 1.4 X2 + 3.3 X3 + 0.6 X4 + 0.999 X5 \quad (9)$$

The higher z score, the healthier a firm.

Control variables are profitability, size, growth opportunity, and sales. Profitability, size, and growth opportunities are used to control whether abnormal activities came from business condition or indication of real earnings management (Roychowdhury, 2006). Profitability is measured by return on assets (ROA) (net income before extra ordinary items divided by lagged total assets). Size is measured by logarithm of total assets period t-1. Growth opportunity is measured by market value of equity divided by total assets (MVA) period t-1. Sales used as control variables because it is related to market share. Sales measured by total sales divided by lagged total assets. ROA and MVA have positive effect on future earnings (Gunny, 2010; Liow, 2010; Muzir, 2011), so it can improves prediction earnings as well as improve earnings predictability. The bigger size and sales shows the bigger complexity in earnings prediction (Jennings *et al.*, 2015), so it will reduce earnings predictability.

Analysis Method. Descriptive statistics provide a description of data that can be seen from the mean value, standard deviation, maximum and minimum. Classical assumption testing includes normality, multicollinearity, autocorrelation, and heteroscedasticity. This research will use multiple regression as hypotheses testing. Regression model is as followed:

$$EP_t = \alpha + \beta_1 DA_t + \beta_2 IA_t + \beta_3 REM_t + \beta_4 MS_{t-1} REM_t + \beta_5 z_{t-1} REM_t + \beta_6 MS_{t-1} + \beta_7 z_{t-1} + \beta_8 ROA_t + \beta_9 Size_{t-1} + \beta_{10} MVA_{t-1} + \beta_{11} Sales_t + e \quad (10)$$

All explanations of variables in equation (2) until (10) are as follow:

Table 2. Variable Definition

Variable	Definition
TCA_t	Total current accrual period t, calculated by [net income – cash flow from operation + depreciation and amortization] divided by assets period t
CFO_{t-1}	Cash flow from operation period t-1
CFO_t	Cash flow from operation period t
CFO_{t+1}	Cash flow from operation period t+1
PPE_t	Property, plant, and equipment period t
$Sales_t$	Sales period t
$Size_t$	Logarithm of total assets period t
$\log OpCycle_{t-1}$	Logarithm of operating cycle period t. Operating cycle calculated by [days of outstanding receivable + days of inventory turnover]
$stdevCFO_t$	Standard deviation of cash flow from operation for past ten years [period t-9 until period t]
$stdevSales_t$	Standard deviation of sales for past ten years [period t-9 until period t]
$NegEarn_t$	Number of years for past ten years, where net income of firm below zero
$\Delta Sales_t$	Change of sales period t
$Production_t$	[Inventory period t minus inventory period t-1 plus cost of good sold period t] divided by assets period t
$\Delta Sales_{t-1}$	Change of sales period t-1
$Discretionary\ Expenses_t$	Sales and General Administration Expenses period t plus Research and Development Expenses period t
X1	Working capital divided by total assets
X2	Retained earnings divided by total assets
X3	Earnings before interest and tax divided by total assets
X4	Market value of equity divided by total liabilities
X5	Sales divided by total assets
EP_t	Earnings predictability period t
DA_t	Discretionary abnormal accruals period t
IA_t	Innate abnormal accruals period t
REM_t	Real earnings management period t
$MS_{t-1}REM_t$	Interaction between MS_{t-1} and REM_t
$z_{t-1}REM_t$	Interaction between z_{t-1} and REM_t
MS_{t-1}	Market share period t-1 (beginning of period t)
z_{t-1}	Financial health period t-1 (beginning of period t)
ROA_t	Return on assets period t
$Size_{t-1}$	Size of firm period t-1(beginning of period t)
MVA_{t-1}	Market value of equity to total assets period t-1(beginning of period t)

Sources: previous researches

Table 3 shows that, on average, innate abnormal accrual (5.8706) higher than discretionary abnormal accrual (0.0000). This result shows that Indonesian manufacture firms more likely to use AEM as information signaling than opportunist act. It is consistent with Siregar and Utama (2009) that AEM in Indonesia is not opportunist but for efficient purposes.

RESULTS AND DISCUSSION

Descriptive Statistics

Tabel 3. Descriptive Statistics

	N	Minimum	Maximum	Mean	Standard Deviation
EP	198	0.00	1.00	.4995	0.29232
DA	198	-8.95679	236.24708	0.0000000	23.17432255
IA	198	-7.68	11.14	5.8706	2.71384
REM	198	-7.01	13.13	0.0000	2.34782
MS x REM	198	-5.66	1.45	-0.0523	0.70134
z x REM	198	-582.82	45.76	-7.3079	47.32142
MS	198	0.00	0.91	0.1526	0.20597
Z	198	-9.94	254.13	5.5635	18.54578
SIZE	198	10.98	14.33	12.2552	0.68863
MVA	198	0.00	15.62	1.2491	2.12061
ROA	198	-0.35	2.65	0.0660	0.21774
SALES	198	0.03	5.02	1.1640	0.70680
ABCFO	198	-1.04	0.56	-0.1129	0.17238
ABPROD	198	-2.07	0.27	-0.1736	0.30747
ABDISEXP	198	-1.43	0.59	-0.1198	0.20796

REM in Indonesia, on average, is dominated by discretionary expenses cutting activity (with level of abnormal discretionary expenses 0.1198). The lowest REM practice in Indonesia is overproduction activity (with level of abnormal discretionary expenses -0.1736). Result shows that manufacture firms in Indonesia are more likely to engage in REM trough cutting of discretionary expenses.

Classical Assumption Analysis

Table 4. Classical Assumption

Test	Result	Notes
Jarque-Bera	Sig. Value = 0.175	Data is distributed normally
ARCH	Sig. Value = 0.109	Free of heterocedasticity problem
Serial Correlation LM	Sig. Value = 0.647	Free of autocorrelation problem
VIF	VIF < 10 ^a	Free of multicollinearity problem ^b

^a Except for variable interaction between Z with REM; and variable Z; VIF > 10.

^b Hartono (2010) stated that symptom of multicollinearity is happens in moderating regression, and explain that coefficient of moderating effect variable does not sensitive on change of independent variable.

Table 4 shows that significance value of *Jarque-Bera* is 0.175 (have no significant), means residual of this research distributed normally. Significance value of *ARCH* is 0.109 (have no significant), means this research is free of heterocedasticity problem. Significant value of Serial Correlation LM is 0.647 (have no significant), means that this research is free of autocorrelation problem. This research have VIF below 10, means that this research o free of multicollinearity problem. The results indicate that this research have fulfill the classical assumption.

Hypotheses Analysis

Table 5. Regression Test

Variable	Coefficient	Sig.	Notes
DA	0.000733	0.3924	H1a accepted
IA	0.016384**	0.0466	H1b accepted
REM	0.013938	0.3389	
MS x REM	0.100271**	0.0212	H2 accepted
z x REM	0.003712***	0.0097	H3 accepted
MS	0.417438***	0.0018	
Z	0.009637***	0.0048	
ROA	0.160963*	0.0909	
SIZE	-0.212644***	0.0000	
MVA	0.045505***	0.0060	
SALES	-0.135574***	0.0013	
Constant	3.014732***	0.0000	
Adjusted R-squared	0.137010		
F-statistic	3.843280***		

*** Significant in 1 percent
 ** Significant in 5 percent
 * Significant in 10 percent

Table 5 shows that F statistic significant in 1 percent, shows that all independent variables have effect on earnings predictability as well as fitness of regression model. Adjusted R-squared have value 0.137010, means all independent variables have power explanation to earnings predictability as 13.701 percent, while 86.299 power explanation of percent earnings predictability are other variables which are not including in this research.

Discretionary abnormal accrual have no significant effect (with significance value 0.3924) on earnings predictability. Innate abnormal accrual have positive significant effect (with significance value 0.0466, significant in 5 percent) on earnings predictability. As expected, it indicates that AEM as opportunist act does not support earnings predictability, while increasing of AEM as information signaling improves earnings predictability. AEM as opportunist act is done based on manager interest with no consideration of earnings quality to predict future earnings. AEM as information signaling is done based on based on business model of firm, so earnings management will reflect actual condition of firm and leads to higher earnings informativeness to predict future earnings.

Interaction between REM with market share have positive effect on earnings predictability. As expected, REM, as information signaling, communicates management competences, which is high market share that leads to high future earnings. REM have positive effect on earnings predictability, if market share is high. Information signaling of market share improves earnings predictability. REM, as information signaling, shows market share power of firm to improve higher earnings. With market share signaling, earnings will have higher predictability and help to predict future earnings.

Interaction between REM with financial health have positive effect on earnings predictability. As expected, REM, as information signaling, communicates management competences, which is high financial health that leads to high future earnings. Information signaling of financial health improves earnings predictability. REM have positive effect on earnings predictability, if financial health is high. REM, as information signaling, shows

financial health of firm to improve higher earnings. With financial health signaling, earnings will have higher predictability and help to predict future earnings.

Additional Analysis. In order to analyze which REM activities that have information signaling, either information of market share or financial health, this research examined each activities of REM as well. Over sales activity (level of abnormal CFO), over production activity (level of abnormal production cost), and discretionary expenses cutting activity (level of abnormal discretionary expenses) are examined as information signaling, by measure its effect on earnings predictability, partially.

Table 6. Additional Test

Variable	REM = ABCFO Coefficient	REM = ABPROD Coefficient	REM = ABDISEXP Coefficient
DA	0.000557	0.001032	0.000201
IA	0.016845**	0.017750**	0.016096*
REM	0.067286	0.234452**	-0.030527
MS x REM	-1.788194**	1.210589***	-0.407677
z x REM	-0.021091	0.004284	-0.033507*
MS	0.155352	0.646068***	0.359833**
Z	-0.002626	0.003442	0.007075**
ROA	0.147598	0.161161*	0.121003
SIZE	-0.161786***	-0.233638***	-0.189993***
MVA	0.024903	0.069161***	-0.008573
SALES	-0.086716*	-0.069292**	-0.104355**
Constant	2.409060***	3.216586***	2.745999***
Adjusted R-squared	0.069027	0.143069	0.088651
F-statistic	2.327880**	3.990003***	2.742105***

*** Significant in 1 percent
 ** Significant in 5 percent
 * Significant in 10 percent

Table 6 shows that interaction between market share with abnormal CFO have positive effect (coefficient value shows negative sign, since over sales measured by negative value of abnormal CFO) on earnings predictability, while interaction between financial health with abnormal CFO have no effect on earnings predictability. It indicates that over sales and activities are more likely to communicate information of good position of market share than information of financial health.

Interaction between market share with abnormal production have positive effect on earnings predictability, while interaction between financial health with abnormal production have no effect on earnings predictability. It indicates that over production activities are more likely to communicate information of good position of market share than information financial health.

Interaction between financial health with abnormal discretionary expenses have positive effect (coefficient value shows negative sign, since discretionary expenses cutting measured by negative value of abnormal discretionary expenses) on earnings predictability, while interaction between market share with abnormal discretionary expenses have no effect on earnings predictability. It indicates that discretionary expenses

cutting activity are more likely to communicate information of good financial health than information of market share.

CONCLUSION

This research is aimed to examine (1) effect of discretionary and innate accrual on earnings predictability (2) effect of market share and financial health on relationship between REM and earnings predictability. As expected, discretionary accrual as opportunist act of AEM does not support earnings predictability, while innate accrual as information signaling of business model improves earnings predictability. REM as information signaling of market share and financial health improves earnings predictability as well. In general, earnings management as information signaling is more likely to communicate condition of firm and leads to informativeness of earnings.

To academics, this research have contribution as additional literature of earnings management as information signaling of business model, market share, and financial health. To financial statement user, this research have contribution as additional information that will leads to better economic decision making with analyzing of earnings management as information signaling of business model, market share, and financial health. To regulatory bodies, this research have implication as additional information to make regulation to improve earnings management as information signaling.

Limitation of this research is does not consider chance of downward REM as information signaling. Another limitation of this research is does not consider corporate governance as agency cost to control information signaling of earnings management, both AEM and REM.

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