

# **EARNINGS MANAGEMENT AND DIVIDEND POLICY OF SMALL AND MEDIUM ENTERPRISES IN THAILAND<sup>1</sup>**

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## **ABSTRACT**

This study aims to examine earnings management of 51 small and medium enterprises listed in Market for Alternative Investment (MAI) of Thailand during 2005 – 2012. Earnings management in this study is measured by discretionary accruals based on Kasznik Model (Kasznik, 1999) and Kothari Model (Kothari *et al.*, 2005). Additionally, this study also investigates the influence of earnings management on dividend policy of these companies which are measured by two indicators, including dividend payout ratio and dividend yield, by employing fixed and random effects regression analyses. The findings reveal that listed companies in MAI had high earnings management due to high average discretionary accruals in absolute term which equalled 11.91 percent of total assets based on Kasznik Model and 12.55 percent of total assets based on Kothari Model. Moreover, earnings management is found to have the positive influence on dividend yield of listed companies in MAI. That is, one percent increase in discretionary accruals in absolute term as percentage of total assets will lead to about 0.2 percent increase in dividend yield. In contrast, earnings management is found to have no influence on dividend payout ratio.

**Keywords:** Earnings Management; Earnings Quality; Dividend Policy; SMES; Market for Alternative Investment; Thailand.

## **1. INTRODUCTION**

In making decision for smart investment in common stocks, various financial information of listed companies such as profitability, liquidity, efficiency, capital structure and etc., is required by investors. Among such information, earnings quality of companies is considered as one of the most crucial information. It is defined as a measure of the ability of reported earnings to reflect the firm's true earnings to help

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predict future earnings (Aker *et al.*, 2007). That is, earnings quality reflects the credibility of earnings numbers reported by the companies. Hence, reported earnings number of companies with high earnings quality is considered trustworthy since it can reflect the true performance of companies. Therefore, earnings quality information is likely to help investors wisely make decision in common stock investment.

One behaviour of firm which adversely affects earnings quality is earnings management. Aker *et al.* (2007) defined it as attempts by management to influence or manipulate reported earnings by using specific accounting methods (or changing methods), recognizing one-time non-recurring items, deferring or accelerating expense or revenue transactions, or using other methods designed to influence short-term earnings. Therefore, it is mostly utilized as the indicator of earnings quality. That is, companies with high earnings management will have low earnings quality. Thanks to its importance as the indicator of earnings quality, there have been several studies on the earnings management of listed companies worldwide.

In case of Thailand, although there are several previous studies on this topic, most of them only focus on earnings management of listed companies with specific characteristics, such as companies which had equity offering (Phakanon *et al.*, 2009), financial distressed companies during debt restructuring negotiation (Maneemai and Sriworadetsisan, 2009) and companies with and without debt covenant (Chiengtong, 2010), while there are a few studies which focus on earnings management of all listed companies in the stock market. That is, there are only Kiatapiwat (2010) and Netrakat (2011) who examined earnings management of all companies in the Stock Exchange of Thailand (SET) and the Market for Alternative Investment (MAI), respectively. Based on these two studies, listed companies in SET, on average, were found to have higher earnings management than those in MAI.

Earnings management is considered an unfavourable behaviour of companies which can affect not only their credibility and reputation but also their stock performance. Based on literature review, earnings management also affects dividend policy of companies (Ali Shah *et al.*, 2010; Kazemi *et al.*, 2014). That is, as companies attempt to manipulate their earnings numbers (indicating earnings management), for some reasons such as attracting investors, satisfying shareholders and creditors and etc., their reported earnings do not reflect their real performance and also the ability to pay dividends. Consequently, earnings management certainly has an impact on dividend policy. For instance, a certain company uses earnings management to increase its reported earnings number to attract investors, leading to an increase in stock price. Unfortunately, earnings management will lead to the greater accrual component of earnings, causing this component to grow faster than the cash flow component of earnings. As a result, dividend payment is unlikely to grow despite the increase in earnings and stock price.

Dividend is considered as one of the most important factors influencing investment decision making of investors since it is one of the major returns from common stock

investment. Thanks to its importance to investors, the Stock Exchange of Thailand created and launched the SET High Dividend 30 Index (SET HD) in July 2011 (SET, 2016). It is the price index of 30 selected companies which have constantly paid high dividend yield, established with the primary objective to fill the needs of investors who prefer high dividend stocks. Consequently, it is sensible to state that an insight into earnings management and dividend policy and the effect of earnings management on dividend policy of listed companies is very crucial for investors since it will enable them to make decision for smart investment in common stocks of companies with high earnings quality and dividend payment.

This study aims to examine earnings managements and dividend policy and the influence of earnings management on dividend policy of small and medium enterprises (SMEs) in Thailand because SMEs are considered as the majority in Thailand, accounting for 99.60 percent of all enterprises in the countries. They are also the major source of employment, creating 77.86 percent of total employment in Thailand (Office of SME's Promotion, 2011). Consequently, the growth of SMEs is very crucial to Thailand's economy as it will drive its economic growth and development in both short and long runs. Thanks to the importance of the growth of SMEs, the Market for Alternative Investment (MAI) was established in 1999 under the Securities Exchange of Thailand Act in order to provide fund raising opportunities for SMEs which have paid up registered capital of 20 – 300 million baht (about 0.62 – 9.33 million US dollar). In addition, the primary objectives of MAI are to provide opportunities for SMEs to access to funds, to achieve sustainable growth through transparency, good governance and to strengthen competitiveness through powerful networking (MAI, 2014). The MAI started official trading in September 2001.

At the end of December 2013, longer than 12 years since its first day of official trade, MAI index was only 356.8 (SET, 2014), indicating growth rate of only 256.8 percent. This situation implies that investing in MAI is not much interesting to investors. Perhaps, the reasons are that listed companies in MAI are relatively small and not well-known and investors tend to have little information about these companies, causing them to refrain from investing in this market. At this rate, the objectives of MAI are hardly to be accomplished. Therefore, more information about MAI is very necessary. As a result, more information about earnings management and dividend policy of listed companies will provide investors more insight into profitability and sustainability of these companies, helping them decide to invest more in MAI.

Consequently, this study aims to examine earnings management and dividend policy of 51 listed companies in MAI of Thailand during 2005 – 2012 and investigate earnings management's effect on influence on dividend policy of these companies. Earnings management in this study is measured by discretionary accruals based on Kasznik Model (Kasznik, 1999) and Kothari Model (Kothari et al., 2005) whereas dividend policy is measured by two indicators, including dividend payout ratio and dividend yield. This study also employs fixed and random effects regression analysis examine the influence of earnings management on dividend

policy. Hopefully, this study will lead to more information about MAI and, eventually, more investment in this market.

## 2. LITERATURE REVIEW

Based on Dechow and Schrand (2004), earnings is said to be high quality when earnings number accurately annuitizes the intrinsic value of the firm. Additionally, Aker *et al.* (2007) defines earnings quality as a measure of the ability of reported earnings to reflect the firm's true earnings and to help predict future earnings while Dechow *et al.* (2010) states that higher quality earnings provide more information about the features of a firm's financial performance that are relevant to a specific decision made by a specific decision-maker. Accordingly, it is reasonable to conclude that earnings quality is a measure of the ability of earnings numbers to reflect firm's true performance, earnings and value. Consequently, investing in companies with high earnings quality tends to be more profitable and sustainable than in those with low earnings quality which is mostly caused by earnings management.

Based on Healy and Wahlen (1999), earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers while McKee (2005) defines it as a reasonable and legal management decision making and reporting intended to achieve stable and predictable financial results. In addition, Aker *et al.* (2007) defines earnings management as attempts by management to influence or manipulate reported earnings by using specific accounting methods (or changing methods), recognizing one-time non-recurring items, deferring or accelerating expense or revenue transactions, or using other methods designed to influence short-term earnings. According to these definitions, earnings management is considered as one of the major indicators of earnings quality (Dechow *et al.*, 1995; Healy and Wahlen, 1999; Dechow *et al.*, 2010). That is, companies with low earnings management will have high earnings quality and vice versa.

There appears to be several ways to measure earnings management. However, according to the literature review, earnings management is mostly measured by discretionary accruals of companies (Dechow *et al.*, 1995; Dechow *et al.*, 2010). Based on Hribar and Collins (2002) total accruals of companies is the difference between net income and cash flow from operation. Moreover, the total accruals are composed of two components, including non-discretionary accruals and discretionary accruals (Jones, 1991). Non-discretionary component is accruals stemming from firm's normal operation whereas discretionary component is accruals stemming from management' earnings manipulation (Jones, 1991).

As a result, discretionary accruals are utilized to measure earnings management of companies. That is, companies with high discretionary accruals in absolute term tend to have high earnings management. Moreover, the positive discretionary accruals imply

earnings management to increase reported earnings numbers while the negative one implies earnings management to lower reported earnings numbers. Based on the literature review, there are several models widely employed to measure discretionary accruals. They include Jones model (Jones, 1991), Modified Jones Model (Dechow *et al.*, 1995), Kasznik Model (1999) and Kothari Model (Kothari *et al.*, 2005). However, in this study, Kasznik Model and Kothari Model, which are the improved versions of Modified Jones Model, are employed to measure discretionary accruals.

Earnings management has been found in various studies to affect dividend policy of listed companies. Based on literature review, dividend policy is widely measured by two indicators, including dividend payout ratio (Rafique, 2012; Kazemi *et al.*, 2014) and dividend yield (Adelegan, 2003; Farinha and Moreira, 2007). Additionally, there are several previous studies worldwide which focused on the influence of earnings management on dividend policy of listed companies; however, the results are still ambiguous. That is, earnings management was found to have no significant impact on dividend payout ratio of listed companies in Pakistan during 2001 – 2007 and listed companies in China during 2003 – 2007 (Ali Shah *et al.*, 2010), while several studies found its significant influence on dividend policy.

Several studies found the positive influence of earnings management on dividend policy of listed companies. For instance, Farinha and Moreira (2007) found the positive impact of earnings management on dividend yield of listed companies in the US during 1987 – 2003, while Rahim (2010) found that earnings management had the positive impact on both dividend payout ratio and dividend yield of listed companies in Malaysia during 2003 – 2009. Moreover, earnings management was found to have the positive influence on dividend payout ratio of listed companies on Iran during 2006 – 2011 (Morghri and Galogah, 2013) and during 2009 – 2013 (Kazemi *et al.*, 2014). The common explanation is that as companies perform earnings management to increase their earnings numbers with the objective to attract investors and satisfy shareholders, they tend to increase dividend payment despite the smaller cash flow component of earnings so that company stocks are still attractive.

On the contrary, Aurangzeb and Dilawer (2012) found that earnings management had the negative impact on dividend payout ratio of listed companies in Pakistan during 1966 – 2008 while Haider *et al.* (2012) found the negative influence of earnings management on dividend payout ratio of companies in Pakistan during 2005 – 2009. The explanation is that the increase in earnings numbers of companies, stemming from earnings management, is likely to make companies more attractive, leading to the increase in stock prices. However, the greater earnings numbers and stock prices do not reflect the true performance and earnings of companies. Moreover, cash flow component of earnings is more likely to grow slower than accruals component of earnings. As a result, their ability to pay dividend does not increase (while earnings and stock price increase), causing dividend payout ratio and dividend yield to decline.

Besides earnings management, dividend policy is also determined by profitability. That is, Adelegan (2003), Afza and Mirza (2010), Imran (2011) and Morghri and Galogah (2013) found that profitability had the positive effect on dividend policy of listed companies. Additionally, Adelegan (2003) and Afza and Mirza (2010) found the positive influence of profitability on dividend policy of listed companies while Imran (2011) found the negative impact on dividend policy. Leverage was also found to have the negative impact on dividend policy of companies, based on Afza and Mirza (2010) and Morghri and Galogah (2013). Sale growth and liquidity are also the determinants of dividend policy but the directions are ambiguous. That is, Imran (2011) found the positive influence of sale growth on dividend policy but Gill *et al.* (2010) found the negative impact. Moreover, Imran (2011) found the negative impact of liquidity on dividend policy whereas Juma'h and Pacheco (2008) found the positive effect. Mirza and Afza (2014) also found the positive influence of cash flow from operation on dividend policy of listed companies in South Asia. Finally, size was found by Juma'h and Pacheco (2008), Imran (2011) and Rafique (2012) to have the positive effect on dividend policy while Afza and Mirza (2010) and Morghri and Galogah (2013) found that size had the negative impact on it.

In case of Thailand, there are several previous studies about earnings management of listed companies. However, most of them focus only on earnings management of listed companies in Stock Exchange of Thailand (SET) which are large companies with paid up registered capital over 300 million baht (9.26 million US dollar) (Sukwiboon, 2009; Maneemai and Sriworadetpisan, 2009; Kiatapiwat, 2010; Sritarapipat, 2011) whereas there is only the study from Netrakat (2011) which focuses on earnings management of listed companies in MAI during 2001 – 2010. Nevertheless, Netrakat (2011) only presented the average earnings management during the whole study period, causing a limitation on information regarding earnings management of listed companies in MAI. In addition, the study on the impact of earnings management on dividend policy is not yet found. Consequently, this study aims to fill these research gaps by examining earnings management of listed companies in MAI in each year during 2001 – 2012 and investigating the influence of earnings management on dividend policy of these companies.

### 3. DATA AND SOURCES

This study includes 51 small and medium enterprises listed in MAI during 2005 – 2012, totally 317 company-years, excluding financial institutes and companies which do not have accounting period ending on December 31. Additionally, this study relies on financial data in annual format of each company presented in financial reports, including statement of financial position, statement of comprehensive income and statement of cash flow. All data are obtained from the SETSMART database provided by Stock Exchange of Thailand (SET). Data utilized in this study include total assets, total liabilities, current assets, current liabilities, sale revenues, cash flow from operation, net income, account receivable, premises, plant and equipment, dividend payout ratio and dividend yield.

#### 4. ANALYTICAL METHODS

This section is divided into three sub-sections. The first sub-section presents the measurement of earnings management while the second one presents the measurement of dividend policy. The final sub-section presents the analysis of the influence of earnings management on dividend policy.

##### 4.1. Measurement of Earnings Management

Earnings management in this study is measured by discretionary accruals in absolute term of each company. Two total accruals models, which are Kasznik Model (Kasznik, 1999) and Kothari Model (Kothari *et al.*, 2005), are employed to test the robustness of the models. These two total accrual models are the improved versions of Modified Jones Model (Dechow *et al.*, 1995) which cash flow from operation and return on assets (ROA) are added into the original Modified Jones Model, respectively, so that these two models have the small statistical errors and the greater reliability (Kasznik, 1999; Kothari *et al.*, 2005). Kasznik Model (Kasznik, 1999) can be expressed as the following.

$$\frac{VC_{v3}}{VC_{v3}} = \beta_0 + \beta_1 \frac{3}{VC_{v3}} + \beta_2 \frac{\Delta REV_t - \Delta REC_t}{VC_{v3}} + \beta_3 \frac{PPE_t}{TA_{t-1}} + \beta_4 \frac{\Delta CFO_t}{TA_{t-1}} + \varepsilon_t \quad (1)$$

$$TAC_t = NI_t - CFO_t$$

In addition, Kothari Model (Kothari *et al.*, 2005) can be expressed as the following

$$\frac{TAC_t}{TA_{t-1}} = \beta_0 + \beta_1 \frac{1}{TA_{t-1}} + \beta_2 \frac{\Delta REV_t - \Delta REC_t}{VC_{v3}} + \beta_3 \frac{PPE_t}{TA_{t-1}} + \beta_4 \frac{ROA_t}{TA_{t-1}} + \mu_t \quad (2)$$

$$TAC_t = NI_t - CFO_t$$

- Where
- $TAC_t$  = Total accruals in year t
  - $NI_t$  = Net income in year t
  - $CFO_t$  = Cash flow from operation in year t
  - $TA_{t-1}$  = Total assets in year t – 1
  - $REV_t$  = Sale revenue in year t
  - $REC_t$  = Account receivable in year t
  - $PPE_t$  = Premises, plant and equipment in year t
  - $ROA_t$  = Return on assets in year t
  - $\alpha_i, \beta_i$  = Parameters where  $i = 0, 1, 2, 3, 4$
  - $\varepsilon_t, \mu_t$  = Error term

Based on Kasznik (1999), total accruals of companies are composed of two components, including non-discretionary accruals and discretionary accruals. The discretionary accruals are considered as the measure of earning management of companies. Additionally, the non-discretionary accruals (NDA) are measured by the part which can be explained by the regression equation (1). That is,  $\frac{TAC_t}{TA_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{TA_{t-1}} + \alpha_2 \frac{\Delta REV_t - \Delta REC_t}{TA_{t-1}} + \alpha_3 \frac{PPE_t}{TA_{t-1}} + \alpha_4 \frac{\Delta CFO_t}{TA_{t-1}} + \varepsilon_t$ , while the discretionary accruals (DA) are measured by the part which is left unexplained by the regression equation (1). In other words, the discretionary accruals (DA) are measured by the error terms ( $\varepsilon$ ) in equation (1). They can be calculated by the following steps.

*Step 1:* Estimate equation (1) and obtain estimated parameter,  $\hat{\alpha}_0, \hat{\alpha}_1, \hat{\alpha}_2, \hat{\alpha}_3$  and  $\hat{\alpha}_4$ .

*Step 2:* Use  $\hat{\alpha}_0, \hat{\alpha}_1, \hat{\alpha}_2, \hat{\alpha}_3$  and  $\hat{\alpha}_4$  to calculate non-discretionary accruals (NDA). That is,

$$NDA = \hat{\alpha}_0 + \hat{\alpha}_1 \frac{1}{TA_{t-1}} + \hat{\alpha}_2 \frac{\Delta REV_t - \Delta REC_t}{TA_{t-1}} + \hat{\alpha}_3 \frac{PPE_t}{TA_{t-1}} + \hat{\alpha}_4 \frac{\Delta CFO_t}{TA_{t-1}}$$

*Step 3:* Calculate discretionary accruals (DA) by subtracting NDA from total accruals.

$$\text{That is, } DA = \hat{\varepsilon} = \frac{TAC_t}{TA_{t-1}} - NDA$$

Likewise, the non-discretionary accruals (NDA) in Kothari Model are measured by the part which can be explained by the regression equation (2). That is,  $\frac{TAC_t}{TA_{t-1}} = \beta_0 + \beta_1 \frac{1}{TA_{t-1}} + \beta_2 \frac{\Delta REV_t - \Delta REC_t}{TA_{t-1}} + \beta_3 \frac{PPE_t}{TA_{t-1}} + b_4 \frac{ROA_t}{TA_{t-1}} + \mu_t$ , while the discretionary accruals (DA) are measured by the error terms ( $\mu$ ) in the equation. They can be calculated by the same manner as those in Kasznik Model.

The estimated discretionary accruals will be presented in absolute term to illustrate earnings management of listed companies in MAI. The company with high DA in absolute term is considered to have high earnings management and, of course, low earnings quality. Note that both NDA and DA are presented in term of the proportion of non-discretionary and discretionary accruals to total assets.

#### 4.2. *Measurement of Dividend Policy*

Dividend policy in this study is measured by two indicators, including dividend payout ratio and dividend yield. That is,

$$\text{Dividend Payout Ratio} = \frac{\text{Dividend per Share}}{\text{Earning per Share}} \times 100$$

and



$$\text{Dividend Yield} = \frac{\text{Dividend per Share}}{\text{Price per Share}} \times 100$$

### 4.3. Analysis of the Influence of Earnings Management on Dividend Policy

This section aims to investigate the influence of earnings management of dividend policy of listed companies in MAI by employing fixed effects and random effects regression analyses thanks to panel data used in this study. Note that an unbalanced panel data of 51 companies during 2005 – 2012, totally 317 company-years, are analyzed. The estimated model can be expressed as the following.

$$\text{DP}_{it} = \beta_0 + \beta_1 \text{EM}_{it} + \beta_2 \text{PROF}_{it} + \beta_3 \text{LIQ}_{it} + \beta_4 \text{LEV}_{it} + \beta_5 \text{CFO}_{it} + \beta_6 \text{SIZE}_{it} + \beta_7 \text{GROW}_{it} + \mu_{1it} \quad (3)$$

$$\text{DY}_{it} = \delta_0 + \delta_1 \text{EM}_{it} + \delta_2 \text{PROF}_{it} + \delta_3 \text{LIQ}_{it} + \delta_4 \text{LEV}_{it} + \delta_5 \text{CFO}_{it} + \delta_6 \text{SIZE}_{it} + \delta_7 \text{GROW}_{it} + \mu_{2it} \quad (4)$$

#### Dependent variables

$\text{DP}_{it}$  = Dividend payout ratio of company i in year t (%)

$\text{DY}_{it}$  = Dividend yield of company i in year t (%)

#### Independent variable

$\text{EM}_{it}$  = Discretionary accruals in absolute term of company i in year t

#### Control variable

$\text{PROF}_{it}$  = Profitability of company i in year t [(net income/total assets) x 100]

$\text{LIQ}_{it}$  = Liquidity of company i in year t [(current assets/current liabilities) x 100]

$\text{LEV}_{it}$  = Leverage of company i in year t [(total liabilities/total assets) x 100]

$\text{CFO}_{it}$  = Cash flow from operation of company i in year t [(cash flow from operation/total assets) x 100]

$\text{SIZE}_{it}$  = Size of company i in year t [ln(total assets)]

$\text{GROW}_{it}$  = Sale growth of company i in year t [annual growth rate of sale revenue]

Due to panel data used in this study, there is an unobserved effect of each company which also affects dividend policy, causing pooled ordinary least squares (OLS) estimators to be biased and inconsistent. Such bias is called heterogeneity bias which is caused by omitting a time-invariant unobserved effect (Wooldridge, 2003). In this study, such unobserved effect is company fixed effect. Suppose that the variable  $a_i$  presents all unobserved, time-invariant factors that affect dividend policy. The fixed effects regression model with unobserved effect,  $a_i$ , can be presented as the following.

$$DP_{it} = \beta_0 + \beta_1 EM_{it} + \beta_2 PROF_{it} + \beta_3 LIQ_{it} + \beta_4 LEV_{it} + \beta_5 CFO_{it} + \beta_6 SIZE_{it} + \beta_7 GROW_{it} + a_{1i} + \mu_{1it} \quad (5)$$

$$DY_{it} = \delta_0 + \delta_1 EM_{it} + \delta_2 PROF_{it} + \delta_3 LIQ_{it} + \delta_4 LEV_{it} + \delta_5 CFO_{it} + \delta_6 SIZE_{it} + \delta_7 GROW_{it} + a_{2i} + \mu_{2it} \quad (6)$$

Based on Wooldridge (2003), fixed effects regression analysis is appropriate for estimating panel data if the unobserved effect,  $a_i$ , is correlated with one or more of explanatory variables in the model. But if  $a_i$  is uncorrelated with explanatory variables in all time periods, random effects regression analysis is more appropriate.

Under the concept of random effects regression,  $a_i$  is uncorrelated with explanatory variables. As a result, company is instead considered as random effect. In this case,  $a_i$  is considered as a part of residual term, called composite error time ( $v_{it}$ ) as  $v_{it} = a_i + \mu_{it}$  (Wooldridge, 2003). Therefore, the random effects model can be identified as the following:

$$DP_{it} = \beta_0 + \beta_1 EM_{it} + \beta_2 PROF_{it} + \beta_3 LIQ_{it} + \beta_4 LEV_{it} + \beta_5 CFO_{it} + \beta_6 SIZE_{it} + \beta_7 GROW_{it} + v_{1it} \quad (7)$$

$$DY_{it} = \delta_0 + \delta_1 EM_{it} + \delta_2 PROF_{it} + \delta_3 LIQ_{it} + \delta_4 LEV_{it} + \delta_5 CFO_{it} + \delta_6 SIZE_{it} + \delta_7 GROW_{it} + v_{2it} \quad (8)$$

The  $v_{it}$  are serially correlated across time since  $a_i$  is in the composite error in each time period. That is,

$$\text{Corr}(v_{it}, v_{is}) = \frac{\sigma_a^2}{(\sigma_a^2 + \sigma_\mu^2)}, t \neq s \quad (9)$$

where  $\sigma_a^2$  is the variance of  $a_i$  and  $\sigma_\mu^2$  is the variance of  $\mu$ .

Whether fixed or random effects regression model will be accepted depends on the Hausman test which tests whether random effects estimation would be appropriate. The null hypothesis ( $H_0$ ) and the alternative hypothesis ( $H_a$ ) for the Hausman test are;

*H<sub>0</sub>: Unobserved effect,  $a_i$ , and explanatory variables are uncorrelated, implying that random effects would be consistent and efficient.*

*H<sub>a</sub>: Unobserved effect,  $a_i$ , and explanatory variables are correlated, implying that random effects would be inconsistent and inefficient.*

If the Hausman test statistic is statistically significant at 5 percent level, it means that the random effects are inconsistent, implying that the fixed effects are assumed.

Additionally, if the Hausman test suggests that random effects model is appropriate than fixed effects model, Breusch-Pagan Lagrange Multiplier (LM) test will be performed to decide between random effects model and pooled OLS model. The null hypothesis ( $H_0$ ) and the alternative hypothesis ( $H_a$ ) for the LM test are;

$H_0$ : The variance across entities is zero, indicating no significant difference across units.

$H_a$ : The variance across entities is not zero, indicating the significant difference across units.

If the LM test statistic is statistically significant at 5 percent level, random effects model will be appropriate. In contrast, if it is not significant, random effects model will not be appropriate, implying that pooled OLS will be employed.

## 5. EMPIRICAL RESULTS

Table 1 presents descriptive statistics of several financial data of 51 listed companies in MAI in this study during the study period. The findings reveal that these companies, on average, had total assets of 28.52 million US dollar. In addition, the mean values of total liabilities and owner's equity were 15.28 and 13.24 million US dollar, respectively, indicating that these companies mostly relied on debt financing. Furthermore, these companies, on average, had sale revenue and total revenue of 29.52 and 30.58 million US dollar, respectively. This finding implies that sale of goods and rendering services are the most important source of revenue of listed companies in MAI, generating revenue over 96 percent of total revenue. Based on Table 1, listed companies in MAI had the average net income and cash flow from operation of only 1.45 and 1.08 million US dollar, respectively.

**Table 1:** Descriptive statistics (million US dollar)

Statistics	TA	DE	EQ	REV	TR	NI	CFO
Mean	28.52	15.28	13.24	29.52	30.58	1.45	1.08
Median	21.62	8.10	10.60	22.39	23.06	1.31	1.37
Std. Dev.	32.44	25.74	10.81	30.29	30.36	3.71	10.50
Maximum	280.47	226.42	95.39	322.68	322.05	39.70	50.24
Minimum	1.79	0.12	-2.18	0.12	0.22	-9.09	-113.86

*Notes:* TA = total assets, DE = total liabilities, EQ = owner's equity, REV = sales revenue, TR = total revenue, NI = net income and CFO = cash flow from operation. Exchange rate is 32.25 Thai baht per 1 US dollar.

Table 2 summarizes the situation regarding earnings management, as measured by discretionary accruals in absolute term based on Kasznik Model (1999) and Kothari Model (Kothari et al., 2005), of 51 listed companies in MAI of Thailand. The findings reveal that during 2005 – 2012, listed companies in MAI, on average, obviously had high earnings management due to the high average discretionary accruals in absolute term of

11.91 percent of total assets based on Kasznik Model. As looking at the earnings management based on Kothari Model, the findings reveal the very similar results. That is, listed companies in MAI had the high average discretionary accruals in absolute term of 12.55 percent of total assets, reflecting high earnings management as well. In addition, as comparing the results from two different models, the earnings management based on Kothari Model is found to be slightly higher than that from Kasznik Model in almost every year. However, the results from these two models are highly correlated with the correlation coefficient of 0.9682, indicating the robustness of these two accruals models.

**Table 2:** Discretionary accruals in absolute term (as proportion of company's total assets)

Year	No.	Kasznik Model				Kothari Model			
		Mean	Std. Dev.	Max	Min	Mean	Std. Dev.	Max	Min
2005	19	0.1131	0.1206	0.4440	0.6101	0.1585	0.1446	0.0020	0.0069
2006	31	0.1160	0.0985	0.4181	0.3888	0.1130	0.1031	0.0062	0.0026
2007	34	0.1194	0.1314	0.6726	0.5514	0.1340	0.1146	0.0136	0.0050
2008	39	0.0812	0.0711	0.3604	0.3031	0.0977	0.0826	0.0058	0.0017
2009	41	0.1228	0.1081	0.5681	0.5797	0.1203	0.1089	0.0056	0.0026
2010	51	0.1565	0.3687	2.6192	0.6471	0.1358	0.1343	0.0026	0.0022
2011	51	0.1261	0.1482	0.7400	1.0333	0.1408	0.1681	0.0051	0.0046
2012	51	0.1046	0.1416	0.9125	1.0942	0.1150	0.1655	0.0004	0.0006
<b>2005-12</b>	<b>317</b>	0.1191	0.1852	2.6192	1.0942	0.1255	0.1335	0.0004	0.0006

*Notes:* Pearson Correlation Coefficient between discretionary accruals from Kasznik and Kathari Model is 0.9682 with P-Value of 0.000, indicating that earnings management calculated from these two models are highly correlated.

Based on Table 2, earnings management of listed companies in MAI from both Kasznik and Kothari Models exhibited slight downward trend during 2005 – 2008. That is, the average discretionary accruals in absolute term from Kasznik Model decreased from 11.31 percent of total assets in 2005 to its lowest level at 8.12 percent in 2008, whereas that from Kothari model decreased from 15.85 percent of total assets in 2005 to its lowest level at 9.77 percent in 2008. Nevertheless, after 2008, the earnings management from these two models followed slightly different patterns. That is, the average discretionary accruals in absolute term from Kasznik Model constantly rose from 2008 to 2010, thereafter it continuously declined from 15.65 percent of total assets in 2010 to 10.46 percent in 2012. In a different way, the average discretionary accruals in absolute term from Kothari Model persistently increased during 2009 – 2011 before it sharply decreased from 14.08 percent of total assets in 2011 to 11.50 percent in 2012.

Descriptive statistics of dividend policy and determinants of dividend policy are presented in Table 3. The findings reveal that the average dividend payout ratio of listed companies in MAI of Thailand during 2005 – 2012 was 56.99 percent with the standard deviation of 45.60 percent. In addition, the average dividend yield of these 51 companies in MAI equalled 5.87 percent with the standard deviation of 4.89 percent.

These figures imply vast difference of dividend payout ratio and dividend yield among these 51 listed companies. Moreover, the findings reveal that 51 listed companies in MAI, on average, had net income, total liabilities and cash flow from operation of 2.51, 46.04 and 5.72 percent of total assets. Moreover, they had the average current asset to current liabilities ratio of 2.76 and had the average sale growth rate of 9.74 percent per year.

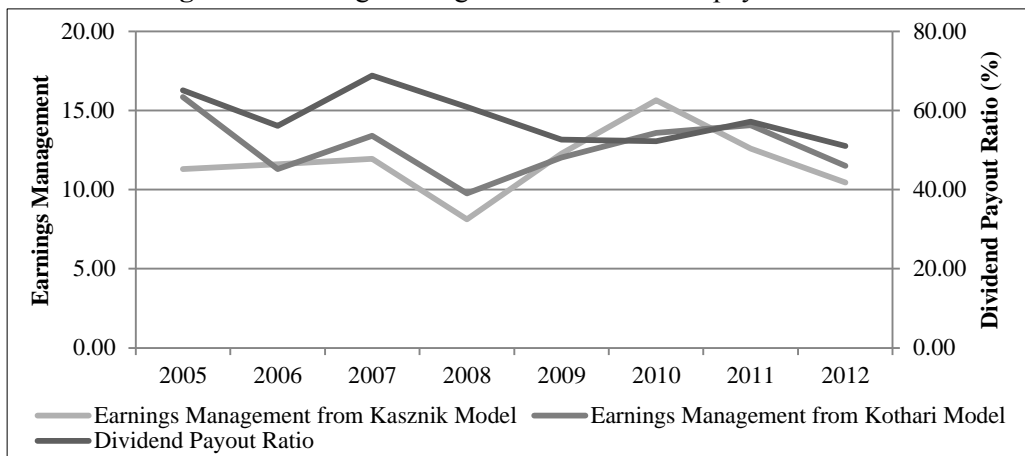
**Table 3:** Descriptive statistics of dividend policy and determinants of dividend policy

Statistics	DP	DY	PROF	LIQ	LEV	CFO	GROW
Mean	56.99	5.87	2.51	2.76	46.04	5.72	9.74
Median	46.31	4.84	5.39	1.50	43.84	8.48	10.24
Std. Dev.	45.60	4.89	17.74	4.19	25.20	17.40	53.59
Maximum	352.77	50.00	42.65	43.36	132.65	133.44	611.22
Minimum	0.97	0.05	-107.51	0.02	2.08	-53.34	-219.72

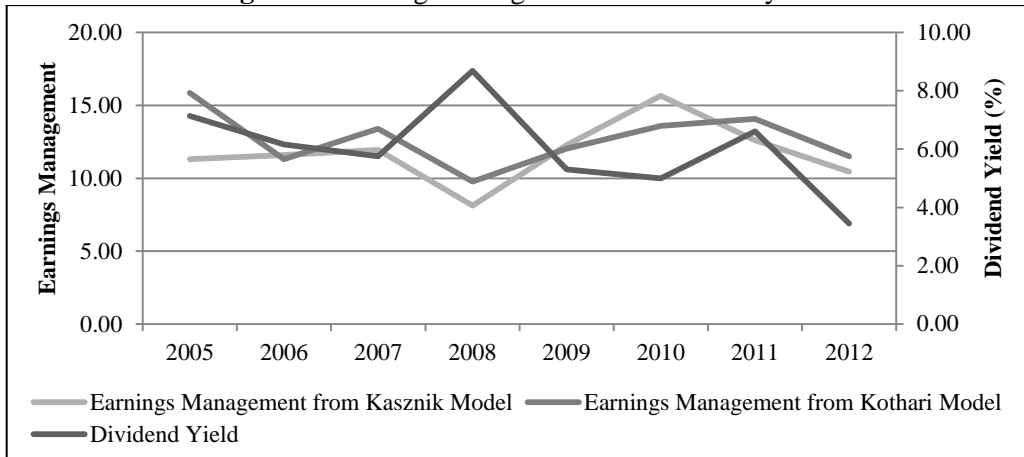
*Notes:* DP = dividend payout ratio (%), DY = dividend yield (%), PROF = net income to total assets ratio (%), LIQ = current asset to current liabilities ratio (times), LEV = debt to total assets ratio (%), CFO = cash flow from operation to total assets ratio (%) and GROW = growth rate of sale revenue (%).

Earnings management from both Kasznik Model and Kothari Model and dividend payout ratio of 51 listed companies in MAI during 2005 – 2012, on average, are presented in Figure 1, while Figure 2 presents earnings management and dividend yield during the same period. Based on Figure 1, dividend payout ratio and earnings management seem to be positively correlated. In other words, the higher earnings management is likely to lead to the greater dividend payout ratio. Meanwhile, Figure 2 shows that earnings management and dividend yield seem to be positively correlated before 2006 and after 2010, but negatively correlated during 2006 – 2010. As a result, the relationship between dividend yield and earnings management is still ambiguous.

**Figure 1:** Earnings management and dividend payout ratio



*Note:* Earnings management from both models is measured by discretionary accruals in absolute term (percent of total assets).

**Figure 2: Earnings management and dividend yield**

**Note:** Earnings management from both models is measured by discretionary accruals in absolute term (percent of total assets).

Table 4 presents correlation coefficients of independent variable and all control variables in fixed and random effects regression models. Based on this table, there appears to be no multicollinearity problem in the fixed and random effects regression analyses in this study. This is because there is no pair of variables with correlation coefficients over 0.6 or under -0.6 which indicate high linear relationship between them. Therefore, fixed and random effects regression models in this study are valid.

**Table 4: Correlations coefficient of independent variable and control variables**

	EM (Kasznik)	EM (Kothari)	PROF	LIQ	LEV	CFO	SIZE	GROW
<b>EM (Kasznik)</b>	1.000							
<b>EM (Kothari)</b>	0.968	1.000						
<b>PROF</b>	-0.039	-0.021	1.000					
<b>LIQ</b>	0.064	0.065	0.118**	1.000				
<b>LEV</b>	0.101*	0.082	-0.215***	-0.520***	1.000			
<b>CFO</b>	-0.183***	-0.185***	0.463***	0.145**	-0.215***	1.000		
<b>SIZE</b>	0.179***	0.198***	0.386***	-0.095*	0.245***	0.059	1.000	
<b>GROW</b>	0.197***	0.075	0.292***	-0.043	-0.001	0.038	0.199***	1.000

**Notes:** EM = discretionary accruals in absolute term, PROF = net income to total assets ratio, LIQ = current asset to current liabilities ratio, LEV = debt to total assets ratio, CFO = cash flow from operation to total assets ratio, SIZE = total assets in natural logarithm and GROW = growth rate of sale revenue. Moreover, \*, \*\* and \*\*\* indicate statistical significance at 10, 5 and 1 percent level, respectively.

Table 5 presents the results from regression analyses. As looking at dividend payout ratio models (with earnings management from both Kasznik Model and Kothari Model), pooled GLS models are estimated to eliminate the heteroskedasticity problem. Based on the model with earnings management from Kasznik Model, the findings reveal that earnings management does not have any significant influence on dividend payout ratio of listed companies in MAI. However, only profitability and sale growth are found to have the significantly negative effect on dividend payout ratio. That is, one percent increase in net

income to total assets ratio and sale growth rate will lead to 1.7461 and 0.3217 percent decrease in dividend payout ratio, respectively.

Additionally, the findings from regression analysis on dividend payout ratio with earnings management from Kothari Model also reveal that dividend payout ratio of listed companies in MAI is not affected by earnings management but negatively influenced by profitability and sale growth. That is, one percent increase in net income to total assets ratio and sale growth rate will cause dividend payout ratio to decline by 1.8224 and 0.3825 percent, respectively. These findings are very similar to those from the model with earnings management from Kasznik Model mentioned above. However, there are two more factors which significantly affect dividend payout ratio based on this model, including cash flow from operation and size of company. Size of company is found to have the negative effect on dividend payout ratio, where cash flow from operation has the significantly positive influence on it. More clearly, dividend payout ratio of listed companies in MAI tends to increase by 0.8654 percent as cash flow from operation to total assets ratio increases by one percent. Furthermore, companies in MAI are likely to have the lower dividend payout ratio as they become larger (having the greater total assets).

In addition, it is noticed that the constant terms from these two dividend payout ratio models are very large (168.6093 and 213.7888), far greater than the average dividend payout ratio (56.99 percent). These figures imply that most factors seem to have the negative impact on dividend payout ratio of the SMEs listed in MAI.

Now let's look at dividend yield models. The findings reveal that random effects model is appropriate in case of the model with earnings management from Kasznik Model. Based on this model, earnings management has the significantly positive influence on dividend yield of listed companies in MAI. That is, one percent increase in discretionary accruals in absolute term as percentage of total assets will lead to 0.2067 percent increase in dividend yield. Additionally, liquidity, leverage and cash flow from operation are also found to have the positive influence on dividend yield. That is, one time increase in current asset to current liabilities ratio and one percent increase in total liabilities to total assets ratio and cash flow from operation to total assets ratio will lead to 0.6846, 0.0633 and 0.2530 percent increase in dividend yield, respectively. On the other hand, profitability is found to have the negative impact on dividend yield. That is, one percent increase in net income to total assets ratio will lead to 0.2025 percent decrease in dividend yield.

The findings from dividend yield model with earnings management from Kothari model are similar to those from Kasznik model. That is, dividend yield of listed companies in MAI is positively influenced by earnings management as one percent increase in discretionary accruals in absolute term as percentage of total assets will lead to 0.1979 percent increase in dividend yield. Moreover, it is also positively determined by liquidity and cash flow from operation. That is, dividend yield of these SMEs is likely to increase by 0.6859 and 0.2375 percent if current asset to current liabilities ratio increases by one time and cash flow from operation to total assets ratio increases by one percent, respectively. However, the findings reveal that dividend yield and size of listed companies in MAI are negatively related, implying that companies in MAI are likely to have the lower dividend yield as they become larger. In addition, one percent increase in net income to total assets ratio and sale growth rate will cause dividend yield to decline by 0.1393 and 0.0219 percent, respectively, indicating the negative impact of profitability and sale growth on dividend yield.

Table 5: Results from fixed and random effects regression analyses

	Dividend Payout Ratio				Dividend Yield			
	EM (Kasznik)		EM (Kothari)		EM (Kasznik)		EM (Kothari)	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
EM (Kasznik)	0.5445	0.215	-	-	0.2067***	0	-	-
EM (Kothari)	-	-	0.6492	0.189	-	-	0.1979***	0
PROF	-1.7461**	0.016	-1.8224**	0.015	-0.2025***	0	-0.1393**	0.015
LIQ	1.4718	0.321	0.9449	0.558	0.6848***	0	0.6859***	0.003
LEV	-0.0018	0.995	-0.0715	0.802	0.0633**	0.013	0.0333	0.455
CFO	0.7007	0.103	0.8654*	0.096	0.2530***	0	0.2375***	0
SIZE	-7.4771	0.227	-10.3347*	0.09	-0.503	0.409	-1.8991*	0.083
GROW	-0.3217***	0.007	-0.3825***	0.001	-0.006	0.46	-0.0219**	0.015
Constant	168.6093**	0.032	213.7888***	0.007	7.4657	0.323	28.2541**	0.04
Observations	183		183		211		211	
Hausman Stat	9.66		10.89		6.98		14.6700**	
P-Value	0.2089		0.1436		0.4308		0.0405	
LM stat	0.44		0.38		12.7200***		-	
P-Value	0.5057		0.5374		0.0004		-	
Chosen Model	Pooled GLS		Pooled GLS		Random Effects		Fixed Effects	
Wooldridge Test Stat	0.01		0.014		0.435		0.664	
P-Value	0.9198		0.9097		0.5137		0.4206	

Notes: \*, \*\* and \*\*\* indicate statistical significance at 10, 5 and 1 percent levels, respectively. Moreover, Wooldridge Test stat is the Wooldridge Test statistic for autocorrelation in panel data. In case of both dividend payout ratio models, the Hausman test statistics are not significant at any level, indicating that random effects model is consistent and more appropriate than fixed effects model. However, the Breusch-Pagan LM test statistics are not significant at any level, suggesting that pool OLS model is more appropriate than random effects model. Nevertheless, there appears to be the heteroskedasticity problem in pooled OLS model (not shown in the table), therefore pooled generalized least squares (GLS) is instead analyzed in order to eliminate this problem. In case of dividend yield model with earnings management from Kasznik Model, the Hausman test statistic is not significant at any level, indicating that random effects model is consistent and more appropriate than fixed effects model. Moreover, the Breusch-Pagan LM test statistics is significant at 1 percent level, implying that random effects model is more appropriate than pooled OLS model. On the contrary, the Hausman test statistic from dividend yield model with earnings management from Kothari Model is significant 5 percent level, indicating that fixed effects model is more appropriate than random effects model.



## 6. DISCUSSION

This study finds that small and medium enterprises listed in Market for Alternative Investment (MAI) of Thailand during 2005 – 2012 had average discretionary accruals in absolute term of 11.91 percent of total assets based on Kasznik Model and 12.55 percent of total assets based on Kothari Model. These figures indicate high earnings management in MAI of Thailand during the study period. However, these findings are vastly different to those from Netrakat (2011) who found that the mean value of discretionary accruals in absolute term, based on Ball and Shivajumar Model (Ball and Shivajumar, 2006) of listed companies in MAI was only 2.91 percent of total assets during 2001 – 2010, implying low earnings management. This finding suggests that results from different accruals models tend to be different. Nevertheless, this study employs two major accruals models, including Kasznik and Kothari Models and finds the similar level of earnings management based on these two models; therefore the results from this study are considered convincing.

In comparison to earnings management in the Stock Exchange of Thailand (SET) which is the primary stock market of Thailand, we find that earnings management in MAI is much higher than that in SET which is suggested by Kiatapiwat (2010). That is, Kiatapiwat (2010) found that the average discretionary accruals in absolute term based on Kothari Model (Kathari *et al.*, 2005) were 5.90 percent of total assets. These findings imply that earnings quality of listed companies in MAI is lower than that in SET.

Moreover, this study also fills several research gaps of Netrakat (2011) which is the only study on earnings management in MAI of Thailand. That is, it finds that earnings management in MAI exhibited a slight downward trend during 2005 – 2012, showing the gradually higher earnings quality of listed companies in MAI. It also finds that earnings management has the positive influence on dividend policy of listed companies in MAI as measured by dividend yield. This finding is complied with Farinha and Moreira (2007) and Rahim (2010) who also found the positive impact of earnings management on dividend yield of listed companies USA and Malaysian stock markets. The reason is that as companies perform the greater earnings management to increase their earnings numbers in order to make their stocks more attractive to investors and have the higher prices, they tend to increase dividend payment to raise the dividend yield so that company stocks are still attractive.

On the contrary, this study finds that earnings management has no impact on dividend policy of SMEs listed in MAI as measured by dividend payout ratio. This is because the greater earnings management of companies is likely to help increase earnings numbers, stemming from the greater accruals component of earnings but not their cash flow component which reflects the ability to pay dividends of companies. Consequently, the greater earnings management does not lead to the greater dividend payout ratio in case of listed companies in MAI. As looking at the other factors, cash flow from operation has the positive influence on both dividend payout ratio and dividend yield, supporting the statement that cash flow component of earnings is one of the major factors which determine the ability to pay dividends of listed companies. These findings are complied with Mirza and Afza (2014). Furthermore, liquidity also has the positive effect on dividend

policy since it reflects the ability of companies to convert their assets into cash. This finding is complied with Juma'h and Pacheco (2008).

It is somewhat surprising that profitability and dividend policy, both dividend payout ratio and dividend yield, are negatively related. These findings are complied with Imran (2011). The reason is that, in the context of Thailand, most investors are more concerned about capital gains from stocks than dividend payouts, making them have the higher interest on stocks of high profitability companies rather than high dividend payment companies. As a result, as companies have the greater profitability, they are likely to pay less dividends since they are confident that their stocks are still attractive thanks to the greater profits. Like Gill *et al.* (2010), this study finds the negative impact of sale growth on dividend policy, implying that the greater sales of listed companies in MAI come from credit sales rather than cash sales. Therefore, they are likely to have the greater account receivable not the greater cash, leading to the lower ability of pay dividends. Eventually, this study finds that as companies become larger, they tend to pay less dividends, complied with Afza and Mirza (2010) and Morghri and Galogah (2013). This is because most of large companies in MAI are well-known companies selling well-known products, causing their common stocks more attractive to investors in the first place. With this advantage, dividend payment of these larger companies is lower than that of the smaller companies.

## 7. CONCLUSION AND RECOMMENDATIONS

This study aims to examine earnings management of 51 listed companies in Market for Alternative Investment (MAI) of Thailand during 2005 – 2012. Earnings management in this study is measured by discretionary accruals based on Kasznik Model (Kasznik, 1999) and Kothari Model (Kothari *et al.*, 2005). Additionally, this study also investigates the influence of earnings management on dividend policy of these companies which are measured by two indicators, including dividend payout ratio and dividend yield. The findings reveal that listed companies in MAI had high earnings management due to high average discretionary accruals in absolute term about 12 percent of total assets. Nevertheless, earnings management of these companies exhibited the slight downward trend during the study period.

Moreover, earnings management is found to have the positive influence on dividend yield of listed companies in MAI. That is, one percent increase in discretionary accruals in absolute term as percentage of total assets will lead to about 0.2 percent decrease in dividend yield. In contrast, earnings management is found to have no influence on dividend payout ratio. This study also finds that dividend payout ratio is determined by profitability, cash flow from operation, size of company and sale growth while dividend yield is determined by profitability, liquidity, leverage, cash flow, size of company and sale growth.

This study sheds more light on the situation regarding earnings management of listed companies in MAI of Thailand and also on its influence on dividend policy of these companies. The results from this study will be useful to investors who may utilize them

to make investment decision. As investors gain more information about listed companies in MAI, they are likely to be more confident and invest more in this market. Furthermore, the results from this study will be also useful to authorities such as the Securities and Exchange Commission (SEC), the Stock Exchange of Thailand (SET) and the Market for Alternative Investment (MAI), which may utilize them to formulate and implement the appropriate policies to monitor and control listed companies in MAI so that they will not have high earnings management, leading to the better trustworthiness of MAI and, eventually, the sustainable growth of this market.

Nevertheless, this study has some limitations that must be noted. First of all, this study covers the period 2005 – 2012 despite the fact that the MAI started its official trade in 2001. This is because during 2001 – 2004 the number of companies was very small and vastly different from that after 2004. That is, there were only 4, 4, 6 and 9 listed companies in MAI in 2001, 2002, 2003 and 2004, respectively. As a result, this period is excluded in this study. In addition, this study has to employ an unbalanced panel data for the analysis. That is, the number of listed companies in the analysis increased from 19 companies in 2005 to 51 companies from 2010 onward. This is because the number of listed companies in MAI constantly increased over the study period.

Furthermore, according to the literature review, there have been several studies suggesting that dividend policy also affects earnings management of listed companies (Moradzadehfard and Babaie, 2012; Abaoub *et al.*, 2013; Im *et al.*, 2015). These findings imply that dividend policy and earnings management may have a causal relationship between each other. In other words, there may be a bi-lateral causality between both factors. Consequently, the further study may focus on the causal linkage between dividend policy and earnings management of listed companies in MAI to shed more light on the relationship between both factors in this stock market, providing investors more useful information for their smart investment.

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