Research Article

The Relationship Between Earnings Management and Performance of Listed Companies on the Market for Alternative Investment (MAI) in Thailand before Covid-19 Epidemic

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ABSTRACT

This study aims to investigate the relationship between earnings management and performance of listed companies in the Market for Alternative Investment (MAI) in Thailand during 2015 to 2019. The population and sample used in this study were all listed companies in the MAI, and descriptive analysis, correlation matrix, and unbalanced panel data analysis were used to analyze in this study. This study found that there was a negatively significant relationship between earnings management and performance of listed companies in the MAI. Moreover, there was a positively significant relationship between firm value, liquidity, and performance, while firm risk and firm age had a negative correlation with performance. The studys findings demonstrated that agency theory can explain the relationship between earnings management and performance of listed companies from the alternative capital investment in emerging economic countries as well as other developed countries.

Keywords: Earnings Management, Performance, The Market for Alternative Investment (MAI), Thailand

บทความวิจัย

ความสัมพันธ์ระหว่างการจัดการกำไรและผลการดำเนินงานของบริษัทจดทะเบียนในตลาดหลักทรัพย์หลักทรัพย์เอ็ม เอ ไอ (MAI) ก่อนการแพร่ระบาดของโควิด-19

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บทคัดย่อ

การศึกษาครั้งนี้มีวัตถุประสงค์ เพื่อวิเคราะห์ความสัมพันธ์ระหว่างการจัดการกำไรและผลการดำเนินงานของบริษัทจดทะเบียนในตลาดหลักทรัพย์เอ็ม เอ ไอ (MAI) ในประเทศไทย ช่วงระหว่างปี พ.ศ. 2558–2562 ประชากรและกลุ่มตัวอย่างที่ใช้ในการศึกษาคือ บริษัทจดทะเบียนทั้งหมดในตลาดหลักทรัพย์เอ็ม เอ ไอ และวิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนา สัมประสิทธิ์สหสัมพันธ์ และการวิเคราะห์ Unbalanced Panel Data ผลการศึกษาพบว่าการจัดการกำไรกับผลการดำเนินงานของบริษัทในตลาดหลักทรัพย์เอ็ม เอ ไอ มีความสัมพันธ์กันในเชิงลบอย่างมีนัยสำคัญ นอกเหนือจากนั้นยังพบความสัมพันธ์เชิงบวกอย่างมีนัยสำคัญระหว่างมูลค่ากิจการและสภาพคล่อง กับผลการดำเนินงานของบริษัท ในขณะที่ความเสี่ยงและอายุกิจการมีความสัมพันธ์เชิงลบกับผลการดำเนินงาน การศึกษาแสดงให้เห็นว่า ทฤษฎีตัวแทนสามารถอธิบายถึงความสัมพันธ์ระหว่างการจัดการกำไรและผลการดำเนินงานของบริษัทจดทะเบียนในตลาดหลักทรัพย์ทรัพย์เอ็ม เอ ไอ ในประเทศกำลังพัฒนาเช่นเดียวกับประเทศที่พัฒนาแล้ว

คำสำคัญ : การจัดการกำไร ผลการดำเนินงาน ตลาดหลักทรัพย์เอ็ม เอ ไอ (MAI) ประเทศไทย

1. Introduction

Corporate financial information is one of the resources that can decrease the information asymmetry between a corporation and its stakeholders, and one of the most important financial information is earnings information which can reflect the operational potential and financial position of the company (Khuong, Ha, & Thu, 2019). Although the corporate financial information was prepared and mandated under the International Accounting Standard (IAS) and International Financial Reporting Standard (IFRS), the information still has several limitations. An example is the case of Enron, one of the companies that complied with the accounting and financial reporting standards. Enron declared bankruptcy in 2002, two most important financial adjustments were used: the consolidation of special purpose entities (SPEs) and the issuance of shares for notes receivable (Catanach Jr & Rhoades-Catanach, 2003). Enron would transfer its own shares to SPE in exchange for notes or cash, and also transfer the payment rights from income-producing financial assets such as receivables, loans, or lease payments to hedge against the risk of price fluctuations, which is off-balance sheet financing (Schwarcz, 2001). Results of managed financial information, removed the liabilities from the financial statement, and recognized the transaction of expenses as assets, eventually causing Enron to declare bankruptcy (Brickey, 2003; Yoon, Miller, & Jiraporn, 2006). Thus, scholars and researchers are interested in earnings information and earnings management. Earnings management is an action of top management to make a change in accounting policies or operational actions and activities in order to achieve earnings targets and satisfy their stakeholders expectations (Kumari & Pattanayak, 2017; Scott, 2015). In a business perspective, earnings information is one of the corporate performance indicators, therefore, earnings management is directly connected with corporate performance (Al-Fayoumi, Abuzayed, & Alexander, 2010; Tang & Chang, 2015). However, shareholders (owners) and other stakeholders cannot detect top managements behavior regarding earnings management because they may misunderstand on the actual firm performance and presume that earnings information in financial statements is resulted in good performance or news (Caylor, Christensen, Johnson, & Lopez, 2015).

Even though there are several tools measuring earnings management, the most common approach is the accrual-based earnings management method (Healy & Wahlen, 1999; Schipper, 1989). This is because top management can take an opportunity by changing accounting policies, bad debt expenditure, and positioning asset write-offs to increase earnings number in the period. Researchers have developed the method that can detect earnings management using either Jones or Modified Jones models which investigating on total accruals, discretionary and non-discretionary accruals (Dechow, Sloan, & Sweeney, 1995; Jones, 1991). Many prior studies investigated the factors affecting earnings management, for instance, the corporate characteristics such as top management, managers compensation, external auditors, board composition, investor protection that had influenced on earnings management (Abbadi, Hijazi, & Al-Rahahleh, 2016; Aupipat, 2016; Bassiouny, 2016; Harris, Karl, & Lawrence, 2019; Hsieh, Chen, Tseng, & Lin, 2018; Hsu & Wen, 2015; Kapoor & Goel, 2017; Limsuthiwanpum & Chaimankong, 2015; Na & Hong, 2017; Ngamchom, 2015; Ngo & Susnjara, 2017; Rani, Susetyo, & Fuadah, 2018; Setyawan &

Anggraita, 2017; Sooksanit, 2016; Suprianto & Setiawan, 2018; Waweru & Prot, 2018; Xiong, 2016). On other studies, earnings management also had affected on the other factors such as business performance, firm value, market reaction, and taxes payment (Al-Fayoumi et al., 2010; Tang & Chang, 2015).

The relationship between earnings management and corporate performance, results of the previous related literature were still inconclusive and unclear on the direction (Ardekani, Younesi, & Hashemijoo, 2012; Dakhlallh, Rashid, Abdullah, Qawqzeh, & Dakhlallh, 2020; Dechow et al., 1995; Kasznik, 1999; Lee, Li, & Yue, 2006; Tang & Chang, 2015). It is because scholars and researchers have found both positive and negative relationship between them. For example, Burgstahler and Dichev (1997), Kasznik (1999), and Lee et al. (2006) found a positive relationship between earnings management and firm performance because top management needs to demonstrate their potential and satisfy shareholders expectations, thus, top management will increase earnings number and present high firms performance. On the other hand, Ardekani et al. (2012), Yorke, Amidu, and Agyemin-Boateng (2016), Tang and Chang (2015) found the negative effect of earnings management on firm performance. The main reason behind a negative relationship is that top management has a different target, where they are pressured by shareholders to reduce or avoid tax payments, therefore, they may use earnings management complementary with tax avoidance mechanism to meet their target. In addition, the majority studies were investigated based on companies in the main capital market (Ardekani et al., 2012; Dakhlallh et al., 2020; Dechow et al., 1995; Kasznik, 1999; Lee et al., 2006; Tang & Chang, 2015), while small numbers of literatures had focused on the alternative capital market.

In Thailand, some listed companies (Picnic Corporation Public Company) had hidden their over income changing accounting methods on payment term. It was caused that the financial information reporting distorted and misled the financial statements users. For example, the results of Thai listed companies found that earnings management has a negative impact on financial reporting reliability, stakeholder acceptance, and corporate transparency (Intakhan & Ussahawanitchakit, 2009). Moreover, the prior studies had focused on only the companies in the main capital market namely the Stock Exchange of Thailand (SET) rather than the alternative market namely the Market for Alternative Investment (MAI). Therefore, the impact of earnings management on performance of the MAI may not similar to the SET because of different business structure and corporate governance.

Based on the gaps in the literature above, this study aims to investigate the level of earnings management and performance of listed companies in the alternative capital market namely the Market for Alternative Investment (MAI) in Thailand during 2015 to 2019, and to examine the relationship between earnings management and performance. There are two main research questions in this study which are (1) what is the level of earnings management and performance of listed companies in the MAI during 2015 to 2019, and (2) is there any possible relationship between earnings management and performance of listed companies in the MAI.

The contribution expected of this study is to shed light on the level of earnings management and performance of listed companies from the alternative capital investment in emerging economic countries as well as the relationship between earnings management and performance. This study also endeavors to validate the relevance and applicability of earnings management to corporate performance. Finally, the studys findings will demonstrate whether agency theory can explain the relationship between earnings management and performance of listed companies from the alternative capital investment in emerging economic countries as well as developed countries.

The remainder of this study is divided into six sections. The next section presents agency theory as a theoretical perspective to explain the reason for the relationship between earnings management and corporate performance. The following section offers literature review and hypothesis development. Accrual-based earnings management and corporate performance in Thailand are presented in this section. The research methodology is outlined in the next section which consists of three main topics as population and sample, data collection and variable measurement, and data analysis. The fifth section indicates the studys findings and discussions following objectives. This study summarizes with conclusion and suggestions for future study including theoretical contributions, practical implications, and limitations.

2. Theoretical Perspective

Although there were several theories explaining the relationship between earnings management and firm performance such as agency theory (Dakhlallh et al., 2020; Darmawan, Sutrisno, & Mardiati, 2019; Khuong et al., 2019; Susanto, 2017), signaling theory (Dakhlallh et al., 2020; Darmawan et al., 2019) stakeholder-agency theory (Shafai, Amran, & Ganesan, 2018). However, the main theory used to explain the findings in this study is agency theory.

Agency theory is a theory that explains the relationship between principal and agent Jensen and Meckling (1976). The role of principal (owners/shareholders) is to provide the resources and management rights to the agent (manager) to run the business, while agent must perform to achieve a maximum return to the principal in form of dividends and they will get the compensation for their work. According to the theory, describes that human beings in the organization are motivated to work for their own benefit. Thus, managers will attempt to increase business value when considering that they will benefit themselves as well. Based on the agreement on executive compensation, if the owners or shareholders determine the compensation related to the business performance, managers might be opportunistic to adopt the accounting policy to increase firm performance in order to get the maximum benefit for themselves, such as bonuses, higher of compensation or other benefits (Burgstahler & Dichev, 1997; Healy & Wahlen, 1999).

Earnings management is closely related to agency theory due to the existence of information asymmetry (Xie, Davidson III, & DaDalt, 2003). The information asymmetry happens when some parties in the company have an information advantage over others. It can be divided the information into two forms as adverse selection and moral hazard. To adverse selection occurs when managers or other insiders have better information than the outsider stakeholders, there is an opportunistic for managers that they can manage the information before disclosure or delay to release information to receive any benefits from investors. Moral hazard is another form of information asymmetry which is about the corporate actions under the contractual that are unobservable. In the context, moral hazard occurs in the business which separates the role of owners and managers, whether owners can observe the manager performance by considering the income or earnings, while managers may be managed and reported the unreal earnings to reflect their efficiency (Scott, 2015).

The main reason why agency theory can be used to explain the objective of this study is that the goals of managers and shareholders are different. It causes conflicts of interest between managers and shareholders. For example, managers manage earnings information to derive their own benefits, but on the other hand, shareholders expect high firm performance for their own benefits. This may be because shareholders do not rely on the corporate financial information made by managers and their team because it might be manipulated. However, earnings management can benefit to shareholders as business performance, firm value, market reaction, tax payment, and tax avoidance.

3. Literature Review and Hypothesis Development

Earnings is an important instrument for several stakeholders to evaluate firm performance. For the investors, earnings number that shown in the financial statements is meaningful to the market value, most investors desire high number of earnings which is the pressure to managers to achieve the target that become an incentive for manager to manage earnings in order to show their potential, especially, when the managements remuneration is related to the firms performance that is an incentive for managers to manipulate earnings or to mislead stakeholders and get their higher benefits either inform of short-term or long-term (Burgstahler & Dichev, 1997; Cohen et al., 2008; Healy & Wahlen, 1999). In addition, in the study of Thai listed companies, Phetruen (2018) reviewed and summarized the motivations for earnings management, which were classified into three groups including firm-level factors (executive benefits, debt conditions, and cost of government), institutional factors (financing system, laws and enforcement of accounting and tax principles), and cultural factor (acceptance of unethical). In addition, the results concluded that firm-level factors directly contribute to earnings management.

Since 1989, researchers have been studying earnings management by defining earnings management as a purposeful intervention in the external financial reporting process to obtain some private gains (Schipper, 1989). Thereafter, it has been continuously studied and expanded the definitions

of earnings management approach such as the judgment in financial reporting and structuring transactions, using specific accounting methods, recognizing one-time non-recurring items, deferring or accelerating expense or revenue transactions, or using other methods designed to influence short-term earnings (Akers, Giacomino, & Bellovary, 2007; Healy & Wahlen, 1999).

In the perspective of earnings management, Wasiuzzaman, Sahafzadeh, and Rezaie Nejad (2015) mentioned that earnings management and earnings manipulation are different, earnings management occurs under the GAAP whereas earnings manipulation does not. Habib, Uddin Bhuiyan, and Islam (2013) stated that earnings management is the structuring of financial report or decision-making about the production/investment that impact to report earnings in accordance with manager requirements, which can be classified into three forms of earnings management that are the accruals-based management, the adoption of mandatory accounting standard and the voluntary accounting changes. On the other hand, Waymire and Basu (2011) presented three techniques which are accounting method choice, revision of estimates, and acceleration of deferral of revenues and expenses. In addition, Vichitsarawong, Eng, and Meek (2010) mentioned that earnings management is intentional to adjust the performance and present the business image in the desired direction. Earnings management can be classified into 5 categories which are an increasing the current year performance, the accounting change by manager discretionary, the timing of the operation, decreasing performance for the current year, and big bath.

From the literature above, earnings management means the actions of managers to achieve the earnings target and report financial statement to misconceptions some stakeholders by using the gaps in accounting policies, the timing of IFRS adoption, or/and managing the operational activities. Therefore, the number of earnings in financial statement might not consistent with earnings quality, financial statement users must have basic knowledge of financial information analysis before making a decision.

3.1 Earnings Management Detection Approaches

Earnings management was classified into accruals and real activities earnings management, from 1988 researchers provided evidence about earnings management through Accruals – Based (AEM) by the discretionary accruals, such as bad debt expense, inventory valuation, depreciation, and changing in the accounting policies (DeAngelo, 1988; Dechow, Sloan, & Sweeney, 1995; Healy, 1985; Jones, 1991). Until in 2002 after the passage of the Sarbanes-Oxley Act (SOX), the frequent changes in accounting policies were limited, therefore, managers tend to take advantage of the timing of transactions during the year to meet their earnings targets which become the study of real activities earnings management (REM) (Cohen, Dey, & Lys, 2008; Graham, Harvey, & Rajgopal, 2005; Roychowdhury, 2006). According to the numbers of study on earnings management in Thailand were still low, especially on the MAI market. In this study, we started by looking at the earnings management of the MAI listed companies on an

Accruals – Based, which is the prior research indicated that accruals earnings management in MAI is much higher than that in SET (Chansarn & Chansarn, 2016; Kiatapiwat, 2010)

Accruals–Based Earnings Management

In the accounting framework, there are two main specific elements which are the accrual basis and the going concern. Accrual basis is the principle to record accounting transactions, although the transactions have not been paid. Therefore, some transactions may not affect cash flow, which is an opportunity for the managers to manage earnings through accruals.

Many articles provided evidence about earnings management through accruals–based earnings management. For example, Wasiuzzaman et al. (2015) mentioned that there is an opportunity for managers to use accruals basic by selecting their accounting policies such as depreciation, inventory valuation, and allowance for doubtful accounts. They can avoid the investigation by the auditor and also do not require disclosure. However, to choose the accounting policies, managers cannot change in every period and must consider the firm accounting policies in prioritizing. Moreover, earnings comply with the generally accepted accounting principles. These factors might be a limitation for managers to manage earnings through an accrual basis. Therefore, managers will use discretionary accruals when firms operate in the high uncertain environment (Ghosh & Olsen, 2009). Peasnell, Pope, and Young (2000) presented two components of accruals-based earnings management which are the revenue and the expense manipulations. Managers can adjust the recognition, increase the assumed number of transactions, and include accelerating and/or delaying transactions.

In part of detecting accruals–based earnings management, several researchers generated models to measure discretionary accruals as total accruals and attempted to develop complex models to distinguish the accruals into discretionary and non-discretionary accruals (DeAngelo, 1988; Dechow et al., 1995; Healy, 1985; Jones, 1991).

This study follows Dechow et al. (1995) by performing the Modified Jones Model, which has been widely used and has relatively strong results compared to other methods that measured accrual quality by using total accruals and total assets (DeAngelo, 1986; Healy, 1985). Prior studies have also supported the Modified Jones Model as the most effective model for measuring earnings management through accruals (Bartov, Gul, & Tsui, 2000; Peasnell, Pope, & Young, 2000). As the equation below:

$$\frac{TA_{i,t}}{A_{i,t-1}} = \alpha_1 \frac{1}{A_{i,t-1}} + \alpha_2 \frac{\Delta S_{i,t}}{A_{i,t-1}} + \alpha_3 \frac{PPE_{i,t}}{A_{i,t-1}} + \varepsilon_{it}$$

Where TA_t = the total actuals measured as EBXI – CFO where EBXI is earnings before extraordinary and CFO is the cash flows of operation in the statement of cash flow firm i in year t; A_{t-1} = the total assets at the end of firm i year t–1; ΔS_t = the change of sale firm i in year t = $S_t - S_{t-1}$; $PPE_{i,t}$ = the gross of property, plant and equipment firm i in year t

From the equation above, that used to estimate the non-discretionary accruals (NDA) or the normal accruals (NA) below:

$$NDA_{i,t} = \alpha_1 \frac{1}{A_{i,t-1}} + \alpha_2 \frac{\Delta S_{i,t} - \Delta AR_{i,t}}{A_{i,t-1}} + \alpha_3 \frac{PPE_{i,t}}{A_{i,t-1}} + \varepsilon_{it}$$

Where $\Delta AR_t = AR_T - AR_{T-1}$ that is the change in accounts receivable in year. The proxy for estimates discretionary accrual (DA) as:

$$DA_{i,t} = \frac{TA_{i,t}}{A_{i,t-1}} - NA_{it}$$

To study the association between Top Management Team (TMT) characteristics and accruals earnings management, this study uses the absolute discretionary accruals (ABS_DA) to measure accruals earnings management.

3.2 Earnings Management in Thailand

The capital market in Thailand can be divided into two parts, first, The Stock Exchange of Thailand (SET) is the primary stock market, which are large companies with paid up capital after IPO of 300 million baht or more and net profits in the last 2–3 years before submitting the application totaling over 50 million baht, in the most recent year before submitting the application must have net profit over 30 million baht. Another capital market in Thailand is the Market for Alternative Investment (MAI), which focuses on medium and small businesses with paid up capital after IPO of 50 million baht or more and net profit in the most recent year before submitting the application over 10 million baht.

The studies of listed companies in Thailand, most of them focus only on the earnings management of listed companies in SET. From the survey of financial statements in Thailand from 2003 to 2013, the Stock Exchange of Thailand (SET) had been found that many companies had refurbished accounts and managed the financial statements. For example, Singha Paratech Listed Company had adjusted the revenue from sales. Picnic Corporation had created a fake income account. Siemens Electronics company used documents that do not match the fact of recording. All evidence in Thailand was consistent with a survey of the Association of Certified Fraudsters Examiner (ACFE) in 2012 finding that the accounting manipulations trended to be higher and higher. In the following period, there is evidence that companies in Thailand continue to manipulate earnings and commit accounting fraud. Promchirachote, Arunruangsirilert, and Sangiumvibool (2019) studied trends and directions of account decoration methods, including the number and characteristics of accusations during 2009–2019, the result indicated that Industrial, Property and Construction, and Resources Industries had the most accounting fraud, and the most used method is revenue distortion.

However, the numbers of study on earnings management in Thailand were still low and most researchers investigated earnings management by using the large companies on the SET rather than small and medium listed firms in the MAI. The results from the prior literature demonstrated that earnings management had a negative impact on the reliability, stakeholder acceptance, corporate transparency, and quality of financial report. However, the level of earnings management will decrease, if firms have a higher proportion of directors who have financial or accounting expertise (Intakhan & Ussahawanitchakit, 2009; Kiattikulwattana, 2014; Ngamchom, 2015). There was a prior study focused on the small and medium enterprise in the MAI during 2005–2012 (Chansarn and Chansarn (2016), the findings indicated MAI listed companies have higher of accruals earnings management level than SET listed companies, and also found a positively related between discretionary accruals and dividend yield. Supported, MAI listed had higher performance by using discretionary accruals, they intend to make the high price of stock and will increase dividend payments to increase the dividend yield to make the company stocks more attractive to investors.

3.3 Hypothesis Development

Earnings management has been studied since 1985 by Healy (1985) testing the effect of bonus schemes on accounting decisions. Thereafter, many researchers have become interested in investigating the other factors that are associated on earnings management such as board characteristics, executive compensation, investor protection and corporate governance (Abbadi et al., 2016; Aupipat, 2016; Bassiouny, 2016; Harris et al., 2019; Hsieh et al., 2018; Hsu & Wen, 2015; Kapoor & Goel, 2017; Limsuthiwanpum & Chaimankong, 2015; Na & Hong, 2017; Ngamchom, 2015; Ngo & Susnjara, 2017; Rani et al., 2018; Setyawan & Anggraita, 2017; Sooksanit, 2016; Suprianto & Setiawan, 2018; Waweru & Prot, 2018; Xiong, 2016). However, the impact of earnings management on firm performance was not concluded and directed (Al-Fayoumi et al., 2010).

Since 1997, Burgstahler and Dichev (1997) have recognized that earnings management is consistent with firm performance and driven by managers incentives for reporting positive performance. Supporting, the empirical research demonstrated that discretionary accruals estimated by Jones and Modified Jones are positively correlated with performance and expected future earnings growth (McNichols, 2000). Moreover, researchers found discretionary accruals is positively related to firm performance estimated as return on assets (ROA) (Dechow et al., 1995; Kasznik, 1999; Lee et al., 2006; Wenfang & Ayisi, 2020) that probably because managers need to demonstrate their potential and satisfy shareholders expectation, thus they will increase earnings number and present high firms performance.

While, the study of Malaysian firms listed, researcher provided evidence that earnings management has a negatively related with performance (Ardekani et al., 2012). In another hand, Yorke et al. (2016) investigated the effects of earnings management and corporate tax avoidance on firm value of non-financial firms listed in Ghana, researchers found a negative association between accruals earnings

management and ROA. Supporting, the evidence of Jordanian and Taiwanese companies, researchers found that discretionary accruals has a negatively related to firm performance estimated from Tobins Q (Dakhlallh et al., 2020; Tang & Chang, 2015), the reason behind the negative relationship is probably because managers have a different target, they are pressured by shareholders to reduce or avoid tax payments, therefore, they may use earnings management complementary with tax avoidance mechanism to meet their target.

The studies in Thailand have focused on the big firms in the SET, however, the small and medium listed companies may be different direction of relationship between earnings management and firm performance. Therefore, this study aims to examine the relationship between earnings management and firm performance based on the Market for Alternative Investment (MAI) in Thailand by using the hypothesis as follow:

H1. There is a negative relationship between earnings management and firm performance.

4. Methods

To investigate the level of earnings management and performance of Thai listed companies in the alternative capital market namely the Market for Alternative Investment (MAI), and to examine the possible relationship between earnings management and performance, the population and sample of this study were all listed companies in the MAI during the period from 2015 to 2019 (The Stock Exchange of Thailand, 2020). However, the study did exclude listed companies that (1) did not end their accounting year on 31st December, (2) were registered as funding companies in the MAI, and (3) were withdrawn from listing by the MAI including listed companies under rehabilitation. After applying the condition above, 152 listed companies were adopted as the samples in this study. Corporate annual reports of the samples from 2015 to 2019 were used to collect data of earnings management as well as corporate financial performance and corporate characteristics. The reason of using annual report to collect data is because the annual report is a statutory report that is widely recognized as the principle means by which companies communicate their actions and activities (Suttipun, 2018)

The corporate annual reports were used to collect three main sources which are earnings management, performance, and corporate characteristics. In terms of earnings management as independent variables, the prior research indicated that the most effective model for measuring accruals earnings management is the Modified Jones model (Bartov, Gul, & Tsui, 2000; Peasnell, Pope, & Young, 2000), therefore, Modified Jones model (Dechow et al., 1995) were used to measure earnings management in this study. Following the prior research in terms of the dependent variable, return on asset (ROA) was used to measure financial performance, similar to other studies conducted (Boachie & Mensah, 2022; Lee et al., 2006; Wenfang & Ayisi, 2020; Yorke et al., 2016). Moreover, corporate characteristics were used as control variables in this study which consist of firm value, firm size, firm risk (leverage),

firm age, liquidity, and audit type. All proxies were used and found a significantly related with ROA but inconclusive about the direction of these control variables (Hodkum & Chanruang, 2017; Boachie & Mensah, 2022; Suttipun & Sittidate, 2016; Wenfang & Ayisi, 2020). All variables measurement used in this study were indicated in Table 1.

Table 1: Variable Measurement

Variables Used	Notation	Measurement
Earning management	**EM**	**Modified Jones model (Dechow et al., 1995)**
Performance	**ROA**	**Return on asset (ROA)**
Firm value	VALUE	Average common stock price
Firm size	SIZE	Natural logarithm of total assets
Firm risk	RISK	Debt to equity ratio
Firm age	AGE	Year of firm age
Liquidity	LIQUID	Current ratio
Audit type	AUDIT	Dummy variables as 1 = Big 4 auditors, and 0 = the others

The data was analyzed using the SPSS Statistics Software Program (Version 23). The data was first analyzed using descriptive analysis to investigate the level and pattern of earnings management and performance of listed companies from the MAI. Moreover, a correlation matrix was used to test the multicollinearity problem between all variables used in this study. Finally, unbalanced panel data analysis was used to test for the possible relationship between earnings management and corporate performance of listed companies in Thailand. The equation is indicated below.

$$ROA = \beta_0 + \beta_1 EM + \varepsilon \quad \text{(Model A)}$$

$$ROA = \beta_0 + \beta_1 EM + \beta_2 VALUE + \beta_3 SIZE + \beta_4 RISK + \beta_5 AGE + \beta_6 LIQUID + \beta_7 AUDIT + \varepsilon \quad \text{(Model B)}$$

5. Findings and Discussions

For the 152 listed companies in the Market for Alternative Investment in Thailand, 627 corporate annual reports from 2015 to 2019 were used and collected in this study. To investigate the level of earnings management and performance of listed companies in the alternative capital market, Table 2 summarizes the average level of earnings management by using the Modified Jones model was 0.0882 (SD = 0.0993), while the average of samples performance by using ROA measurement was 4.2125 percent (SD = 10.3958). On the other variables, firm value was 4.3330 average baht per common share (SD = 6.7138), firm size was 1587.1067 average million baht (SD = 1790.7300), firm risk was 0.9343 average time (SD = 1.2445), firm age was 24.8915 average years (SD = 10.5026), and firm liquidity was 2.9339 average times (SD = 3.6772).

Table 2: Descriptive Analysis of Variables Used in This Study

Variables	MIN	MAX	MEDIUM	MEAN	SD
ROA	−69.3500	57.7700	4.3900	4.2125	10.3958
EM	0.0002	1.0505	0.0205	0.0882	0.0993
VALUE	0.0000	64.8600	1.4800	4.3330	6.7138
SIZE	102.1200	13232.3500	679.0000	1587.1067	1790.7300
RISK	−7.2400	16.2800	0.3500	0.9343	1.2445
AGE	2.0000	69.0000	28.0000	24.8915	10.5026
LIQIUD	−0.8000	40.2600	0.9000	2.9339	3.6772

Before conducting multiple regression analysis, the outlier observations were identified and treated by performing the winsorizing method at 5% and 95% levels. The assumption that the data are not multicollinear in the variables included in the analysis was tested. Table 3 shows the correlation matrix used to test for multicollinearity between the eight variables used in this study, consisting of one dependent variable, one independent variable, and six control variables. The correlation of a pair of variables should not exceed 0.700 (Hair, Ringle, & Sarstedt, 2011), and the variables used in this study did not have a multicollinearity problem because the highest Pearson correlation (between SIZE and RISK) was 0.401. Moreover, VIF scores of each variable used in this study were also not over 10 (Hair et al., 2011), as SIZE had the highest VIF score of 1.316, while the length of Tolerance level was indicated between 0.760 to 0.965. From the correlation coefficients between the eight variables used in this study, there were significantly positive correlations between ROA, VALUE, and LIQUID at 0.01 level, while there were negative correlations between ROA, EM, and RISK at 0.01 level. However, SIZE,

AGE, and AUDIT did not correlate with ROA at 0.05 level. Besides, by performing the Breusch–Pagan test, there is no heteroskedasticity problem in this study (P = 0.6841).

Table 3: Correlation Matrix and Multicollinearity Test

Variable	ROA	EM	VALUE	SIZE	RISK	AGE	LIQUID	AUDIT
ROA	1	–.240**	.293**	–.025	–.162**	–.049	.124**	.040
EM	–	1	–.108**	.044	.147**	–.045	.028	.015
VALUE	–	–	1	.024	–.074	.081*	–.011	.095*
SIZE	–	–	–	1	.401**	–.197**	–.105**	.161**
RISK	–	–	–	–	1	–.079*	–.270**	–.007
AGE	–	–	–	–	–	1	–.001	–.124**
LIQUID	–	–	–	–	–	–	1	.054
TOLE	–	.963	.965	.788	.760	.943	.919	.947
VIF	–	1.038	1.307	1.270	1.316	1.061	1.088	1.056

** is significant at 0.01 level, and * is significant at 0.05 level.

To examine the possible relationship between earnings management and performance of listed companies in the MAI from 2015 to 2019, unbalanced panel data analysis was used in Table 4 below. In Model A, the R squared was 0.038 and the adjusted R squared was 0.036 showing that the model explained approximately 3.6 percent. Although there was no high level of R squared in this study, F-value level of variance indicated the model fit at 0.01 level. As the result, in Model A, there was a negatively significant relationship between EM and ROA at 0.01 level. In Model B, control variables using corporate characteristics were used in the equation and shown that the R squared increased up to 0.287 and the adjusted R squared was 0.278 showing that the model explained approximately 27.8 percent. As the result, in Model B, there was still a negatively significant relationship between EM and ROA at 0.01 level as well as in Model A. In term of control variables, VALUE and LIQUID had positively correlated with ROA at 0.01 and 0.05 level, respectively, while there was a negative relationship between RISK, AGE, and ROA at 0.01 level. However, the study did not find any significant relationship between SIZE, AUDIT, and ROA at 0.05 level.

Therefore, the hypothesis of this study was not rejected, the finding of a negative relationship between earnings management and corporate performance in this study was consistent with Ardekani et al. (2012), Tang and Chang (2015), Yorke et al. (2016), and Dakhlallh et al. (2020). The reason behind a negative relationship is probably because top management from each listed company has different targets and goals, where they are pressured by shareholders and the other stakeholders to reduce or

avoid tax payments. Therefore, they may use earnings management complementary with tax avoidance mechanism to meet their shareholders demands. Moreover, agency theory can explain the negative relationship between earnings management and corporate performance because earnings management can reduce or close agency costs as well as conflict of interest between top management and shareholders.

Table 4: Unbalanced Panel Data Analysis

Variables	Model A		Model B	
	B	t (sig)	B	t (sig)
Constant	6.070	14.15 (.000**)	5.443	1.96 (.050*)
EM	−19.565	−4.96 (.000**)	−10.745	−3.05 (.002**)
VALUE	–	–	0.798	11.93 (.000**)
SIZE	–	–	−0.030	−0.08 (.940)
RISK	–	–	−1.826	−3.91 (.000**)
AGE	–	–	−0.095	−3.24 (.001**)
LIQUID	–	–	0.308	2.25 (.025*)
AUDIT	–	–	−0.444	0.87 (.385)
R Square	.038		.287	
Adj. R Square	.036		.278	
F-value (sig)	24.63 (.000**)		35.50 (.000**)	
N	627		627	

** is significant at 0.01 level, and * is significant at 0.05 level

6. Conclusion and Suggestion for Future Study

To answer the research questions whether (1) what was the level of earnings management and performance of listed companies in the MAI of Thailand during 2015 to 2019, and (2) was there any possible relationship between earnings management and corporate performance, the study found that the average level of earnings management was 0.0882, while the average of corporate performance was 4.2125 percent. There was a negatively significant relationship between earnings management and corporate performance. Moreover, firm value and liquidity had positively correlated with performance, while there was a negative relationship between firm risk, firm age, and performance. However, the study did not find any significant relationship between firm size, audit type, and performance.

This studys findings provide some contributions and implications. In terms of theoretical contributions, the results of this study shed light on the relationship between earnings management and performance. In addition, the results demonstrated that agency theory can explain the relationship between earnings management and performance of listed companies from the alternative capital investment in emerging economic countries as well as developed countries. Executives tend to manage earnings for their own benefit rather than for shareholders or owners, which is a conflict of interest problem. This needs the regulator and competent agencies to create mechanisms and controls to decrease earnings management level of Thai listed companies. In terms of practical implications, shareholders or business owners can use this evidence to consider adding corporate governance mechanisms such as internal control mechanisms, and audit committee, as well as selecting the expertise external auditor in order to mitigate earnings management level. Investors and financial statement users can use a negative relationship between earnings management and corporate performance for their decision making. Moreover, the evidence also encourages the capital market regulators to consider the basic adequacy of listed companies corporate governance and search for other criteria or mechanisms to ensure better corporate governance.

However, there are some limitations in this study. Firstly, the study picked up only accrual-based earnings management as a proxy of earnings managements variable in this study, but there are some proxies that can be used. Secondly, this study focused on only the MAI, but not on the Stock Exchange of Thailand (SET) where there are other listed companies. Finally, the study used only five years to investigate and test the relationship between earnings management and corporate performance. Therefore, the future study will use the other proxies of earnings management to test both capital markets in Thailand using ten years.

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