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THE CHARACTERISTICS OF TOP MANAGEMENT AND FIRM'S EARNINGS MANAGEMENT: THE EVIDENCE FROM THAILAND

Keywords: Top Management Team (TMT), Earnings Management (EM), Accruals Earnings Management (AEM), Real Activities Earnings Management (REM).

J E L Classification: G34, M12, M41.

Abstract: This study investigates the association between Top Management Team (TMT) characteristics and Earnings Management (EM) by examining 1,855 observations of Thai-firm listed in period of 2013–2017. This study employs Modified Jones model (1991) and Roychowdhury (2006) to measure accruals and real activities earnings management, respectively. The findings in this paper reveal TMT characteristics influence on both in AEM and REM and firms with older, long tenure and possessing CPA certification of TMT lead to decrease in AEM level. In contrast, TMT tenure has positive influence to REM level that implies long tenure of TMT tends to manage earnings thro-

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ugh operation activities instead of discretionary accruals. However, the percentage of female members and master's degree education of TMT have no significant association with earnings management.

■■■ INTRODUCTION

Prior studies provide two categories of earnings management – Accruals management (AEM) and Real activities earnings management (REM). Most of the past focused on earning management through accruals basis by using discretionary accruals, such as bad debt expense, depreciation and by selecting the accounting methods (DeAngelo, 1988; Dechow, Sloan & Sweeney, 1995; Healy, 1985; Jones, 1991; Rangan, 1998). After the passage of the Sarbanes-Oxley Act (SOX) in 2002, managers cannot rely on accruals management because it has limitation about the frequent changes in accounting policies. Consequently, managers tend to use real activities manipulation simultaneously to get earnings target (Cohen, Dey & Lys, 2008; Cohen & Zarowin, 2010; Hasnah Kamardin, 2018). The activities focus on the abnormal level of cash flow operation, discretionary expense, and production costs, so the activities might or might not be related to accruals (Burgstahler & Dichev, 1997; Dechow, Kothari & Watts, 1998; Gunny, 2010; Roychowdhury, 2006). Earnings management is widely practiced by public companies including in Thailand. Stock Exchange of Thailand (SET) surveys financial statements in during 2003–2013 found many companies have refurbished accounts and managed financial statements. For example, Singha Paratech Company has adjusted the revenue from sales, Picnic Corporation has created a fake income account and Siemens Electronics company use documents that do not match the fact of recording. The Association of Certified Fraudsters examiner (ACFE) in 2012 explored and found the accounting manipulations tend to be higher and higher.

Executive is a key person who has the power to make business decisions. The role of executives is very important to make the company successful and generate credibility for stakeholders. Hambrick and Mason (1984) presented The Upper Echelons Theory, which explains the reflection of the manager performance and how the individual top manager characteristics affect the selection of management strategies. According to the majority research in the prior, researchers have focused on the characteristics of one position that is the Chief Executive Officer (CEO) (Barker III & Mueller, 2002; Kaplan, Klebanov & Sorensen, 2012; Lovata, Schoenecker & Costigan, 2016; Na & Hong, 2017; Santoso

& Fu, 2014; Sooksanit, 2016; Srinidhi, Gul & Tsui, 2011; Wells, 2002). Until recently, there have been studies on the characteristics of executives based on their responsibilities such as Chief Financial Officer (CFO) (Peni & Vähämaa, 2010; Sooksanit, 2016). Consequently, this paper attempts to expand the scope of executive behavior by investigating Top Management Team (TMT). Thus, this study define TMT as the first of corporation's top management who have a power to make decision in the business and playing important role about operating activities , which including Chairman, Chief executive officer (CEO), Managing director (MD), and Chief financial officer (CFO), due to their power to make decision and responsibilities in the business.

This paper aims to investigate the association between the characteristics of TMT in the demographic part with earnings management by focusing five characteristics including age, gender, education, accounting proficiency, and tenure. The samples are 1,855 observations from the Stock Exchange of Thailand (SET) during 2013–2017. The result presents by investigating the effect of TMT characteristics on earnings management both in term of accruals and real activities earnings management. This paper found AGE, PCPA and TENURE are negatively related to AEM level that can imply older TMT (average age of TMT over 58); TMT member with CPA certificate and TMT with average tenure over seven years would present more quality of earnings by decrease AEM. While long tenure of TMT has negatively affected to AEM, there is a positive relation to REM. The result indicates that TMT with long-term tenure tends to use REM instead of AEM. In addition, the percentage of TMT members with masters' degree have no significant association with both AEM and REM. This study attempts to shed more light on the effect of TMT characteristics on earnings management behavior both on AEM and REM approach. The finding in this paper will be able to identify the characteristics of TMT related to earnings management based on Thai-firm listed, and consistent with the upper echelons theory, which reveals the influence of executive characteristics on business operation. Considering the relevance of results, the regulator can use in issuing regulations to increase the reliability of executives and information disclosed in the financial statements.

The paper organization is as of followings: the section 2 presents the research methodology and the course of the research process; section 3 displays the analysis and empirical result and section 4 is the conclusion of the paper.

THE RESEARCH METHODOLOGY AND THE COURSE OF THE RESEARCH PROCESS

Literature review and hypothesis development

TMT characteristics and earnings management

In earnings management area, a prior study has classified AEM and REM and investigate the relationship with other factors such as earnings quality, audit quality, business strategy, the International Financial Reporting Standard (IFRS), and the investor protection. Apart from those factors, Top Management Team (TMT) is the key people to perform the business and, according to their power and responsibilities to make the decision in the business, lead to the capability to manage earnings. Since Hambrick and Mason (1984) reveal the Upper Echelons Theory (UET) that explains the characteristics of executives such as age, education, functional track, experience, and financial position and their argument about characters regarding the operation and performance of firms.

According to the Upper echelons theory, Santoso and Fu (2014) focused the CEOs characteristics as the tenure, age, gender, and founding family CEO, and found the positive association between tenure and discretionary accruals that can imply CEO who has longer tenure engagement more to manage discretionary accruals than short-term tenure. In part of age, gender and founding family, they found the older, female and founding family CEO reported low discretionary accruals. Lovata et al. (2016) studied the association between CEO characteristics and real activity management of manufacturing firms in 2005–2010. The study focused several factors of CEO characteristics, and revealed different characteristics of managers who have engaged in different activities, older CEOs are more engage in the production schedule and found the accelerate sale with CEOs with less tenure and higher ownership. Krishnan and Parsons (2008) found firms with high female proportion in board director would have lower earnings management and report more earnings quality. While there are studies about the quality of earnings, Ye, Zhang and Rezaee (2010) examined earnings quality with a large sample of Chinese firms listed, by measuring qualities : earnings persistence, the accuracy of current earnings as indicators of future cash flows, the association between earnings and stock returns and the absolute magnitude of discretionary accruals, result found earnings quality is not affected by boards' gender. Consistent with Hili and Affess (2012)

studied the companies in French during 2007–2010, the result found no differences in earnings quality with executive's gender.

Peni and Vähämaa (2010) examined the association between the executive's gender and earnings management through discretionary accruals. The result found no relationship with CEO's gender and earnings management, while female CFOs have more conservation and report more earnings quality. Srinidhi et al. (2011) mentioned firms can reduce earnings management and present high quality of earnings by female participation. Gavious, Segev and Yosef (2012) studied and found a negative association between female managers and earnings management that imply firms with female CEOs engage in earnings management lower than those males. Arun, Almahrog and Aribi (2015) investigated the female directors and earnings in UK found independent female directors have more caution to using accounting policies and prefer to manage earnings by income decreasing. In the comparison of earnings management in firms with low and high debt, the result found firms with low debt have a positive effect on female directors on earnings management. In addition, Sun, Liu and Lan (2011) found evidence of female representation in the audit committee has no impact on earnings management. Na and Hong (2017) studied CEO Gender and Earnings Management, by focusing on the CEO and earnings management over 14 years, the result shows male CEOs engage more aggressively in earnings management both in discretionary accruals and real activities earnings management to report or achieve small earnings.

In other characters that are Job and Non-Job related, Xiong (2016) studied the association between four factors of chairman characteristics and earnings management based on the Chinese companies listed during 2005–2014. The study measured characteristics as age, gender, tenure and education, and earnings management as accruals-based and real earnings management by following McNichols and Roychowdhury. Result reveals both approaches of earnings management decreases in firms with older, female, long-tenured and high education executives. Li, Tseng and Chen (2016) investigated the association about TMTs characteristics and corporate real earnings management by focusing three factors of characteristics that are education level, core functional expertise and accounting proficiency. The data were collected from Taiwanese listed firms during 2006–2010. The empirical results reveal a negative association between two factors of characteristics (education and core function expertise) and real earnings management, in contrast, there is a positive association between accounting proficiency and manage earnings through real

activities. That result can imply higher education and greater core functional area (measured by master's degree and core functional area that is the area of management such as, operation, production, marketing, and finance) reduce the executive's incentive to manage earnings. In accounting proficiency factors (measured by CPA certificates), executives who have accounting proficiency tend to engage more in manage earnings by operating activities.

Sooksanit (2016) studied the association between CEO, CFO characteristics and earnings management by using abnormal discretionary expenses as a proxy. The study collected data from firms listed from The Stock Exchange of Thailand during 2011–2015. The result found CEO's age has a positive association with abnormal discretionary expenses at the same time gender and tenure have no relationship. In another part, CFO's higher age and male gender tend to have higher abnormal discretionary expenses, but CFO's with long-term tenure have less level of abnormal discretionary expenses. Apart from age and tenure, there were also prior studies on the impact of board effectiveness on earnings management base on four industries in Thailand that are agro and food, resources, technology, and consumer products by using the proportion of expertise in finance and accounting, a number of meetings of the board, the proportion of the audit committee, and shareholder structure to measure Board Effectiveness. The result found a negative association between the proportion of directors who have financial/accounting expertise and earnings management, in contrast, other factors are positive that imply firms that have a high number of meeting, a high proportion of audit committee and the concentration of major shareholder would increase earnings by using discretionary accruals (Ngamchom, 2015). In term of Real activities earnings management approach, researchers found during 2004–2009 Thai firms listed used real earnings management including sale acceleration, overproduction and discretionary expense to get better performance (Wardani & Kusuma, 2012).

Hypothesis development

Over the past, researchers have studied the characteristics of the top management team (TMT) and have the argument about the association between the organizational performance and TMT characteristics. Hambrick and Mason (1984) reveal the upper echelons theory that is the theory about the reflection of the executive performance and the effect of the manager characteristics to make decision management strategy. Based on the notion, they show two cat-

egories of characteristics: the psychological and demographic characteristics. They recommended using demographics to evaluate the cognitive base and values because psychological characteristic is difficult to observe. Naranjo-Gil, Hartmann and Maas (2008) study is useful to distinguish the TMT characteristics into two groups: a job (background, education, and tenure) and non – job (age and gender) related characteristics.

Santoso and Fu (2014) studied Indonesian firms in 2012 by investigating the association between CEOs characteristics and earnings management. The result found a negative association between age and earnings management that implied older executive report more earnings quality by lower discretionary accruals. Consistently, Xiong (2016) found the negative association between age of Chinese chairman and earnings management: older chairman are more aware of their management than younger and would have a low level of earnings management in both approaches; accruals and real earnings management. Recently, Qi, Lin, Tian and Lewis (2018) examined the relationship between age of management team and EM, the result found executive who nearly retirement would less engage in EM, which reflects older executive have more awareness of business ethics.

Thus, whether TMT are younger or older, they are still have an incentive to manage earnings to get their own benefit. However, they might be different in term of accepting risk, Tihanyi, Ellstrand, Daily and Dalton (2000) mentioned that younger managers might be able to accept more risk than older, older managers who are closely to retired would pay more attention to their financial security and reputations, so for old managers is difficult to accept more risk. According to the limitation of changing the accounting policies and risk of the investigation of auditors that might be the reason for TMT with older of age to use REM instead of AEM, which lead to the hypothesis development in follow:

H1A TMT age have a negative association with AEM.

H1B TMT age have a positive association with REM.

Prior research reveals firms that have more female directors would report high earnings quality (Krishnan & Parsons, 2008). Recently, Na and Hong (2017) reveal the evidence of the association between CEO gender and earnings management that reflects male CEOs engage more aggressive in earnings management both in discretionary accruals and real activities earnings management to report or achieve small earnings but female CEOs are likely not to engage.

Consistent with the result of previous research that found negative association between proportion of women CEO or CFO and accruals earnings management, the result explains female executives have more conservative and good participation lead to the reduction of earnings management and presenting high quality of earnings (Gavious et al., 2012; Peni & Vähämaa, 2010; Srinidhi et al., 2011). On the other hand, researchers have found no relationship between executive's gender and earnings management (Santoso & Fu, 2014), but found the positive effect of female directors on earnings management in the UK low debt firms (Arun et al., 2015).

***H2** The high percentage of female participation in TMT lead to a decreasing level of earnings management.*

The capability of executives is another factor that has found the correlation with earnings management; prior study measure the capability of executives as the education and accounting proficiency. Xiong (2016) studied chairman education and earnings management, the result found a negative association between education and earnings management that implies high education of chairman can reduce accruals and real earnings management behavior. While, Li, Tseng and Chen (2016) focused on the effect of top management team expertise on real earnings management by collecting data of 4,690 firms since 2006 to 2010 in Taiwan and used three indicators to measure the TMT expertise of Herrmann and Datta (2005): the education level, core functional expertise and accounting proficiency. The result shows the negative association between REM and TMT master's degrees and core functional expertise. In contrast, the accounting proficiency is positive with REM. Ngamchom (2015) revealed the negative association between the proportion of directors who have financial or accounting expertise and accruals earnings management, by studying four sectors of firm listed in Thailand that are agro and food, resources, technology, and consumer products from 2009–2013. Hypothesis 4 and 5 are developed to investigate TMT capability by measuring as TMT education and CPA certification as follow:

***H3** The high percentage of TMT with master degree education lead to decreasing earnings management level.*

***H4** TMT with possessing a CPA certificate have a negative influence on earnings management.*

Prior research found CEOs who have long-term in the position might have more opportunity to apply their experience in management accounting numbers. In earnings management area, there is the positive association between tenure and discretionary accruals that implies CEOs' tenure increase discretionary accruals (Santoso & Fu, 2014). While Wells' (2002) study the CEO changing and earnings management opportunistic did not found CEO use opportunities in both short-term and long-term tenure. Ping (2007) studied the TMTs heterogeneity and firm performance by collecting data of 365 firms from Shanghai and Shenzhen, revealed the TMTs tenure diversity have an inverse relationship with firm performance.

We suspect that TMT with long tenure would have more experience and better understanding about the operation activities and the weakness of company regulations that they can take an opportunistic to manage earnings through the REM approach rather than AEM, which leads to the hypothesis development as follow:

H5A Long tenure of TMT has a negative influence with AEM level.

H5B Long tenure of TMT has a positive influence with REM level.

RESEARCH METHODOLOGY

Data sample

The study collected data from the financial statement, annual report and annual registration statement (Form 56-1) in period 2013–2017 from SETSMART database, Stock exchange of Thailand (SET). The total sample data of SET is 2,830 observations, the study has selected the sample with the following processes : first, this study restricted to seven industries firm-listed on SET excluding finance and insurance industries for 289 firms-year; second, eliminated the Property Fund and Real Estate Investment Trust of Property & Construction industry for 175 firms-year; third, excluded firms that have entered-exit of SET during the sample years for 289 firms-year; and fourth, exclude firms that's not available and missing financial information of TMT data in their financial report for 222 firms-year. Therefore, the final sample is 1,855 firm-years.

Table 1 presents the distribution of the final sample in each industry in period 2013–2017. The top three industries are Industry, Services and Property& Construction represent a percentage of 22.70, 20.81 and 18.98 respectively.

Table 1. Final sample by each industry and year

No.	industry	Year					Total	%
		2013	2014	2015	2016	2017		
1	Resources	33	32	31	30	31	157	8.46
2	Property & Construction	70	70	70	71	71	352	18.98
3	Services	76	79	78	77	76	386	20.81
4	Industrials	84	84	86	86	81	421	22.70
5	Technology	32	32	32	32	32	160	8.63
6	Agro & Food Industry	40	40	39	39	39	197	10.62
7	Consumer Products	37	37	36	36	36	182	9.81
Total		372	374	372	371	366	1,855	100

Notes: Industrial structure of the Stock Exchange of Thailand are in Appendix A.

Source: author's computation, 2018.

Variable definition and measurement Dependent variables – Earnings management Accruals earnings management (AEM)

In prior research presented the models to capture, Jones (1991) presented model to examine discretionary accruals that are the model to identify discretionary and non-discretionary accruals by comparing the actual accruals and the normal accruals level in each year. Dechow et al. (1995) studied the detecting earnings management and presented Modified Jones (MJ) most powerful test earning management compared to Healy (1985), and Standard Jones model (SJ).

This study follows modified Jones model to compute the total accruals (TA) in each firms-year by the estimation as:

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

Where $TA_{i,t}$ is 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} is the total assets at the end of firm i year $t-1$, ΔS_t is the change of sale firm i in year $t = S_t - S_{t-1}$, PPE is the gross of property, plant and equipment firm i in year t .

The equation above is used to estimate the non-discretionary accruals (NDA) or the normal accruals (NA) below:

$$NDA_{i,t} = \alpha_1 \frac{1}{A_{i,t-1}} + \alpha_2 \frac{\Delta S_{i,t} - \Delta AR_{i,t}}{A_{i,t-1}} + \alpha_3 \frac{PPE_{i,t}}{A_{i,t-1}} + \varepsilon_{it} \quad (2)$$

Where $NDA_{i,t}$ is the normal accruals, A_{t-1} is the total assets at the end of firm i year t-1, is the change of sale firm i in year t = $S_t - S_{t-1}$, $\Delta AR_T = AR_T - AR_{T-1}$ that is the change in accounts receivable in year t, PPE is the gross of property, plant and equipment firm i in year t.

The proxy for estimates discretionary accruals (DA) as:

$$DA_{i,t} = \frac{TA_{i,t}}{A_{i,t-1}} - NDA_{i,t} \quad (3)$$

Where $DA_{i,t}$ is the discretionary accruals $TA_{i,t}$ is 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} is the total assets at the end of firm i year t-1, $NDA_{i,t}$ is the normal accruals.

REAL ACTIVITIES EARNINGS MANAGEMENT (REM)

The prior literature on the measurement to capture real activities manipulation revealed model to capture by computing the normal and abnormal in three factors, including abnormal cash flow of operation, abnormal discretionary expense, and abnormal production cost or overproduction (Roychowdhury, 2006). This study follows the prior research to estimate real activities manipulation by three estimations model: the estimation abnormal cash flow of operations (CFO), the estimation abnormal reduction of discretionary expenses, and the estimation overproduction to meet the low cost of goods sold and make earnings upward. The estimations are as follow:

$$CFO_{i,t} / A_{i,t-1} = \alpha_0 + \alpha_1 (1/A_{i,t-1}) + \alpha_2 (S_t/A_{i,t-1}) + \alpha_3 (\Delta S_t/A_{i,t-1}) + \varepsilon_{it} \quad (4)$$

$$CFO_{i,t}/A_{i,t-1} = \alpha_0 + \alpha_1 (1/A_{i,t-1}) + \alpha_2 (S_t/A_{i,t-1}) + \alpha_3 (\Delta S_t/A_{i,t-1}) + \varepsilon_{it} \quad (5)$$

$$PROD_{i,t}/A_{i,t-1} = \alpha_0 + \alpha_1 (1/A_{i,t-1}) + \alpha_2 (S_t/A_{i,t-1}) + \alpha_3 (\Delta S_t/A_{i,t-1}) + \alpha_4 (\Delta S_{i,t-1}/A_{t-1}) + \varepsilon_{it} \quad (6)$$

Where $CFO_{i,t}$ is the Cash flows from operations, $DISX_{i,t}$ is the total of selling and administration expense, $PROD_{i,t}$ is the sum of cost of goods sold and change in inventory, $S_{i,t}$ is the value of sales in period t, ΔS_{t-1} is changing in sales year t, ΔS_{t-1} is changing in sale at year t-1, A_{t-1} = the total assets at the end of year t-1. And the abnormal cash flow operation (AB_CFO), abnormal discretionary expense (AB_DISEX) and abnormal production (AB_PROD) compute as the actual value minus the normal value of variables.

According to three models to capture REM that are abnormal production (AB_PROD), abnormal cash flow operation (AB_CFO) and abnormal discretionary expense (AB_DISX). This study follow prior study (Cohen et al., 2008; Cohen & Zarowin, 2010; Li et al., 2016; Wu, Gao & Gu, 2015; Zang, 2012) to proxy REM as mean of abnormal production minus mean of abnormal cash flow operation and mean of discretionary expense ($REM_{i,t} = AB_PROD_{i,t} - AB_CFO_{i,t} - AB_DISEX_{i,t}$), where AB_CFO and AB_DISES are multiplied by minus 1.

INDEPENDENT VARIABLES – PERSONAL CHARACTERISTICS

Hambrick and Mason (1984) reveal the upper echelons characteristic that is the theory about the reflection of the executive performance, This study follows prior research (Hili & Affess, 2012; Krishnan & Parsons, 2008; Lovata et al., 2016; Peni & Vähämaa, 2010; Santoso & Fu, 2014; Ye et al. (2010) focusing on the observable character including age, gender, education, accounting proficiency, and tenure.

- (1) Age (AGE): measuring as the median age of top management team by taking the value of 1 if TMT tenure is over the median and taking value 0 for lower.
- (2) Gender (GEN): to measure the variable of this study setting the dummy indicator of gender as 1 for female TMT, and 0 for male TMT.

- (3) Education (PMS): measuring as the percentage of TMT members possessing master's degrees or over.
- (4) Accounting proficiency (PCPA): to measure as firms with TMT members possessing a CPA certificate by setting the dummy indicator of Accounting proficiency as 1 if firms with TMT is possessing a CPA certificate and 0 if firms that without.
- (5) Tenure (TENURE): the tenure in a company or the duration of executive position in the Company, measured as the median tenure of top management team by taking the value of 1 if TMT tenure is over the median and take value 0 for lower.

CONTROL VARIABLES

- (1) Firm size (SIZE) is the natural log of total assets.
- (2) GROWTH (GROWTH) is measured as the percentage increase in sales.
- (3) Return on assets (ROA) is calculated as income before extraordinary items divided by lagged total assets.
- (4) Leverage ratio (LEV) is calculated as total liabilities divided by total assets.
- (5) Industry group (INDUS), the dummies of seven industries of the sample.
- (6) Year (YEAR), the dummies of each year during 2013–2017.

MODEL SPECIFICATION

To test hypotheses, this study develops models to investigate the association between TMT characteristics and earnings management (EM), the regression models have been developed as follow.

$$EM = \beta_0 + \beta_1 AGE_{i,t} + \beta_2 GEN_{i,t} + \beta_3 PMS_{i,t} + \beta_4 PCPA_{i,t} + \beta_5 TENURE_{i,t} + \beta_6 SIZE_{i,t} + \beta_7 GROWTH_{i,t} + \beta_8 LEV_{i,t} + \beta_9 ROA_{i,t} + \beta_{10} Dummy_{INDUS_{i,t}} + \beta_{11} Dummy_{YEAR_{i,t}} + \varepsilon_{i,t} \quad (7)$$

Where EM measurement as two approaches are accruals earnings management (AEM) and real activities earnings management (REM); $AEM_{i,t}$ denote the

absolute discretionary accruals of firm i in year t measure by Modified Jones model (P. M. Dechow et al., 1995); $REM_{i,t}$ denote sum of abnormal cash flow, abnormal discretionary expense and abnormal of firm i in year t by following Roychowdhury (2006). AGE denotes average age of TMT; GEN denotes the percentage of female participation in TMT; PMS denotes the percentage of TMT possessing master degree; PCPA denotes firms with TMT possessing CPA certificate; TENURE denotes as the median tenure of top management team by taking the value of 1 if TMT tenure is over the median and taking value 0 for lower. Among control variables are SIZE denotes log of assets at the year-end; GROWTH denotes sale growth rate in the prior year; LEV denotes the ratio of total liabilities to total assets; ROA denotes the ratio of net income to total assets. Finally, Dummy_INDUS and Dummy_YEAR present dummy for each industry and each year.

RESULT

Descriptive statistics

Table 2 presents descriptive statistics of TMT characteristics and earnings management based on total sample of 1,855 firm-year observations. The average values of AEM, REM, are -0.0075, and 0.0013. To measure TMT characteristics, the results provide average age of TMT is 58 years old, with the oldest TMT being 83.5 years old, while the youngest 35. The median of the age variable is 58 years old. Gender of TMT reveals proportion of female as 16.56% (median is 25%), the percentage of TMT who has masters' degree is 52.20%, the average of TMT who has CPA certificate is 0.05 which is considered a small percentage for TMT members with accounting expertise. On TMT tenure, results reveal that mean of TMT tenure is 9 years and median is 7 years. The averages of control variables, SIZE, GROWTH, LEV, and ROA are 8.4643, 142.7745, 0.4338 and 0.0491, respectively.

Table 2. Full Sample 1,855 observations during 2013–2017

Variables	Mean	Std.Dev.	Min	Median	Max
AEM	-0.0075	0.1662	-1.0010	-0.0164	2.7590
REM	0.0013	0.1827	-2.2471	0.0012	4.8024

Table 2. Full Sample...

Variables	Mean	Std.Dev.	Min	Median	Max
AGE	58.3191	6.9754	35	58	83.5
GEN	16.5633	17.7323	0	25	100
PMA	52.1967	26.5731	0	50	100
PCPA	0.0539	0.2258	0	0	1
TENURE	9.2504	7.2882	1	7.3333	37
SIZE	8.4643	1.4509	4.0741	8.2552	13.8390
GROWTH	142.7745	3614.419	-100	1.2873	138115.2
LEV	0.4338	1.5387	0.0007	0.3899	65.7995
ROA	0.0491	0.1288	-2.4481	0.0498	1.6898

Notes: Variable definitions are in Appendix B.

Source: author’s computation, 2018.

Correlation matrix

Table 3 presents the variables correlation among TMT characteristics and earnings management. The AGE is negatively correlated with AEM (-0.060) and positively correlated with REM (0.063). TMT with masters’ degree is positively correlated with AEM (0.048), TENURE of TMT is negatively correlated with AEM (-0.042) but positively correlated with REM (0.044). Among control variables, there is a positive correlation between TENURE and LEV (0.039), and there are the negative correlation between ROA and SIZE (-0.068), and positive correlation between ROA and LEV (0.056).

Table 3. Presents the variables correlation

	AEM	REM	AGE	GEN	PMA	PCPA	TENURE	SIZE	GROWTH	LEV
REM	-0.557***	1								
AGE	-0.060***	0.063***	1							
GEN	0.013	0.003	-0.138***	1						
PMA	0.048**	-0.029	-0.151***	0.107***	1					
PCPA	-0.010	-0.013	-0.031	0.060***	-0.006	1				

Table 3. Presents...

	AEM	REM	AGE	GEN	PMA	PCPA	TENURE	SIZE	GROWTH	LEV
TENURE	-0.042*	0.044*	0.264***	-0.118***	-0.018	-0.043*	1			
SIZE	0.063***	-0.029	0.008	-0.119***	0.232***	0.033	-0.001	1		
GROWTH	0.014	0.173***	0.022	-0.011	0.005	-0.005	-0.037	0.007	1	
LEV	-0.002	-0.001	0.021	-0.030	-0.009	-0.015	0.039*	-0.020	0.001	1
ROA	0.508***	0.031	-0.015	0.016	-0.016	0.004	-0.014	-0.068***	0.002	0.056***

Notes: Variable definitions are in Appendix B.
 ***, **, and * indicate significance at 1%, 5% and 10%, respectively.

Source: author’s computation, 2018.

THE EFFECT OF TMT CHARACTERISTICS ON EARNINGS MANAGEMENT BASED ON THAI FIRM-LISTED OBSERVATIONS

Table 4 presents the regression result of TMT characteristics and earnings management both AEM and REM by using 1,855 firm-years (all observations) in 2013–2017. The columns (1) to (5) show the effect of each variable on AEM including are AGE, GEN, PMS, PCPA, and TENURE. The result found AGE, PCPA and TENURE negatively related to AEM as the coefficient -0.0163, -0.0273, and -0.0179, respectively. Column (6) investigates the effect of all TMT characteristics on AEM; the result is consistent with each variable equation, TMT age, CPA possessing and tenure are still negatively related with AEM (the coefficient -0.0132, -0.0296 and -0.149, respectively), which reveal AEM will decrease 1.32% when the average age of TMT is over 58 year (the median) or it can be said that older TMT would report less level of AEM compared to younger. Consistent with the prior study, researcher provides older chairman and CEO are more ethical and have conservative behavior that lead to decrease discretionary accruals and report more quality of earnings (Santoso & Fu, 2014; Xiong, 2016).

Table 4. Regression of TMT characteristics on Accrual Earnings Management (AEM) on all sample (1,855 firm-years)

	AEM					
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-0.0734	-.0783	-0.0808*	-0.0750	-0.0718	-0.0711
	(-1.53)	(-1.59)	(-1.69)	(-1.58)	(-1.49)	(-1.40)
AGE	-0.0163**					-0.0132**
	(-2.38)					(-1.99)
GEN		0.0000				-0.0000
		(0.20)				(-0.04)
PMS			0.0000			0.0000
			(0.61)			(0.30)
PCPA				-0.0273*		-0.0296**
				(-1.84)		(-1.99)
TENURE					-0.0179**	-.0149*
					(-2.27)	(-1.93)
SIZE	0.0098**	0.0096**	0.0092**	0.0095**	0.0096**	0.0097**
	(2.32)	(2.14)	(2.15)	(2.24)	(2.25)	(2.17)
GROWTH	6.03e-0	5.66e-0	5.67e-0	5.62e-0	5.02e-0	5.44e-0
	(1.59)	(1.44)	(1.42)	(1.42)	(1.29)	(1.43)
LEV	-0.0118***	-0.0119***	-0.0119***	-0.0120***	-0.0118***	-0.0118***
	(-7.94)	(-7.76)	(-7.87)	(-7.87)	(-7.72)	(-7.70)
ROA	0.5368***	0.5375***	0.5376***	0.5392***	0.5385***	0.5395***
	(9.98)	(9.85)	(9.87)	(9.82)	(9.75)	(9.76)
Observation	1,855	1,855	1,855	1,855	1,855	1,855
R2	0.1622	0.1592	0.1594	0.1604	0.1609	0.1646

Notes: This table presents the result of regressions TMT characteristics on accruals earnings management (AEM) and based on 1,855 observations during 2013-2017. Using the random effects and clustering by firm to analyze the data. Refer to the Appendix B for detailed variable definitions. ***, **, and * indicate significance at 1%, 5% and 10% and present t-statistics are in parentheses.

Source: author's computation, 2018.

While in the factor of accounting proficiency, the study found firms that have TMT members with CPA certification would have lower AEM level (with 2.96% decreasing). Consistently, the evidence in 2015 reveals that the level of AEM would decrease in firm with a higher proportion of directors who have financial or accounting expertise (Ngamchom, 2015). The result about accounting proficiency can be explained by the limitation of accounting policies; AEM is measured by discretionary accruals that executives can manage through the accounting policies selection, adjusting the recognition, increasing the assumed amount of transactions and including accelerating and/or delaying transactions. There is a limit to the frequency of changing accounting policies and there is a risk of being examined by the auditor (Li et al., 2016; Peasnell, Pope & Young, 2000; Wasiuzzaman, Sahafzadeh & Rezaie Nejad, 2015).

Consequently, TMT members with CPA certification have more knowledge of accounting principle. They realize more about the regulation than executives without accounting skill, and might consider to manage earnings through other methods to avoid the investigating from auditor.

The prior research found tenure of chairman had a negative relationship with discretionary accruals (Xiong, 2016), and the evidence revealed CFO tenure and AEM are not related (Sooksanit, 2016). While, it found that the increasing of CEO tenure leads to an increase in AEM level (Santoso & Fu, 2014). According to the work of the executives, there must be cooperation and working as a team. This study measures tenure as the average tenure of TMT members and compare with the median, result supports the negative association by presenting the evidence if firms have the average of TMT tenure over 7 years (the median) AEM level will decrease as 1.49%. On the effect of control variables on AEM, the study shows SIZE and ROA are positively related, in contrast, LEV or leverage of firm has a negative effect on AEM.

Table 6 presents the association between TMT characteristics and REM. There is only one factor that has an effect to REM which is the TMT tenure, with significance at the 5% level. Column (5) shows TENURE factor is positively related to REM as the coefficient value 0.0174, which means 1.74% increase in REM occurs when the average of TMT tenure increases by 1 year. And in column (6) by running all factor of TMT characteristics in the equation, the results still have a positive association between TMT tenure and REM as the coefficient value 0.0158 (if the average of TMT tenure increase by 1 year REM level will increase at 1.58%). Among of control variables, there is no significant relation-

Table 5. Regression of TMT characteristics...

	REM					
	(1)	(2)	(3)	(4)	(5)	(6)
R2	0.0376	0.0358	0.0359	0.0358	0.0375	0.0381

Notes: This table presents the result of regressions TMT characteristics on real activities earnings management (REM) and based on 1,855 observations during 2013-2017. Using the random effects and clustering by firm to analyze the data. Refer to the Appendix B for detailed variable definitions. ***, **, and * indicate significance at 1%, 5% and 10% and present t-statistics are in parentheses.

Source: author’s computation, 2018.

While prior research provided evidence about the influence of executives’ gender and education on earnings management that implied executives with female and high level of education would have more conservation and lead to decreasing of earnings management level (Gavious et al., 2012; Li et al., 2016; Peni & Vähämaa, 2010; Srinidhi et al., 2011; Xiong, 2016). However, the result from table (5) and (6) in this study found gender and education of TMT have no significant association with both AEM and REM.

CONCLUSION

The paper investigates the association between TMT characteristics and earnings management in Thailand based on 1,855 Thai-firm listed observations in period 2013–2017. The majority in the literature has been focused on chief executives officer (CEO), however, due to performing the business, executives need to work as a team by applying their expertise and responsibilities to achieve the goal of business. Therefore, this paper expands the scope of study by investigating the effect of TMT characteristics (including four positions, chairman, chief executives officer, managing director, and chief financial officer) on earnings management behavior both AEM and REM.

The results in this study reveal that TMT characteristics and earnings management are related which can explain in two parts. First, for the aggregate result of Thai-firms listed having found the important factor related to both AEM and REM is TUNURE, the results reveal TMT with long term of tenure (over 7 years) have negative association with AEM. In contrast, it is positive with REM, which implies TMT with long tenure tends to replace AEM by using REM approach. In addition, there are two other factors that have a negative relation-

ship with AEM: age and CPA certification. The result reveal TMT with older of age, CPA certification and long tenure would have more knowledge and experience about the business administration including human resource, production, and finance and accounting. Consequently, they are able to achieve their earnings target through the operation activities rather than relying on the accruals approach at the year end, due to the limitation of accounting principle and the risk of being audited by the auditor.

The findings in this study have important implications for stakeholders, especially for the regulator to pay attention to regulate and monitor the executive operation in order to increase the reliability of information disclosed in the financial statements, which is the key instrument for investor or stakeholders in making a business decision. This study measured AEM and REM by using the Modified Jones models (Dechow et al., 1995) and the model from Roychowdhury (2006). However, the result and conclusions might change when measuring AEM and REM by other models or new factors created for earnings management.

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Appendix A Industrial structure (8 industries) and the business category (28 sectors) of the Stock Exchange of Thailand

Industry Group Name (8)	Sector Name (28)	Sector Index
Agro & Food Industry (AGRO)	Agribusiness Food & Beverage	AGR FOOD
Consumer Products (CONSUMP)	Fashion Home & Office Products Personal Products & Pharmaceuticals	FASHION HOME PERSON
Financials (FINCIAL)	Banking Finance & Securities Insurance	BANK FIN INSUR
Industrials (INDUS)	Automotive Industrial Materials & Machinery Packaging Paper & Printing Materials Petrochemicals & Chemicals Steel	AUTO IMM PKG PAPER PETRO STEEL
Property & Construction (PROPCON)	Construction Materials Construction Services Property Development Property Fund & REITs	CONMAT CONS PROP PF&REIT
Resources (RESOURC)	Energy & Utilities Mining	ENERG MINE
Services (SERVICE)	Commerce Health Care Services Media & Publishing Professional Services Tourism & Leisure Transportation & Logistics	COMM HEALTH MEDIA PROF TOURISM TRANS
Technology (TECH)	Electronic Components Information & Communication Technology	ETRON ICT

Appendix B Variable definitions and measurements

Variables	Definition/Measurement
AEM	The absolute value of discretionary accrual, measured by Modified Jones model.
REM	Real earnings management, Follow Roychowdhury (2006) calculated by equation $REM = AB_PROD - AB_CFO - AB_DISEX$.
AB_CFO	<p>the abnormal cash flows from operations that is measured as (-1)*the residual from following regression:</p> $CFO_{i,t} / A_{i,t-1} = \alpha_0 + \alpha_1 (1/A_{i,t-1}) + \alpha_2 (S_t/A_{i,t-1}) + \alpha_3 (\Delta S_t/A_{i,t-1}) + \varepsilon_{it}$ <p>CFO is cash flows from operation; S is annual sales; A is total assets.</p>
AB_DISX	<p>the abnormal level of discretionary expenditures that is measured as (-1)*the estimated residual from the following regression:</p> $DISX_{i,t} / A_{i,t-1} = \alpha_0 + \alpha_1 (1/A_{i,t-1}) + \alpha_2 (S_{t-1}/A_{i,t-1}) + \varepsilon_{it}$ <p>DISX is the sum of advertising, R&D, and selling, general, administrative expenditures; S is annual sales; A is total assets.</p>
AB_PROD	<p>the abnormal production costs that is the estimated residual from the following regression:</p> $PROD_{i,t} / A_{i,t-1} = \alpha_0 + \alpha_1 (1/A_{i,t-1}) + \alpha_2 (S_t/A_{i,t-1}) + \alpha_3 (\Delta S_t/A_{i,t-1}) + \alpha_4 (\Delta S_{i,t-1}/A_{t-1}) + \varepsilon_{it}$ <p>PROD is the sum of cost of goods sold and the change in inventory; S is annual sales; A is total assets.</p>
AGE	Age of top management team at year of data collection, measured by comparing average age of top management team with the median by taking the value of 1 if TMT tenure is over the median and take value 0 for lower.
GEN	The percentage of TMT members that female (1 = male, 0 = female).
PMS	The percentage of TMT members possessing master's degrees. (1 = master degree and above, 0 = under master degree).
PCPA	Firms with TMT members possessing a CPA certificate (1 = firms with TMT possessing a CPA, 0 = firms without).
TENURE	The tenure of top management team at year of data collection, measured by comparing the average tenure of top management team with the median by taking the value of 1 if TMT tenure is over the median and take value 0 for lower.
SIZE	The log of total assets at year-end.
GROWTH	The sale growth rate in prior year.
LEV	The total liabilities (year-end) divided by total assets (year-end).

Appendix B Variable...

Variables	Definition/Measurement
ROA	Net income/ total assets at year end.
INDUS	The dummies of each industry that including seven industries.
YEAR	The dummies of each year during 2013–2017.