

Impact of Shareholder Structure on Earnings Manipulation in Thai IPOs on the Market for Alternative Investment (mai): Pre-and Post-IPO Analysis

Metta Semsomboon*
Kusuma Dampitakse**
Wachira Boonyanet***

Abstract

The connection between shareholder structure and earnings manipulation, which is also called earnings management, in the pre- and post-IPO years is examined in this paper, with an emphasis on what is happening with Thai IPO firms. The sample comprises 72 firms that were listed on the Market for Alternative Investment (mai) from 2012 to 2017. The findings reveal a statistically significant negative association between management shareholders and the practice of manipulating real earnings in the pre-IPO year. Nonetheless, during this period, no association between shareholding concentration and earnings manipulation was found. In the post-IPO year, there is no association between shareholder retention and earnings manipulation. These findings contribute to our knowledge of how shareholder structure impacts earnings manipulation practices in IPO firms, emphasizing the role of management shareholders in mitigating opportunistic behavior. The absence of a significant post-IPO relationship may be attributed to the substantial decrease in management's shareholding, resulting in a consequential loss of control and influence over earnings management. This study offers valuable insights for various stakeholders, including policymakers, investors, and corporate practitioners seeking to comprehend the dynamics of shareholder structure and earnings manipulation activities in Thai IPO firms.

Keywords: Real Earnings Manipulation; Accrual-based Earnings Manipulation; Ownership Concentration; Managerial Ownership; Earning Management

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* Faculty of Business Administration, Rajamangala University of Technology Thanyaburi.

** Assistant Professor, Faculty of Business Administration, Rajamangala University of Technology Thanyaburi.
(Corresponding Author)

*** Associate Professor, Chulalongkorn Business School, Chulalongkorn University.

Introduction

Initial public offerings (IPOs) offer companies a compelling opportunity to raise their capital requirements by issuing securities to the public. Through an IPO, a company can access more financing options and diversification benefits. However, changing from private to public shareholders introduces a new paradigm that creates conflict between managers and shareholders (Jensen & Meckling, 1976). Managers, acting as agents, may have different objectives and motivations compared to the shareholders, who are the true owners of the company. A significant challenge during an IPO is information asymmetry. Managers have access to privileged information about their company that investors do not readily know about. Such information asymmetry creates agency problems since managers can exploit the situation by manipulating earnings and financial information during the IPO process. Their general intention is to artificially inflate the offering price and attract a larger pool of investors (Armstrong et al., 2016).

Previous research has revealed that, prior to an IPO, companies often employ earnings manipulation tactics, such as income-increasing accruals, in order to enhance their financial performance and attract potential investors (Alhadab et al., 2015; DuCharme et al., 2001; Miloud, 2014; Teoh et al., 1998). Additionally, other studies have indicated that managers may continue to manipulate earnings even after the IPO, particularly during the lockup period, in order to boost the selling price for pre-IPO shareholders (Ertimur et al., 2017; Hao, 2013). In the context of Thailand, Keeratipongpakdee (2017) identified that IPO companies engaged in earnings manipulation by employing discretionary accruals in the periods before, during, and after their securities were offered to the public. Likewise, a study by Piriyaniti and Supattarakul (2006) also confirmed earnings manipulation through discretionary accruals, particularly in the year of the IPO.

Effective corporate governance plays a crucial role in ensuring that managers act in the best interests of shareholders, constituting a key component of corporate governance and financial processes (Allen & Gale, 2001). It helps mitigate inappropriate earnings manipulation practices and underscores the importance of developing and maintaining corporate financial credibility (Bushman & Smith, 2003). Previous studies have explored the impact of good corporate governance on earnings manipulation more broadly. However, when examining this influence in the specific context of initial public offerings (IPOs), certain research limitations persist. Firth et al., (2007) discovered that institutional investors facilitate accrual-based earnings manipulation before IPOs but restrain such practices after the issuance of shares in US firms. Similarly, Pramithasari and Yasa (2017) identified a significant inverse relationship between management ownership, independent commissioners, and audit committee involvement with earnings manipulation among companies conducting IPOs in Indonesia. In the case of IPO companies in Thailand, Keeratipongpakdee (2017) discovered a relationship between the proportion of benefactors and earnings manipulation in the same direction. However, Tongmon (2019) did not find a significant relationship between corporate governance factors, including board size, the proportion of independent directors, the duality of chairman and board of directors, and managerial ownership, when measuring earnings manipulation through discretionary accruals.

From the literature review, it is evident that studying the relationship between effective corporate governance and earnings manipulation in the context of initial public offerings (IPOs) remains a fascinating area that has not been extensively explored. Existing research is limited, and clear conclusions are lacking. This study aims to bridge this gap by contributing

valuable empirical evidence and analytical insights into the relationship between shareholder structure and earnings manipulation within the specific context of IPOs in the Thailand Market for Alternative Investment (mai). Given that more than 90 percent of businesses in Thailand are classified as Small and Medium Enterprises (SMEs), they play a critical role in driving the growth of the Thai economy. According to data from the Stock Exchange of Thailand, there has been an increase in the number of SMEs registering on the mai market, totaling 204 companies in the year 2022 (Stock Exchange of Thailand, 2022). Furthermore, SMEs financing in the mai market exhibited a higher level of earnings manipulation compared to large companies listed on the SET (Keeratipongpakdee, 2017).

This study encompasses both the pre- and post-IPO periods with the objective of shedding light on changes in shareholder structure and earnings manipulation practices during the transition from private to publicly listed companies. The findings make a significant contribution to the existing literature on corporate governance, earnings manipulation, and initial public offerings (IPOs), offering valuable insights for various stakeholders, including policymakers, investors, and corporate practitioners, in effectively managing these dynamics.

Literature Review

This section offers the fundamental concept of this study. Also, a literature review leading to the development of hypotheses is described.

Earnings Manipulation During IPO Period

Initial public offerings (IPOs) are characterized by information asymmetry, where potential investors have limited knowledge compared to current shareholders. This information gap gives managers both the opportunity and incentive to manipulate earnings during the IPO to improve the company's performance. When investors become overly optimistic about a firm's value, its share price exceeds a fair price. Issuers seize this chance to sell shares at a premium, capitalizing on this 'window of opportunity.' The window of opportunity hypothesis predicts that companies going public during high-volume or 'hot' periods are more likely to be overvalued compared to other IPOs.

Empirical studies have revealed that the initial public offering IPO issuers frequently use discretionary accruals to enhance their reported earnings before an offering, reflecting the belief on the part of company executives and current shareholders that financial statement information can dictate IPO prices (DuCharme et al., 2001; Friedlan, 1994; Miloud, 2014). However, some studies have revealed that firms exhibiting abnormally high accruals during their IPO year tend to exhibit poor stock return performance a few years later, implying that they may manipulate their financial statements before going public to increase the offer price (Chaney & Lewis, 1998; Miloud, 2014; Roosenboom et al., 2003; Teoh et al., 1998). Other studies confirmed that certain companies employ earnings manipulation using accruals before an IPO and during the lockup period to boost share prices and benefit current shareholders (Ertimur et al., 2017; Hao, 2013). On the contrary, some scholars argue that IPO firms cannot be involved in systematic manipulation of their earnings due to the auditors', boards of directors', and underwriters' oversight responsibilities (Armstrong et al., 2016; Ball & Shivakumar, 2008).

Despite limited analysis of real earnings manipulation, prior studies also indicate that some IPO firms manipulate real earnings. For instance, Darrrough and Rangan (2005) discovered that firms during the IPO period attempted to reduce their R&D expenditures to

boost reported earnings, motivated by management share sales. Alhadab et al. (2015) and Kalgo et al., (2016) found that IPO firms employed both real and accrual-based earnings manipulation strategies during the IPO period to increase their earnings.

In the Thai context, research on earnings manipulation in IPO firms has primarily relied on accrual earnings manipulation as a proxy. For instance, Keeratipongpakdee (2017) found that IPO firms engaged in earnings manipulation through discretionary accruals in the year before, during, and after their securities were offered. Furthermore, there was also an observation that IPO firms listed on the Market for Alternative Investment (mai) in Thailand exhibited a higher level of earnings manipulation compared to firms listed on the SET. Similarly, Piriyaniti and Supattarakul (2006) found evidence of earnings manipulation through discretionary accruals, specifically during the IPO year but not in the preceding or subsequent years. However, since analysis of discretionary accruals captures only one aspect of discretionary behavior, this study expands the existing literature by also including real earnings manipulation for a more comprehensive analysis.

Shareholding Concentration and Earnings Manipulation

Shareholding concentration is defined as the presence of large shareholders with a durable incentive to closely follow up on management decisions in order to safeguard their benefits and investments (Ramsay & Blair, 1993; Shleifer & Vishny, 1986). This concentration of shareholders can serve as good corporate governance to reduce agency problems by increasing monitoring (Demsetz & Lehn, 1985). According to the agency theory (Jensen & Meckling, 1976), the existence of large shareholders is expected to lower opportunistic earnings manipulation. However, the presence of concentrated shareholdings can lead to agency conflicts that occur when controlling owners and minority shareholders have divergent interests. Large shareholders may interfere with corporate management and earnings manipulation to advantage themselves, creating further agency conflicts (Jaggi & Tsui, 2007).

Empirical research has produced mixed findings on the relationship between shareholding concentration and earnings manipulation. However, several scholars have claimed that shareholding concentration is negatively correlated with discretionary accruals (Abdoli, 2011; Alzoubi, 2016; Ghaleb et al., 2020; Roodposhti & Chashmi, 2010), given that large shareholders can monitor and limit opportunistic earnings manipulation by company executives (Demsetz & Lehn, 1985). In contrast, previous studies documented a positive relationship between shareholding concentration and accrual earnings manipulation (Firth et al., 2007; Halioui & Jerbi, 2012; Waweru & Riro, 2013). This suggesting that controlling shareholders may interfere with management and encourage managers to manipulate earnings to maximize their personal benefits (Jaggi & Tsui, 2007). However, Burdeos (2021) presented a different viewpoint, stating that their study discovered no evidence linking the largest shareholder and discretionary accruals in IPO firms listed on the Philippine Stock Exchange. Recent research supports the alignment hypothesis given that shareholding concentration had a negative association with real earnings manipulation (Ghaleb et al., 2020; Mellado & Saona, 2020). However, Kang and Kim (2012) presented a contrasting viewpoint by asserting that their investigation did not uncover any evidence of a link between shareholding concentration and real earnings manipulation.

Based on the literature review, it is evident that a clear conclusion regarding the relationship between shareholding concentration and earnings manipulation remains elusive. However, it is typically observed that the major shareholders before an IPO are the company co-founders. They may leverage their influence to safeguard and nurture their substantial

investments. This proactive involvement is expected to limit opportunistic earnings manipulation, aligning with agency theory (Jensen & Meckling, 1976). Consequently, this study formulates the following hypotheses:

Hypothesis 1 (H₁): In the pre-IPO year, shareholding concentration is negatively associated with earnings manipulation.

Management Shareholders and Earnings Manipulation

According to agency theory (Jensen & Meckling, 1976), conflicts of interest are likely to arise between external shareholders and managers, who act as representatives of the shareholders. To reduce such agency costs and align the interests of shareholders and management, higher managerial ownership is believed to be effective, which aligns with the alignment effect perspective. However, the entrenchment hypothesis posits that complete management control may prioritize personal interests over those of shareholders, thereby potentially increasing the chances of earnings manipulation.

Previous studies examining the impact of management shareholders on earnings manipulation have produced inconsistent results. While some studies support the alignment effect, others back up the entrenchment hypothesis. For example, Dempsey et al. (1993), Warfield et al. (1995), Klein (2002), You et al. (2003), and Alves (2012) discovered that insider shareholders had a negative association with discretionary accrual, while Gumanti et al. (2016) and Pramithasari and Yasa (2017) discovered that management shareholders have a negative impact on earnings manipulation in Indonesian IPO companies. Conversely, Al-Fayoumi et al. (2010) identified a positive association between insider shareholders and earnings manipulation within Jordanian industrial firms. Gabrielsen et al. (2002) found a positive but non-significant relationship between managerial ownership and discretionary accruals in a sample of Danish firms. Notably, Tongmon (2019) reported no significant relationship between managerial ownership and earnings manipulation in Thai IPO firm. However, these studies only examined accrual-based earnings manipulation.

A recent study by Mellado and Saona (2020) in the Latin American market found that when insider shareholder numbers increased, executives engaged in greater real earnings manipulation, which can lead to higher costs than accrual earnings manipulation in the long run. However, this current study assumes that a higher level of management shareholders in a firm will reduce earnings manipulation since they align shareholders and management interests. Hence, the study proposes the following hypothesis:

Hypothesis 2 (H₂): In the pre-IPO year, management shareholders are negatively associated with earnings manipulation.

Shareholder Retention and Earnings Manipulation

When a company conducts an IPO, alterations to its shareholder structure are possible. These modifications can affect the behavior of managers, particularly their propensity to manipulate earnings. In a study by Hull et al. (2013) found that insider behavior related to lowering shareholder proportions and increasing net share sales is associated with reduced research and development spending during IPOs. This finding aligns with the research by Darrough and Rangan (2005), who documented that changes in research and development expenditure during the offering year had a negative association with management's selling of

shares. However, discretionary current accrual levels and management share sales were positively associated.

Furthermore, according to Fan (2007), an inverse relationship was found between earnings manipulation in IPO firms and the level of ownership retained by pre-IPO shareholders. When insiders retain more shares, it becomes more expensive for issuer firms to engage in earnings management, and thus they tend to report better-quality earnings. Kalgo et al. (2016) indicate a negative association between earnings manipulation and shareholder retention in IPO firms. The study proposes that greater shareholder alignment with shareholders' and management's interests, thereby decreasing the need for earnings manipulation to signal a firm's quality. A higher level of insider shareholder retention is commonly seen as an indication of a greater perceived quality of the project, given that insiders hold superior knowledge of firm future value. Consequently, the retention of pre-IPO shareholders can positively impact the IPO price.

Based on these studies, a mixed relationship of shareholder retention by pre-IPO shareholders and the practice of earnings manipulation was found. Hence, the following hypotheses are proposed:

Hypothesis 3 (H₃): In the post-IPO year, the retention of shareholding concentration is negatively associated with earnings manipulation.

Hypothesis 4 (H₄): In the post-IPO year, the retention of management shareholders is negatively associated with earnings manipulation.

Research Methodology

Dataset

With the aim to scrutinize the influence of shareholder structure on the practice of earnings manipulation in the pre- and post-IPO years of Thai IPO firms, a thorough analysis was conducted using a preliminary sample of 83 initial public offerings (IPO) firms listed on the Market for Alternative Investment (mai) in Thailand from 2012 to 2017. This analysis aimed to ensure the empirical evidence's up-to-date nature and minimize the influence of the COVID-19 pandemic and changes in accounting standards. The data from the company prospectus and annual reports available in the online database of the Securities and Exchange Commission of Thailand from 2010-2018 were obtained. To ensure the sample's reliability, finance companies were excluded due to their unique financial structures (Davidson et al., 2005; Klein, 2002) and their need for additional governance regulations. Incomplete and outlier data were also excluded, resulting in a final sample size of 72 companies. Also, the classic assumption tests, including normality, heteroscedasticity, multicollinearity, and autocorrelation, were conducted to validate the study's findings.

Measuring Earnings Manipulation

Measures of Real Earnings Manipulation (REM)

In accordance with previous studies, I calculate proxies for real earnings manipulation using established models proposed by Dechow et al. (1998), as later applied by Roychowdhury (2006), Cohen and Zarowin (2010), and Zang (2012).

The study emphasizes analyzing two practices that characterize real earnings manipulation: 1) abnormal levels of operating cash flows due to sales-based manipulation; and

2) abnormal levels of discretionary expenses resulting from reducing such expenses. The study excludes abnormal production costs as a proxy considering that IPO firms, being relatively newer, are less inclined to engage in such practices (Wongsunwai, 2013). Moreover, the majority of the sample firms operate in the service industry.

Sales manipulation

Sales manipulation is an attempt by managers to boost sales temporarily within a given year. This is achieved through strategies such as providing rebates or more compromised credit terms, which leads to less operating cash flows (Roychowdhury, 2006).

To estimate the normal level of operating cash flows, a cross-sectional analysis was conducted for each industry and year, considering all non-IPO firms. However, due to the small capital market in MAI, estimating the model on an industry basis was not appropriate. The study aggregated the data from all industries, following the approach outlined by Roosenboom et al. (2003).

The model employed to estimate the normal level of operating cash flows is:

$$OCF_{it}/A_{it-1} = \alpha_0 + \alpha_1(1/A_{it-1}) + \beta_1(S_{it}/A_{it-1}) + \beta_2(\Delta S_{it}/A_{it-1}) + \varepsilon_{it} \quad (1)$$

Where OCF_{it} represents the operating cash flows of firm i in year t , A_{it-1} represents the total assets of firm i in year $t-1$, S_{it} denotes the sales of firm i in year t , ΔS_{it} stands for the change in sales of firm i in year $t-1$ to year t , and ε_{it} is a residual term that captures the abnormal level of operating cash flows of firm i in year t .

Abnormal operating cash flows (AbOCF) of IPO firms are calculated as the difference between the actual operating cash flows and the estimated normal operating cash flows using the coefficients in Equation (1).

Discretionary expenses

Discretionary expenses encompass various costs, such as R&D and SG&A expenses. When discretionary expenses are reduced during a given period, it leads to an increase in earnings, and operating cash flows in that specific period increase.

The model employed to estimate the normal level of discretionary expenses is:

$$DISEXP_{it}/A_{it-1} = \alpha_0 + \alpha_1(1/A_{it-1}) + \beta(S_{it-1}/A_{it-1}) + \varepsilon_{it} \quad (2)$$

Where $DISEXP_{it}$ represents the sum of R&D and SG&A expenses of firm i in year t , and all other variables have the same definitions as previously provided.

Abnormal discretionary expenses (AbDEX) of IPO firms are calculated as the difference between the actual discretionary expenses and the estimated normal discretionary expenses using the coefficients in Equation (2).

Aggregated real earnings manipulation

In order to assess the overall impact of real earnings manipulation, the study employed a combined measure that incorporates abnormal operating cash flows and abnormal discretionary expenses into an aggregated measure of real earnings manipulation, following previous studies (Alhadab et al., 2015; Hao, 2013; Purayil & Lukose, 2019). It should be noted

that both abnormal operating cash flows and abnormal discretionary expenses denote deviations from normal levels and are expected to be negative when manipulation happens. Therefore, the study multiplied both variables by -1 and summed them up to create an aggregated REM measure. A higher REM value indicates a greater likelihood of IPO firms seizing sales manipulation and reducing discretionary expenses to boost earnings.

Measures of Accrual Earnings Manipulation (AEM)

Similar to previous research, this study uses the cross-sectional Modified Jones Model's (Dechow et al., 1995), where the objective is to estimate discretionary accruals as the primary measure of accrual earnings manipulation. This involves calculating the difference between total accruals and estimated normal accruals. The study estimates the model for each year for all non-IPO firms. The primary model for estimating coefficients is based on the following cross-sectional model:

$$TA_{it}/A_{it-1} = \alpha_{1i}(1/A_{it-1}) + \alpha_{2i}(\Delta REV_{it})/A_{it-1} + \alpha_{3i}(PPE_{it})/A_{it-1} + \varepsilon_{it} \quad (3)$$

Where TA_{it} represents the total accruals, which are determined by the deviation between net income and operating cash flows; A_{it-1} is the total assets of firm i in year $t-1$; ΔREV_{it} stands for the change in sales of firm i in year t ; and PPE_{it} denotes the gross value of PP&E of firm i in year t .

The estimated coefficient values obtained from Equation (4) serve to calculate normal accruals (NDA) for all IPO firms in each year as follows:

$$NDA_{it} = \alpha_{1i}(1/A_{it-1}) + \alpha_{2i}(\Delta REV_{it} - \Delta REC_{it})/A_{it-1} + \alpha_{3i}PPE_{it}/A_{it-1} \quad (4)$$

Where ΔREC_{it} represents the change in receivables of firm i in year t

Discretionary accruals (DA) are calculated as the difference between actual total accruals and the estimated normal accruals.

Regression Model and Variable Definitions

To investigate the proposed hypotheses regarding the link between shareholder structure and earnings manipulation during the pre-and post-IPO year, the following regression equation is utilized:

Pre-IPO year (Year t-1)

$$EM_{i,t-1} = \alpha_0 + \beta_1 \text{CONC}_{i,t-1} + \beta_2 \text{MANG}_{i,t-1} + \beta_3 \text{LEV}_{i,t-1} + \beta_4 \text{GROWTH}_{i,t-1} + \beta_5 \text{AGE}_{i,t-1} + \text{IND} + \text{YEAR} + \varepsilon_{i,t-1} \quad (5)$$

Where $EM_{i,t-1}$ represents the different proxies for REM and AEM of firm i in the year $t-1$

Post-IPO year (Year t+1)

$$EM_{i,t+1} = \alpha_0 + \beta_1 \text{R_CONC}_{i,t+1} + \beta_2 \text{R_MANG}_{i,t+1} + \beta_3 \text{LEV}_{i,t+1} + \beta_4 \text{GROWTH}_{i,t+1} + \beta_5 \text{AGE}_{i,t+1} + \text{IND} + \text{YEAR} + \varepsilon_{i,t+1} \quad (6)$$

Where $EM_{i,t+1}$ represents the different proxies for REM and AEM of firm i in the year $t+1$

Table 1: Definitions of Variables

Acronym	Variables	Measurement	Source
REM	Real earnings manipulation	Abnormal operating cash flow (multiplied by -1) + Abnormal discretionary expenses (multiplied by -1)	Hao (2013), Alhadab et al. (2015), Purayil and Lukose (2019)
AEM	Accrual-based earnings manipulation	Discretionary accruals estimated from the Modified Jones Model's by Dechow et al. (1995)	Teoh, Wong, et al. (1998), Fan (2007), Hao (2013), Ertimur et al. (2017)
CONC	Shareholding concentration	The proportion of common stocks held by the largest shareholder in the pre-IPO year	Burdeos (2021)
R_CONC	Retention of shareholding concentration	The proportion of common stocks retained by the largest shareholder, who was an original owner	Fan (2007), Kalgo et al. (2016)
MANG	Management shareholders	The proportion of common stocks held by the board of directors and executives in the pre-IPO year	Gumanti et al. (2016), Pramithasari and Yasa (2017)
R_MANG	Retention of management shareholders	The proportion of common stocks retained by the board of directors and executives, who were the original owners	Fan (2007), Kalgo et al. (2016)
LEV	Leverage	Debt to total assets	Fan (2007), Hao (2013), Alhadab et al. (2015), Kalgo et al. (2016)
GROWTH	Firm growth	Firm growth represents last year revenue change over current year revenue. To obtain a normal distribution, the Johnson transformation method is used.	Hao (2013), Kalgo et al. (2016), Purayil and Lukose (2019)
AGE	Length of firm's operation	The difference between the IPO issue-year and the founding year	Fan (2007), Hao (2013), Alhadab et al. (2015), Kalgo et al. (2016)
INDUS	Industry	Industry dummies include seven distinct industry groups: 1) Service, 2) Industrials Group, 3) Consumer Products Group, 4) Property and Construction Group, 5) Resources, 6) Technology Group, and 7) Agro and Food Industry	Hao (2013), Alhadab et al. (2015)
YEAR	Year	Year dummies	Hao (2013), Alhadab et al. (2015)

Research Findings

Descriptive Statistics

Table 2 presents descriptive statistics of variables for the pre- and post-IPO years, revealing a decrease in post-IPO shareholding concentration (CONC) and management shareholders (MANG) compared to the pre-IPO shareholding concentration. The average shareholding concentration was 70.94% before the IPO, decreasing to an average of 50.71% after the IPO. In the case of management shareholders, the average was 56.45% in the pre-IPO period, which decreased to 40.49% after the IPO. Regarding aggregate real earnings manipulation, it was observed that the average increased after the IPO compared to before it. The pre-IPO average was -0.017, while the post-IPO average was 0.004. In contrast, discretionary accruals showed a decrease in average values after the IPO. Before the IPO, the average value was 0.041, which decreased to 0.027 after the IPO. Additionally, control variables, including leverage, firm growth, and the length of business operation, were analyzed. It was found that leverage decreased after the IPO, there was a decrease in the growth rate of revenue after the IPO, and the average firm length of business operation before registration was 16 years.

Table 3 presents a comparison of average differences in shareholder structure and earnings manipulation proxies between the pre- and post-IPO years. The results indicate statistically significant differences in shareholder structure between the pre- and post-IPO years. Specifically, the average shareholding concentration (CONC) significantly decreased by 20.23% in the post-IPO year compared to the pre-IPO year. Similarly, the average management shareholders (MANG) significantly decreased by 15.96% in the post-IPO year compared to the pre-IPO year. However, the average difference in earnings manipulation proxies did not reach statistically significant. The average aggregate real earnings manipulation increased slightly by 0.022, while discretionary accruals decreased by 0.014.

Correlation Matrices

Tables 4 and 5 present the Pearson correlation matrices for the variables in the pre-IPO and post-IPO years, respectively. The matrices show that independent variables insignificantly correlate (≥ 0.90), which alleviates concerns about multicollinearity. Additionally, the Variance Inflation Factors (VIFs) do not exceed the threshold of 10, confirming that multicollinearity is not a concern (Gujarati, 2003).

Regression Results

Regression results are demonstrated in Table 6, showing the examination of the relationship between shareholder structure and earnings manipulation in the pre-IPO period. The outcomes show that no significant association was found between shareholding concentration (CONC) and earnings manipulation proxies, while a significant negative relationship was found between management shareholders (MANG) and real earnings manipulation (REM). Conversely, no statistically significant association was found between MANG and accrual-based earnings manipulation (AEM). Thus, hypothesis 1 is not supported, whereas hypothesis 2 is supported.

Table 2: Descriptive Statistics of Variables

Variables	Pre-IPO (Year -1)					Post-IPO (Year +1)				
	Mean	Median	S.D	Min	Max	Mean	Median	S.D	Min	Max
Shareholding concentration (%)	70.941	76.498	23.888	21.840	100	50.711	52.352	16.559	15.529	75.988
Management shareholders (%)	56.450	58.140	32.924	0.000	100	40.494	43.045	24.191	0.000	84.652
Aggregate real earnings manipulation	-0.017	-0.015	0.224	-0.842	0.756	0.004	0.017	0.152	-0.345	0.506
Abnormal operating cash flows	-0.024	-0.031	0.173	-0.768	0.478	-0.006	-0.005	0.130	-0.352	0.342
Abnormal discretionary expenses	0.006	0.037	0.152	-0.556	0.296	0.010	0.020	0.098	-0.371	0.164
Discretionary accruals	0.041	0.042	0.192	-0.441	1.164	0.027	0.030	0.107	-0.312	0.389
Leverage (time)	0.545	0.536	0.175	0.181	0.881	0.347	0.324	0.174	0.026	0.696
Growth (%)	0.191	0.139	1.094	-2.368	3.618	0.039	0.123	0.903	-2.608	1.859
Length of firm's operation (years)	16.278	15.500	8.202	1.000	34.000	18.278	17.500	8.202	3.000	36.000

Note: Shareholding concentration is the percentage of common stock held by the largest shareholder(s) in a company. In the pre-IPO year, it is calculated as the percentage of common stock held by the largest shareholder. In the post-IPO periods, it is calculated as the percentage of common stock retained by the largest shareholder(s) who were the original owners. Management shareholders is the percentage of common stock held by the board of directors and executives. In the pre-IPO year, it is calculated as the percentage of common stock held by the board of directors and executives. In the post-IPO years, it is calculated as the percentage of common stock retained by the board of directors and executives who were the original owners.

Table 3: The Mean Difference of Shareholder Structure and Earnings Manipulation Proxies

Variables	Pre-IPO (Year-1)	Post-IPO (Year+1)	Mean Difference	t-Statistic	p-value
	Shareholding concentration (%)	70.941	50.711	-20.230	-18.065**
Management shareholders (%)	56.450	40.494	-15.956	-12.095**	0.000
Aggregate real earnings manipulation	-0.017	0.004	0.022	0.808	0.422
Abnormal operating cash flows	-0.024	-0.006	0.018	0.682	0.497
Abnormal discretionary expenses	0.006	0.010	0.004	0.427	0.671
Discretionary accruals	0.041	0.027	-0.014	-0.470	0.640

Notes: Paired samples t-test; *, and ** indicate .05, and .01 significance levels, respectively.

Table 4: Pearson Correlation Matrix in the Pre-IPO Year (Year -1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	VIF
(1) REM	1									-
(2) AbOCF	.738**	1								-
(3) AbDEX	.635**	-.052	1							-
(4) AEM	.506**	.651**	.004	1						-
(5) CONC	.116	.063	.100	.103	1					1.152
(6) MANG	-.217	-.110	-.194	.058	.026	1				1.371
(7) LEV	.078	.282*	-.207	.026	-.054	.006	1			1.330
(8) GROWTH	-.228	-.065	-.263*	-.258*	.072	-.095	.234*	1		1.348
(9) AGE	-.082	-.199	.105	-.138	.124	.134	-.073	-.013	1	1.426

Notes: *, and ** indicate .05, and .01 significance levels, respectively.

Table 5: Correlation Matrix of Variables in the Post-IPO Year (Year +1)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	VIF
(1) REM	1									-
(2) AbOCF	.771**	1								-
(3) AbDEX	.535**	-.125	1							-
(4) AEM	.697**	.803**	.021	1						-
(5) R_CONC	.108	.108	.026	.067	1					1.145
(6) R_MANG	-.062	.034	-.142	.050	.087	1				1.338
(7) LEV	.081	.218	-.163	.096	-.012	.017	1			1.246
(8) GROWTH	-.093	.073	-.241*	.085	.032	.054	.245*	1		1.340
(9) AGE	.267*	.203	.147	.167	.152	.203	-.036	-.048	1	1.439

Notes: *, and ** indicate .05, and .01 significance levels, respectively.

Table 6: The Association between Shareholder Structure and Earnings Manipulation in the Pre-IPO Year (Year -1)

Variables	REM		AbOCF		AbDEX		AEM	
	Coef.	t-Stat	Coef.	t-Stat	Coef.	t-Stat	Coef.	t-Stat
Constant	-0.213	-1.420	-0.182	-1.466	-0.031	-0.306	0.015	0.121
CONC	0.001	0.765	0.001	0.038	0.001	1.093	-0.001	-0.064
MANG	-0.002	-2.410*	-0.001	-1.150	-0.001	-2.170*	-0.001	-0.695
LEV	0.219	1.431	0.311	2.451**	-0.092	-0.891	0.065	0.510
GROWTH	-0.064	-2.604*	-0.024	-1.199	-0.040	-2.399*	-0.054	-2.616*
AGE	-0.213	-1.420	-0.002	-0.545	0.004	1.570	-0.003	-0.929
Year Dummies		Yes		Yes		Yes		Yes
Industry Dummies		Yes		Yes		Yes		Yes
Adj. R2		0.237		0.125		0.247		0.268
F-statistic		2.379		1.635		2.453		2.624
Prob (F-statistic)		0.009		0.090		0.007		0.004
Durbin-Watson		2.114		1.869		2.095		1.863
Observations		72		72		72		72

Notes: *, and ** indicate .05, and .01 significance levels, respectively.

Table 7: The Association between Shareholder Retention and Earnings Manipulation in the Post-IPO Year (Year +1)

Variables	REM		AbOCF		AbDEX		AEM	
	Coef.	t-Stat	Coef.	t-Stat	Coef.	t-Stat	Coef.	t-Stat
Constant	-0.198	-2.427**	-0.185	-2.375**	-0.013	-0.255	-0.101	-1.632
R_CONC	0.001	0.813	0.001	0.632	0.000	0.345	0.000	0.430
R_MANG	-0.001	-0.169	0.001	0.796	-0.001	-1.543	0.001	1.313
LEV	0.036	0.340	0.124	1.224	-0.088	-1.379	0.008	0.105
GROWTH	-0.003	-0.153	0.008	0.373	-0.011	-0.846	0.020	1.265
AGE	0.007	2.729**	0.004	1.529	0.003	2.097**	0.003	1.829*
Year Dummies		Yes		Yes		Yes		Yes
Industry Dummies		Yes		Yes		Yes		Yes
Adj. R ²		0.174		-0.044		0.270		0.042
F-statistic		1.935		0.813		2.645		1.193
Prob (F-statistic)		0.036		0.665		0.004		0.303
Durbin-Watson		2.073		2.021		1.619		2.311
Observations		72		72		72		72

Notes: *, and ** indicate .05, and .01 significance levels, respectively.

When considering each activity of REM, there is no statistically significant relationship between MANG and abnormal operating cash flows (AbOCF). However, there is a statistically significant and negative association between MANG and abnormal discretionary expenses (AbDEX). The findings suggest that firms with lower management shareholders are more likely to implement cost-cutting measures in discretionary expenses to give the impression that the financial performance is favorable.

In addition, the study reveals that firm growth is significantly associated with REM and AEM in a negative way. The outcomes indicate that firms experiencing lower revenue growth rates tend to manipulate their earnings upward in order to reach their targets. Conversely, leverage significantly associates with AbOCF in a positive way. This suggests that firms with higher leverage tend to be involved in manipulating their earnings upward through sales manipulation. Also, an examination of the relationship between shareholder retention and earnings manipulation in the post-IPO period is shown in Table 7. Suggested in the findings is that there is no statistically significant association between the retention of shareholding concentration, the retention of management shareholders, and earnings manipulation (both REM and AEM). Thus, hypotheses 3 and 4 are not supported. However, what is reported here is a significant positive association between the firm's length of operation (AGE) and both REM and AEM. These results suggest that firms with a longer period of operations tend to engage in both REM and AEM practices to increase their earnings after the IPO.

Discussions and Conclusion

This present study aims to contribute to the existing knowledge by examining the influence of shareholder structure on earnings manipulation in the pre- and post-IPO years of Thai IPOs registered on the Market for Alternative Investment (mai). The research findings indicate that after a company registers as a public corporation, both the largest shareholder and management shareholders decrease significantly. These findings imply a transition towards a more dispersed shareholder structure, which could have implications for decision-making within companies and corporate governance. However, the degree of earnings manipulation has not changed significantly. Real earnings manipulation increased on average after the IPO, while discretionary accruals decreased on average after the IPO. This data suggests that prior to the IPO, companies may employ accrual-based strategies to increase reported earnings. However, after the IPO, the focus may transition to real earnings manipulation in order to boost their earnings.

In the examination of the association between shareholder structure and earnings manipulation, there was no statistically significant association between shareholding concentration and earnings manipulation in the pre-IPO year. This aligns with the findings of Burdeos (2021) and Kang and Kim (2012). The absence of a significant association suggests that the largest shareholders may not engage in systematic earnings manipulation, possibly due to oversight by regulators, auditors, and underwriters. However, the findings demonstrate a negative relationship between management shareholders and real earnings manipulation in the pre-IPO year. This confirms the agency theory stating that higher management shareholders align shareholder and management interests, thereby reducing the likelihood of earnings manipulation. The findings are in line with Gumanti et al. (2016) and Pramithasari and Yasa (2017). Furthermore, firm growth demonstrates a negative relationship with earnings manipulation, stating that growing firms may have fewer incentives to engage in earnings manipulation. However, in the post-IPO year, no significant relationship is observed between

shareholder retention and earnings manipulation. This contrasts with earlier studies by Fan (2007) and Kalgo et al. (2016), which found a negative relationship between earnings manipulation and shareholder retention by pre-IPO shareholders. This distinction is made since our study primarily focuses on the post-IPO year, unlike Fan (2007) and Kalgo et al. (2016), who conducted their investigations during the IPO year. The difference in timing provides a unique perspective, emphasizing the reduced control and influence on earnings manipulation by pre-IPO shareholders. Additionally, managing earnings post-IPO becomes more challenging due to stakeholders heightened vigilance, which can act as a deterrent against managerial opportunistic behavior. This study also finds a positive relationship between the longevity of firms' business operations and earnings manipulation, advising that older companies may resort to earnings manipulation practices to enhance their post-IPO earnings.

This research improves our understanding of the relationship between shareholder structure and earnings manipulation in Thai IPOs listed on the Market for Alternative Investment (mai). The insights gained from this research have implications for various stakeholders, including policymakers, investors, and corporate practitioners. Policymakers can develop effective regulations and policies to help them monitor and manage shareholder dynamics during IPOs. Specifically, close monitoring and regulation of the number of shares sold by management after the IPO are recommended. This is important as it has an impact on the internal management structure and earnings management of companies. Investors can utilize the findings to make more informed investment decisions by understanding the impact of shareholder structure on earnings manipulation. Corporate practitioners can gain valuable insights into managing shareholder structure and earnings manipulation in both the pre- and post-IPO periods. This information can be utilized to strengthen and develop efficient governance mechanisms, ultimately enhancing the effectiveness of business operations oversight. This, in turn, contributes to sustained long-term growth.

Limitations and Direction of Future Research

It is important to acknowledge that this study is limited to firms listed on the Market for Alternative Investment (mai) in Thailand. To further advance knowledge in this area, future research could extend the study and broaden the scope to include companies listed on the Stock Exchange of Thailand (SET). These expanded investigations would provide better knowledge of the intricate association between shareholder structure and earnings manipulation within diverse market contexts.

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