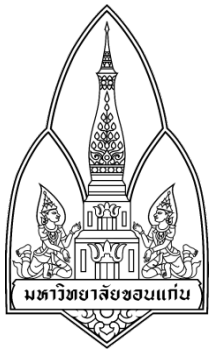

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ABSTRACT

This paper aims to explore earnings management strategies as an accrual and real earnings management in six ASEAN countries that are arranged by quadrants classification technique applying from random matrix theory. The six ASEAN countries compose of Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam, which have a different background or mindsets about accounting standard development. The researcher measures the earrings management behavior with a panel data and collects data from 3,951 enterprises in set traded firms in six ASEAN countries members during 1993-2014. Using means value; the results found that the maximum means value of absolute accrual earnings management contains two countries: Indonesia and Philippines. For the maximum means value of absolute real earnings management is Vietnam. Then classifies earnings management strategy with the quadrants classification belonging random matrix theory are used. The results follow quadrant classification technique found that all countries was classified earnings management to three main types (Normal, Downward, and Upward) and eleven sub-types (Normal_A&R, Normal_AEM, Normal_REM, Downward_A&R, Downward_AEM, Downward_REM, Upward_A&R, Upward_AEM, Upward_REM, Upward_A&R_H, and Upward_AEM_H). Finally, country's background and earnings management strategy have significant differentiation (p-value= 0.000, contingency coefficient = 0.199).

Goodness Portion to the Present Research is Dedicated

for our Parents and Entire Teaching Staff

ACKNOWLEDGEMENTS

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Napaporn Likitwongkajon
Siriluck Sutthachai

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LIST OF ABBREVIATIONS

IASB	International Accounting Standards Board
IASs	International Accounting Standards
IFRSs	International Financial Report Standards
PPE	Property plant and equipment
R&D	Research and development
SEC	The Securities and Exchange Commission
SOX	the Sarbanes Oxley Act
ASEAN	the Association of Southeast Asian Nations
AEC	ASEAN Economic Community
AEM	Accrual earnings management
REM	Real earnings management
QEM	Quadrants earnings management

CHAPTER I
INTRODUCTION

This chapter provides rationale and background of research, which leads to the research questions, the research objectives, and the research contributions. However, the order of this chapter contains rationale and research background, research questions, and research contributions that this chapter reveals the details as below.

1.1 Rationale and Research Background

Earnings management is an important of financial statement report for investors to forecast a profit of a company that use to determine their interesting stock (Cai et al., 2008; Wang et al., 2010). Although, mostly companies in the world are under controllable with accounting standard such as GAAP of the U.S. or IFRS of the European, the outsiders are still cautious to forecast a financial report before making a decision investment because many factors influence to earnings management such as firm-level, culture, legal, and so on (Cai et al., 2008; Alia, & Branson & Alia, 2011; Gray et al., 2015). These are called accounting diversity (Doupnik, & Perera, 2007).

Otherwise, many researchers are an increased approval for studying about how companies manage earnings thru accrual and real earnings management (Cohen & Zarowin, 2010). Specifically, the real and accrual-based earnings management behavior in ASEAN market because the foreigners have to take a risk while they are making a decision to invest (Kuo et al., 2014). Therefore, a technique forecasting an earnings management behavior is a necessary to analyst for outsiders, which have expanded their investment into the developing country.

The ASEAN leaders affirmed to strain the foundation of an ASEAN Economic Community (AEC) by 2015. AEC issued a leniency law allowing people in the member states to exchange their goods, services, capital, investment, and labor among member countries. AEC issued lenient policies to support free flows community such as sustaining capital transfers and diminishing tariff tax within ASEAN countries (The ASEAN Secretariat, 2015). ASEAN is an attractive region while ASEAN’s economic is growing and raising investment for investors (The ASEAN Secretariat, 2015) such as the amount of investment intra-ASEAN is $24.4

billion in 2014 account for 18% of total inflows which increase 25.8% from last year. Investment blooming across companies in ASEAN in recent years is a stronger regional establishment, shading the light of opportunities that AEC-2015 influences the increase intraregional trade trend in ASEAN.

All country in the ASEAN community is attractiveness for foreign investors' investment. Thus, the outsiders consider and predict the economy of the community with a financial statement. This is to communicate useful financial data about firm position, firm performance and firm cash flows to make a decision to invest business in across country for users (IASB, 2010). However, ASEAN's members have different languages, history, society, politics, cultures, and economic development (The ASEAN Secretariat, 2015; Chairas & Radianto, 2010; Saudagaran & Diga, 1998). The background of each country affects to the accounting standards and economic development also (Alali & Cao, 2010; Cotterell, 2014). Thus, earnings management issue is a necessary and an important to foreign investors to understand.

The six ASEAN countries compose of Indonesia, Malaysia, Philippines, Thailand, and Vietnam, which is all developing countries, have a different background or mindsets about accounting standard development and earnings management recording also (Kittiakrastein, 2013). The financial reports are diversity that a cause of the outsider take a long time and risk to invest (Laloux et al., 2000). Hence, many researchers study many kinds of factors, which have power of influences, affect to earnings management. Also many tools for forecasting are interesting to study.

Furthermore, the economic growth statistic in ASEAN and market size revealed that ASEAN's rate of growth comparison with world's rate of growth was 1.7 and -0.6 in 2009, followed by 7.8 and 5.1 in 2010, and 4.7 and 3.8 in 2011 (see Figure 1.1). For ASEAN's market size pointed out $1,511.8 billion in 2009, followed by $1,882.7 billion in 2010, and $2,178.2 billion in 2011 as shown Figure 1.2 (The ASEAN Secretariat, 2012).

In addition, ASEAN is an attractive region for investors as shown Figure 1.3 (The ASEAN Secretariat, 2012). These showed that ASEAN's economic is growing and raising investment in this market. Hence, consideration investment's environment is an important to determine of FDI that can be predict the economy of community.

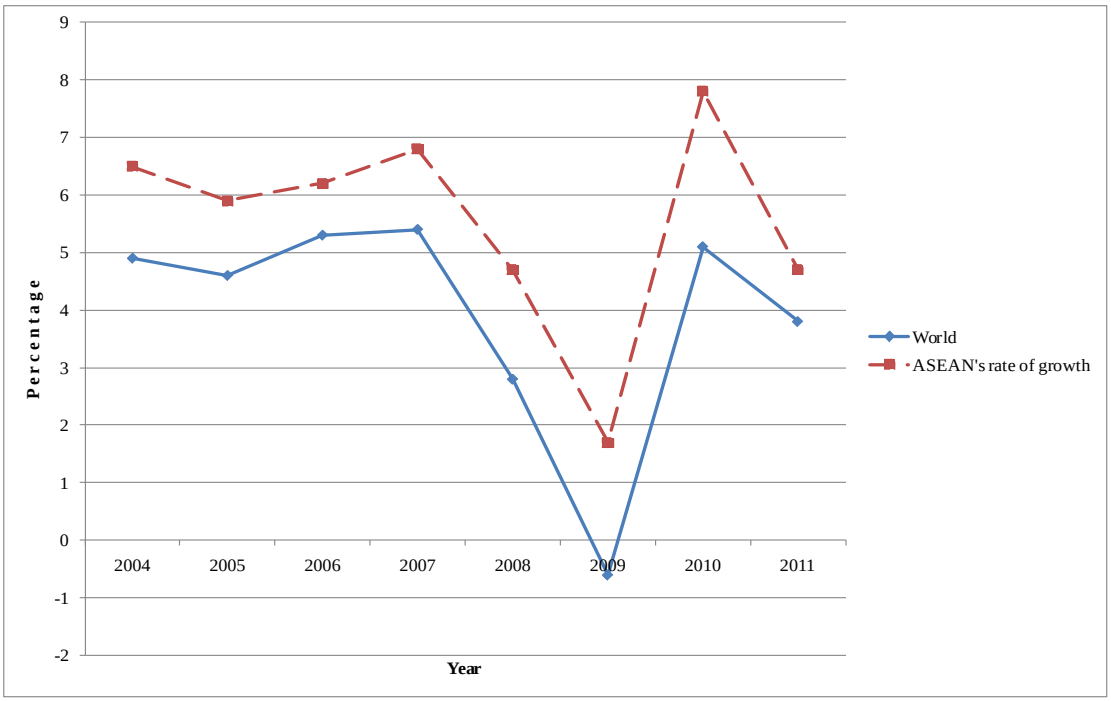

Figure 1.1 Comparison economic growth rate (The ASEAN Secretariat, 2012)

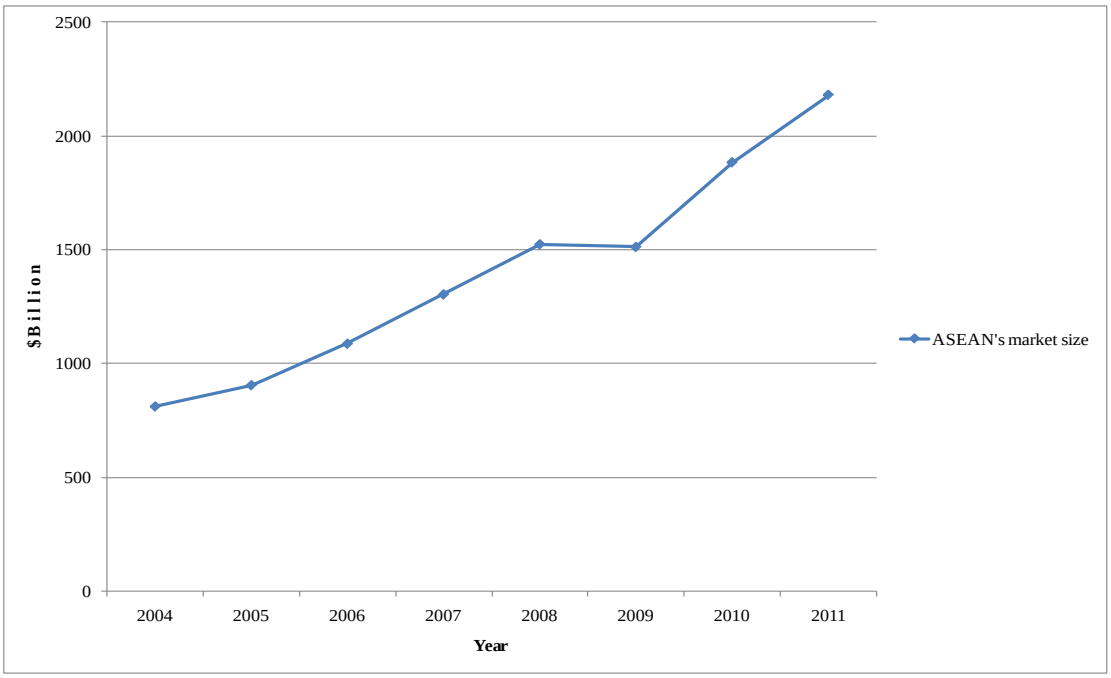

Figure 1.2 ASEAN Market's size (The ASEAN Secretariat, 2012)

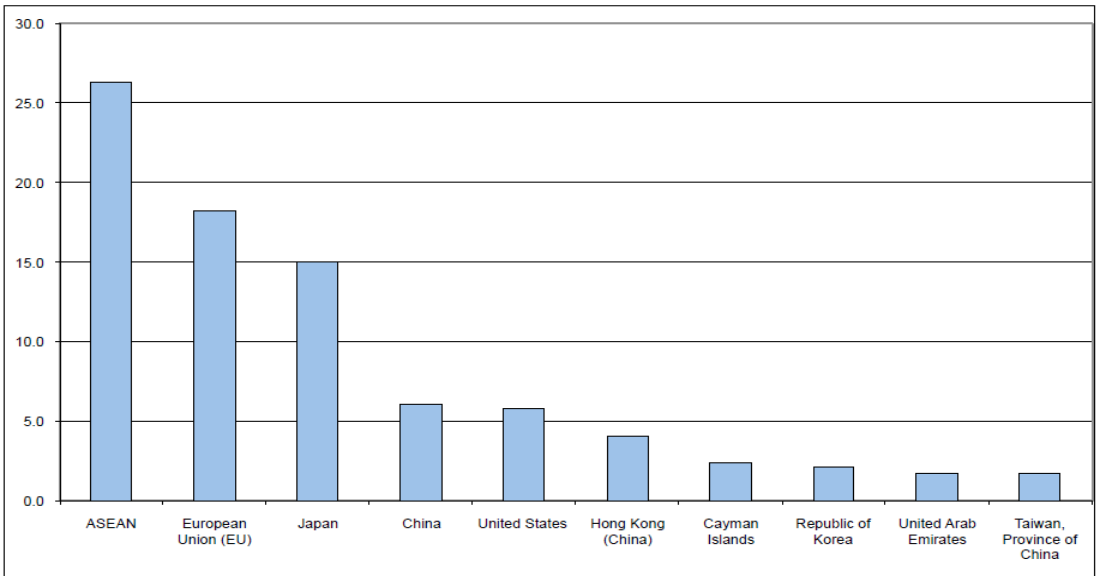

Figure 1.3 Top 10 investors in ASEAN, 2011 (The ASEAN Secretariat, 2012)

From economic growth rate and market's size database found that many investors are increasing investment in ASEAN countries. Financial statement is an essential and important for decision-making to invest their business. Not only financial statement is an important for domestic investment but international investment also (Sriworadetpisan, 2006). Specifically, investors in the Stock Exchange market are expecting business's profit, so an earnings management is a way for investors using to consider firm business situation (Sriworadetpisan, 2006). Therefore, the main objective of financial statement is to communicate financial information about the financial position, financial performance and cash flows of an entity to users (IASB, 2010).

The financial statement is useful information for investors to make a decision to invest business in across country so, an accounting standard is significant of economic decision-making process (Jeanjean & Stolowy, 2008). The foreign investors who invest in outside own country must verify with financial statements based on different their language so that this is a worse situation of investors (Jeanjean & Stolowy, 2008). In addition, if some country uses difference kind of a financial statement standard, it is a threat of foreign investors to understand and making a decision to invest. Thus, financial statement standard integration is a necessary and an important to ASEAN Economic Community (AEC) (Volz, 2013).

However, ASEAN contains many countries members which have different languages, society, political, cultures, and economic development (Chairas &

Radianto, 2010; Saudagaran & Diga, 1998; The ASEAN Secretariat, 2012). To meet a goal ASEAN members have to promote consistency in accounting practices for harmonization of fiscal, business, and financial policies (Rivera & Socias Salva, 1995). As an increasing amount of goods, service and capital flow across domestic border in regional economic community. The financial integration is necessary and certainly benefit for this region (Volz, 2013). Therefore, accounting harmonization standard measurement is an important financial quality for alliances economic of the member countries (Ali, 2006; Saudagaran, 2000).

Otherwise, the economic developing of ASEAN member is different so that an accounting standard is also variety (Kittiakrastein, 2013). Some country used a domestic accounting standard or International Accounting Standard (IAS), some country used U.S. Generally Accepted Accounting Principles (U.S. GAAP), and some country adopted International Accounting Reporting Standards (IFRS) (Kittiakrastein, 2013). However, every accounting standard composed an earnings management which is a part of financial statement report (Cai et al., 2008). Earnings management is an important for foreign investors to forecast a profit of a company that use to determine the attractiveness of a particular stock (Wang et al., 2008).

A company's capability to increase profit in the future is a very important for determining a stock's price. Earnings management is a strategy used by the manager team to manipulate the company's earnings to achieve a pre-determined target (Wang et al., 2008; Cai et al., 2008; Kittiakrastein, 2013). Hence, earnings management means:

> *"The managers use their judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers"* (Healy & Wahlen, 1999).

Currently, researchers are an increased appreciation for understanding and documenting how companies manage earnings thru real activities manipulation in addition to accrual-based activities (Cohen & Zarowin, 2010). First, accrual earnings management occurs when manages corporate earnings via accounting choices and accounting estimated within U.S. GAAP. Second, real earnings management is

earnings management through operating decisions with focus on financial reporting (e.g. Kothari et al., 2016; Kim & Sohn, 2012; Wongsunwai, 2011).

Earnings management is divided two types as accrual-based earnings management and real earnings management. However, this research studies to classify in depth both of earnings management type. Otherwise, although, many research study the earnings management in many countries, in ASEAN lacks of to study effect the accounting diversity toward earnings management in six ASEAN countries (Kittiakrastein, 2013; Volz, 2013). Most previous studies have focused more on developed economic community. Therefore, this research aims to fill the gap with explore accounting diversity influencing earnings management and classification in detail of both accrual and real earnings management in six ASEAN countries – Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam – that have enough data.

For the research problem is: what are earnings management strategies of six ASEAN countries using and how does accounting diversity relationship earnings management strategies? And the objectives of this study are: 1) to compare type of earnings management strategies regarding accounting diversity of six ASEAN countries, and 2) to study the relationship between accounting diversity and earnings management of six ASEAN countries. These are study within twenty years since 1990. The findings will provide greater knowledge and understanding of the earnings management behavior and the effects of accounting diversity on earnings management in ASEAN countries.

1.2 Research Questions

What are earnings management strategies of ASEAN countries?

1.3 Research Objectives

1.3.1 To study and compare earnings management strategies across ASEAN countries

1.3.2 To study the influence of accounting diversity on earnings management.

1.4 Research Contributions

1.4.1 The findings will provide greater knowledge and understanding earnings management practice in ASEAN.

1.4.2 The findings will provide greater knowledge and understanding of the effects of accounting diversity on earnings management.

1.4.3 The details of finding will help investors to have confidential for investment in ASEAN.

1.5 Outline of the Research

The remainder of this research is organized as follows. Chapter two provides the theoretical background and literature review regarding earnings management and accounting diversity. Chapter three discusses the research methodology, including sample selection, data collection, and statistical analysis. Chapter four describes the research results on the earnings management classification in ASEAN. Chapter five describes earnings management across ASEAN countries. Chapter six describes the influence of accounting diversity on earnings management. Finally, chapter seven concludes the whole research and the results as well as provides the research implications in addition to the limitations and suggestions for the future research.

CHAPTER II
LITERATURE REVIEWS

This chapter explained the principal of earning management and reviews prior studies that used in establishing the research hypotheses in next chapter for possible earnings management and earning management characteristics. This related to accounting diversity and earning management measurement, so the literature is discussed factor effecting as follows: accounting diversity, earnings management, earnings management measurement, and earning management behavior.

2.1 Earnings management (EM)

Earnings management is a step of process to accept an accounting principle which relates to a level of earnings report. Earnings management is defined as a financial report process, which is influenced by the external intent obtaining a private gain (Schipper, 1989). As such, in this research, earning management is defined as an instrument of managers or investors to analyze a situation of an enterprise through financial reports. Depending on earnings targets, the firms may manipulate the company's earnings via positive or negative earnings management. Positive earnings management is spread across aggressive accounting decisions for inflated earnings such as overly aggressive drawing down provisions or reserves; in addition to, undervaluation of purchase acquisition, understatement of providing for bad debt, understatement of restructuring charges and asset write-offs, accelerating sales, and postponing discretionary expenditure, such as research and development (R&D) and advertising expenditures (Dechow & Skinner, 2000).

In contrast, negative earnings management strategy is spread across conservative accounting decisions for deflated earnings such as reserving overvaluation on process R&D, overstatement cut-off asset, shift of sales, and accelerating discretionary expenditure, such as R&D and advertising expenditures (Dechow & Skinner, 2000) Moreover, the zero earnings management results from a neutral operating process from management decisions. Therefore, earnings management depends on managerial intent. From previous research (e.g. Dechow & Skinner, 2000; Graham et al., 2005; Gunny, 2010; Kothari et al., 2016), earnings are

typically known to be managed through two procedures: accrual earnings management and real earnings management. These are described below.

2.1.1 Accrual earnings management (AEM)

Accruals earning management is defined as the difference between the earnings and cash flows from operating activities. According to the accounting framework, financial reports presented on the accruals basis are useful in assessing the entity's past and future ability to generate net cash inflows. Accruals arise because of differences between the timing of accounting recognition and cash activities. Accounting earnings are comprised of three components, namely cash flows from operations, nondiscretionary accruals, and discretionary accruals (Healy & Wahlen, 1999); the discretionary accruals are the one that management employs to manage earnings. For example, according to the accounting standards, the companies recognize revenue when the future benefit is a probable flow to the companies and measured with reliability (IASB, 2010).

In a departure from a neutral decision, investors are unaware of the extent of accruals, thus accrual earnings management is damaging to the usefulness of financial reports (Isenmila & Elijah, 2012). Total accruals are likely the result from changes in the firm’s economic conditions and from the exercise of managerial discretion (Beneish, 2001). Accordingly, total accruals then are composed of two components: 1) nondiscretionary or normal accruals; and 2) discretionary or abnormal accruals. Nondiscretionary accruals are normal accruals resulting from changes in the companies’ economic situation whereas discretionary accruals are abnormal accruals resulting from managing earnings. Many researchers attempt to separate the partitioning of total accruals into nondiscretionary and discretionary accruals components (Dechow et al., 1995), and discretionary or abnormal accruals are used as a proxy to measure accrual earnings management (Dechow et al., 1995). High values of discretionary accruals indicate that management exercises intense accounting discretion accruals and ceteris paribus. A positive sign of discretion accruals indicates that management exercises the discretionary accruals to increase the companies’ earnings, which is ceteris paribus (Leuz et al., 2003). Therefore, accruals play an important role in managing companies’ earnings via accounting decisions; consequently, the amount of discretionary accruals is used to be a proxy to measure accrual earnings management.

2.1.2 Real earnings management (REM)

After the effect of the world's accounting scandals (i.e., Enron and WorldCom), earnings management behavior changed from taking accounting decisions to mixing accruals decisions and real activities to manage earnings. Due to the certification requirements imposed by the SOX, trends in earnings management behavior switched from accruals to real activity earnings management (Cohen & Zarowin, 2010). Moreover, management adjusts the level of accrual earnings management according to the level of real activity earnings management as substitutes. Thus, many researchers (e.g. Kim & Sohn, 2012; Kothari et al., 2016; Wongsunwai, 2013) focused on both accruals and real activity as the mechanism of earnings management.

Real earnings management activities, such as postponing discretionary expenditures, accelerating discretionary expenditures, discounting sales price, delaying sales, and accelerating sales, may possibly optimize actions in certain economic circumstances (Roychowdhury, 2006). Whenever, the manager assures the structuring of an operation, investment, and financing activities in an effort to influence the output of the accounting system, that is considered a real earnings management (Gunny, 2010).Furthermore, Gunny (2010) proposed four activities of real earnings management: (1) decreasing discretionary research and development expenses, (2) decreasing discretionary selling, general, and administrative expenses, (3) timing the sale of fixed assets to report gains, and (4) overproduction reflecting an intention to cut prices or extend more lenient credit terms to boost sales or overproduction to decrease cost of goods sold expense.

2.2 Accounting Diversity

The historic about accounting practice is different in many countries around the world. The variation of country's accounting regulations and practices results accounting diversity; however, it was encouraged international harmonization of accounting and was used global standard instead (Joos & Lang, 1994). So accounting diversity can be defines the differences between the financial reporting that depends different countries (Branson & Alia, 2011). Furthermore, the accounting diversity affects to an accounting standard and practice, especially, consideration differences exist an accounting standard across countries has an importance of revealing the

underlying reasons behind the principle (Branson & Alia, 2011; Frankel, 1998). Adhikari and Tondkar (1992) pointed out an accounting diversity exists because financial reporting and disclosure standards and practices do not develop in a vacuum but reflect the particular environment in which they are developed.

For reduction the accounting diversity problem is harmonization the accounting system (Jeno, 2010). The harmonization accounting system was developed for the business practice, especially, it use the harmonized international accounting system leads to a reduction of the information asymmetry between the owners and the managers (Jeno, 2010; Meeks & Swann, 2009). By this information asymmetry are growing the costs of equities and are less accurate the economical and financial forecasts. This requires the development and review of the national accounting rules, the separate validation of the tax and accounting regulation, the repeal of the subordinate role of accounting, issuing international standards with the help of practical and theoretical accounting experts (Jeno, 2010; Meeks & Swann, 2009).

However, Figure 2.1 displayed a framework for international accounting development. This composes eight components, for instance, enterprise users, government, other external users, local environment characteristics, international influences, academic influence, accounting profession, and nature of the enterprise (Gray, 1988; Saudagaran & Diga, 1998). The international accounting development framework was developed and adapted by many researchers. Specifically, Gray (1988) developed Hofstede’s model of cultural dimensions to the international accounting development framework through national level.

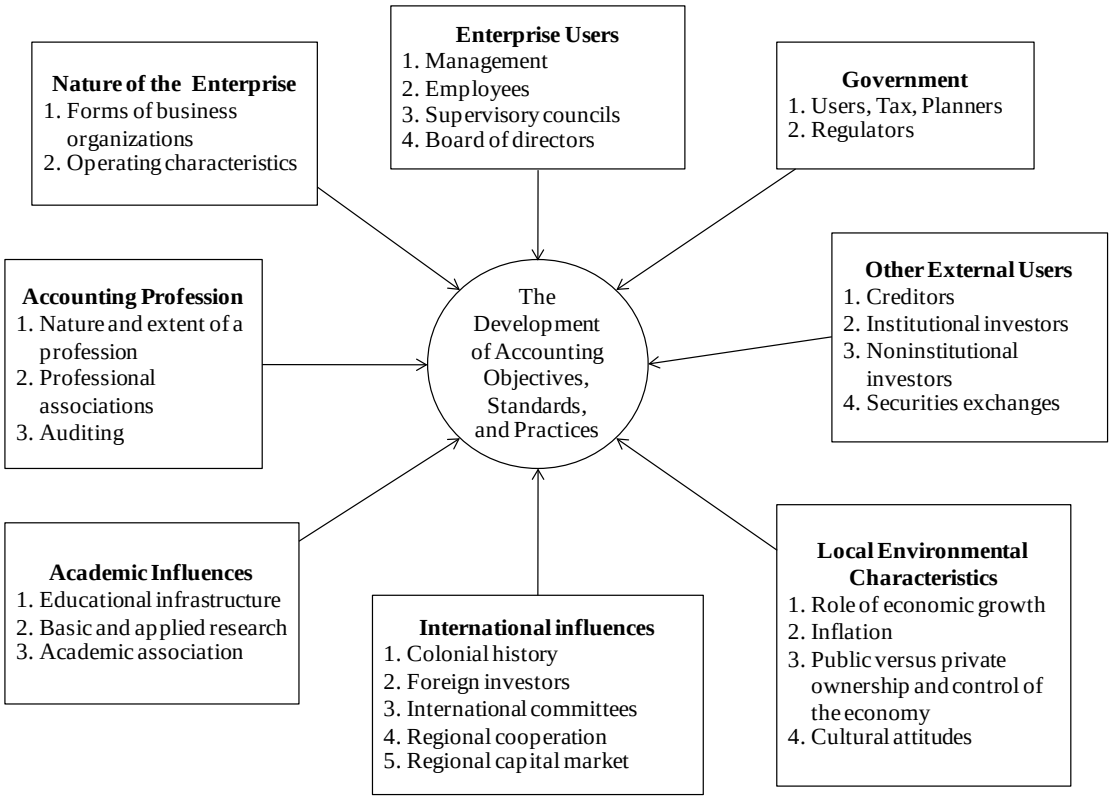

Figure 2.1 International accounting development framework was developed by Radebaugh, 1975 (Gray, 1988).

In addition, Saudagaran and Diga (1998) claimed that developing the international accounting standard must know and evaluate the background variables because the accounting systems differ from country to country. So, developing the framework needs to a coherent explanation accounting harmonization. Moreover, Doupnik and Perera (2007) adapted Grey's framework for showing the relationship of factors influencing on the development of accounting systems internationally as shown in Figure 2.2 and Nobes (1988) reduced Grey's framework to a simplified model as shown in Figure 2.3 for ease to classified class of accounting (Doupnik & Perera, 2007; Hoyle et al., 2011). Thus, international accounting system had has an evolution till present and an importance objective for finding factors effect to the accounting standards and practice or reducing the accounting diversity (Gray, 1988; Muniandy & Ali, 2012; Saudagaran & Diga, 1998).

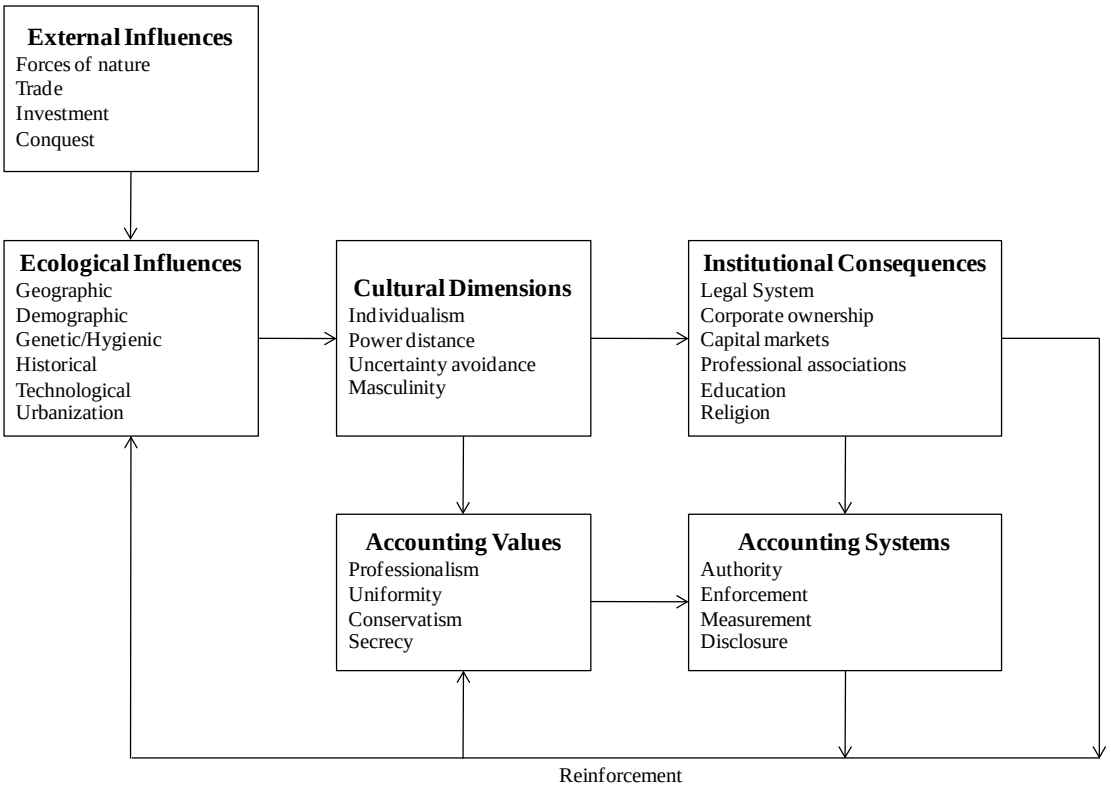

Figure 2.2 Framework for the development of accounting systems adapted from Gray, 1988 (Doupnik & Perera, 2007).

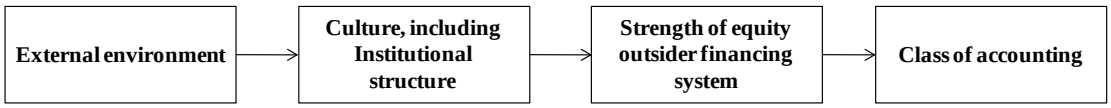

Figure 2.3 Framework for the development of accounting systems adapted from Gray, 1988 (Doupnik & Perera, 2007).

Otherwise, although an accounting diversity is quite old problem in present, many countries in ASEAN community have varieties of a financial statement. This is because many countries in ASEAN community have a difference in history and economic development (Davis-Friday, 2006). In addition to many researchers found that factors influences a country's accounting system and standard containing many items. For example, Nobes (1998) pointed out a reasons and discussion the international differences in accounting practices, for instance, nature of business ownership and financial system, stage of economic development, geography, history, colonial inheritance, religion, language, and so on. However, the model uses a two-way classification based on the strength of equity markets and the degree of cultural

dominance. Specifically, factors such as the political system, religion and the stage of development are more relevant outside the developed world while colonial inheritance, history, religion, and nature of business ownership and financial system are more relevant inside the developing countries (Nobes, 1998).

Furthermore, Gray (1988) stated that the differences in financial statement frameworks are caused by legal systems, economic circumstances, corporate financing, the size and power of the accounting profession, and national culture. These are factors effect to accounting harmonization. So, in this research interests only three mains factors, for instance, 1) international influences as colonial history or post-colonial era, 2) local environmental characteristic as culture, and 3) institutional consequences as legal system. Additionally, this research collects an accounting data only from six member countries in ASEAN that consist of Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam.

2.2.1 Post-colonial Era

For the international environment influences to an accounting harmonization which is the historical perspective. Otherwise, the international environment advocates heavily the characteristics of financial reporting frameworks, especially in developing countries (Gray, 1983; Alia, & Branson & Alia, 2011). Generally, the developing countries had colonized the Western countries (Gray, 1988; Alia & Branson & Alia, 2011) not only the Africa or others side of the world but the Southeast Asia also (Volz, 2013). ASEAN members contain ten countries that Thailand was only one country that independent state and never colonial under others countries until present (The ASEAN Secretariat, 2013).

The countries in ASEAN's history especially in Southeast Asia countries were colonial era. During the 1500s and 1600s the Western countries – the Great Britain, France, Netherland, and the United States – were spread and able to trade over Asia and diverting the profits from this trade to own country (Cotterell, 2014). As a result, the Western countries had colonized ASEAN countries, for instance, Brunei, Myanmar, Cambodia, Laos PDR, Indonesia, Malaysia, Philippines, Singapore, and Vietnam (Cotterell, 2014). For example, Netherland or Dutch conquered Indonesia. Dutch colonialism falls into two periods until the end of the Second World War (Cotterell, 2014; Wihardja & Negara, 2015). In 1949, the Indonesians gained their

independence with the assistance of the United Nations, which served as a mediator between the Indonesians and the Dutch (Swastika, 2013; Wihardja & Negara, 2015).

For Malaysia and Singapore were conquered by the Great Britain since 1824. Malaysia is Malacca and Singapore is Penang (acquired in 1786), Singapore (founded by Raffles in 1819), and Malacca (Melaka, acquired in 1824), were governed by Britain as the Straits Settlements. The Straits Settlements served as a base for British expansion into the Malay Peninsula between 1874 and 1914. When the Malay States entered into negotiations for their independence--achieved in 1957-- However, Singapore was asked to withdraw from the federation in1965. Singapore has been an independent city-state since that date (Cotterell, 2014). Sarawak and Sabah which joined Malaysia in 1963 continue to remain members of the federation (Cotterell, 2014; Wihardja & Negara, 2015).

Next, Philippines are conquered by the United States. The U.S. moved into the Philippines as a result of the peace settlement with Spain in 1898. The Filipinos were granted a Commonwealth (internal autonomy) government in 1935 and their independence in 1946. Finally, Vietnam is conquered by France. France moved into Vietnam in 1858, capturing Saigon in 1859. Using the south, then called Cochin China, as a base the French moved west and north completing the conquest of Indochina by 1907. Finally, the Vietnamese obtained their independence at the Geneva Conference in 1954 (Cotterell, 2014; Wihardja & Negara, 2015). Post-colonial era of each ASEAN countries is shown as table 2.1.

Table 2.1 Colonialism of Southeast Asia (Cotterell, 2014)

No.	Colonialism	Colonized countries	Period
1.	The Great Britain	Malaysia,	1786 – 1963
		Singapore	1819 – 1965
2.	Dutch/Netherland	Indonesia	1825 – 1949
3.	France	Vietnam	1859 – 1954
4.	The U.S.	Philippines	1898 – 1964

Thailand is an independent state and has never been colonized by other countries until present.

Overall, the effect post-colonial era of each Southeast Asia country is displayed in many ways such as culture, lifestyle, language, and so on. For example, the British colonial influence as the training of accountants, the organization of the accounting profession, the law regulating companies, disclosure standards, and so on (Muniandy & Ali, 2012).

Furthermore, the UK exported its culture, including language, economic, legal and educational systems, to its colonies, thus bequeathing them (for better or for worse) similar institutional environments. As a result, many former British colonies have found IFRSs to be largely or partially relevant to their national needs (Muniandy & Ali, 2012; Tyrrall et al., 2007). They consider the colonial background of a country as a key explanatory variable that has to be explicitly incorporated into any model that tests the relationship between culture and financial reporting frameworks (Muniandy & Ali, 2012).

Moreover, Nobes (1998) classified the financial reporting system depending on developed western countries as shown at Figure4. In terms *micro-based* and *macro-uniform* explain the Anglo-Saxon and Continental European Models, respectively. Each of these classes is divided into two subclasses in order to families and species. For the micro-based class which includes a subclass influenced by business economics theory (Doupnik & Perera, 2007; Hoyle et al., 2011). The Netherlands is the only one country in this subclass. The other micro-based subclass, of British origin, is divided two families, one dominated by the United Kingdom and another dominated by the United States (Doupnik & Perera, 2007).

In another side of class, the macro-uniform is split two subclasses; a “government, economics” and the “continental: government, tax, legal”. However, within “government, economics” subclass has only one country, Sweden. Swedish accounting distinguishes itself from the other macro-uniform countries in being closely aligned with national economic policies. For the “continental: government, tax, legal” subclass is spliced into two families; 1) the law-based family composes Germany and Japan, 2) The tax-based family includes of several Romance-language countries. Therefore this is an importance of hierarchical model which shows the comparative between countries and could be used as a blueprint for determining where financial statement comparability is likely to be greater (Doupnik & Perera, 2007; Hoyle et al., 2011).

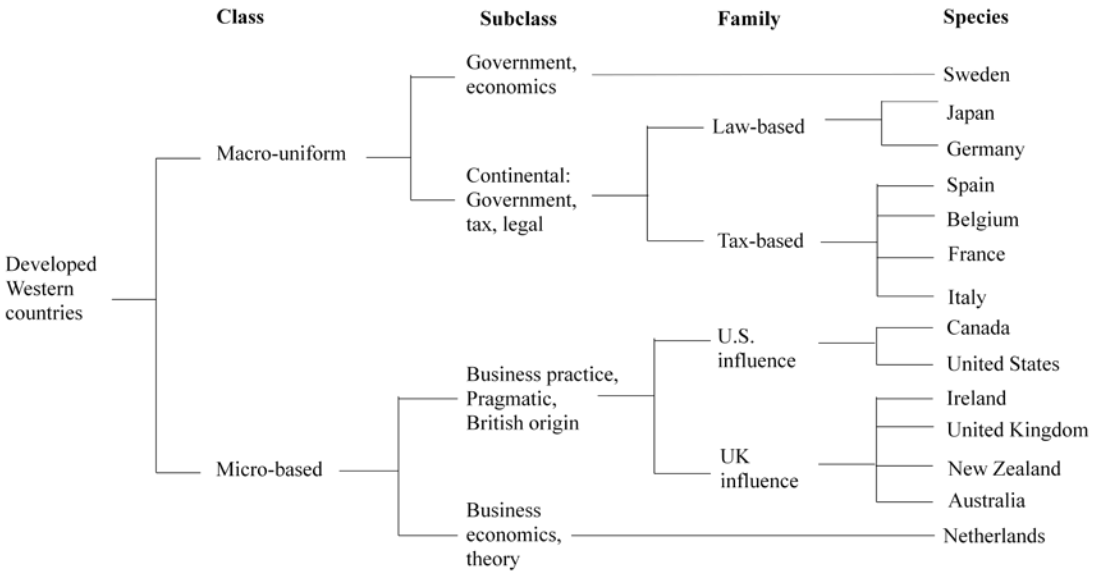

Figure 2.4 A judgmental international classifications of financial reporting practices (Doupnik & Perera, 2007)

From Figure 2.4, this pointed out the class of Western accounting development that showed the species accounting classification of Western country. Therefore, the class of Western accounting development can be implying that colonialism is one factor influencing accounting statement including earnings management strategies. The colonial era is one important of accounting diversity effect toward earnings management strategies for ASEAN countries (Kittiakrastein, 2013). From the relationship between post-colonial factors belonging accounting diversity and earnings management can be imply to hypothesis as below:

Hypothesis 1a*: There is a positive association between the post-colonial era and the magnitude of accrual earnings management in six ASEAN countries.*

Hypothesis 1b*: There is a positive association between the post-colonial era and the magnitude of real earnings management in six ASEAN countries.*

2.2.2 Culture

Culture is a one mainly factor that influences on an accounting standard and practice, especially, in ASEAN countries that have different culture characteristic from the Western even many ASEAN countries had colonized (Cotterell, 2014). For culture, Hofstede is a researcher who interested in a personality and characteristic of people that based on culture, so he collected data from 40 nations of 117,000 IBM employees between 1967 and 1969 and published since 1980 (Hofstede & McCrae,

2004). Additionally, the Hofstede's culture dimension is divided to four type cultural dimensions such as Individualism (individualism VS collectivism), Power distance (large VS small), Uncertainty avoidance (strong VS weak) and Masculinity (masculinity VS femininity) since 1980 (Hofstede & McCrae, 2004).

Otherwise, the researcher in Hong Kong add a fifth dimension of Hofstede's culture, which is a long-term orientation (long-term VS short term) in the original paradigm. In 2010, Hofstede added a sixth dimension, indulgence (indulgence VS restraint) (Hofstede et al., 2010). In addition to, many researchers finding the necessaries of culture that affect to social, psychology, and business, so Hofstede's culture knowledge is studied worldwide. From the Hofstede's culture data found that in six ASEAN countries has a score as table 2.2.

Table 2.2 Culture value of six ASEAN countries

IDV is individualism value. PDI is power distance value. MAS is masculinity value. UAI is uncertainty avoidance value. LTO is long-term orientation value. IND is indulgence value.

No.	Countries	Country Code	N	IDV	PDI	MAS	UAI	LTO	IND
1	Indonesia	ID	509	0.14	0.78	0.46	0.48	0.62	0.38
2	Malaysia	MY	931	0.26	1.00	0.50	0.36	0.41	0.57
3	Philippine	PH	248	0.32	0.94	0.64	0.44	0.27	0.42
4	Singapore	SG	760	0.20	0.74	0.48	0.08	0.72	0.46
5	Thailand	TH	684	0.20	0.64	0.34	0.64	0.32	0.45
6	Vietnam	VN	819	0.20	0.70	0.40	0.30	0.57	0.35
	Total		3,951						

Remark: Culture values are divided by 100.

Furthermore, many researchers found culture impact effect on accounting standard. For example, Pacheco Paredes and Wheatley (2017) found a negative relation between REM and masculinity (MAS), and uncertainty avoidance (UAI) while a positively associate between REM and individualism (IND), and power distance (PDI). For Gray, et al., (2015) found that culture factor influencing in different magnitude of earnings management behavior in 14 countries of the European

Union during period 2000-2010. Similarly with Pacheco Paredes and Wheatley (2017), Gray et al. (2015) found the positive significantly relationship between the individualism (IND) and earnings management. Gray et al. (2015) also found negative relationship between the uncertainty avoidance (UAI) and earnings management. Additionally, Zhang, Liang and Sun (2013) claimed that culture effect, especially, individualism and collectivism (IND) effect to earnings management. Not only culture affects to earnings management but legal rules and law enforcement are also influencing to earnings management of different 41 countries and regions. Therefore, this study will confirm that national culture significantly influences manager's decision to report their earnings. From the relationship between factor belonging culture as an accounting diversity and earnings management can be imply to hypothesis as below:

> ***Hypothesis 2a****: There is a positive association between the individualism value (IND) and the magnitude of accrual earnings management in six ASEAN countries.*
>
> ***Hypothesis 2b****: There is a negative association between the uncertainty avoidance value (UAI) and the magnitude of accrual earnings management in six ASEAN countries.*
>
> ***Hypothesis 2c****: There is a positive association between the individualism value (IND) and the magnitude of real earnings management in six ASEAN countries.*
>
> ***Hypothesis 2d****: There is a negative association between the uncertainty avoidance value (UAI) and the magnitude of real earnings management in six ASEAN countries.*

2.2.3 Legal system

For developing of the institutional theory on accounting relate with legal system because in long-term of companies have to survival with the great power and institutional legitimacy (Frias-Aceituno et al., 2013). However, La Porta et al. (1997), display legal systems which compare the common law and civil law systems applied in different countries, and the efficiency and effectiveness of mechanisms used to ensure compliance with the recommendations made and the regulations in force. The civil law legal system is more stakeholder-oriented than common law, and several studies have shown civil law in various countries to be more sensitive to the interests

of stakeholders (Frias-Aceituno et al., 2013). Thus, firms are accorded legal status by the society in which they operate and in turn are expected to fulfil certain social responsibilities.

Furthermore, the characteristic of organization in each country is different even the legal system is similarly. The role of disclosure in contracting is minimal because the legal mechanisms become more important. In contrast, corporate transparency can serve as a substitute for absent or weak country-level institutions that constrain the behavior of contracting parties (La Porta et al., 1997). Otherwise, organizations of each country depend on post-colonial era, which affect to legal system (Prasad, 2003) and also to consider the earnings management making a decision for sales asset (Wang, et al., 2010). This paper considers the legal system as institutional theory. Enforcement and disclosure indices of each ASEAN countries are shown as table 2.3.

Table 2.3 The enforcement index and disclosure index of six ASEAN countries
DISC is disclosure requirement index. ENFORC is enforcement index.

No.	**Countries**	**Country Code**	**N**	Enforcement Index	Disclosure Index
1	Indonesia	ID	509	0.62	0.52
2	Malaysia	MY	931	0.77	0.98
3	Philippine	PH	248	0.83	0.83
4	Singapore	SG	760	0.87	1.00
5	Thailand	TH	684	0.72	0.92
6	Vietnam	VN	819	NA	NA
	Total		3,951		

Additionally, Hooghiemstra et al. (2015) pointed out the period 2005 to 2007 of 1,559 firms from 29 countries the result found that the national culture affects to disclosures. Han et al. (2010) display a managers exercise earnings discretion relate with institutional features as legal environment, institution infrastructure. Gray et al. (2015) found the negative significantly relationship between the disclosure regulation index and earnings management. Gray et al. (2015) also found negative relationship between the enforcement index and earnings management. This study will confirm that national culture significantly influences manager’s decision to report their

earnings. From the relationship between institutional factors belonging accounting diversity and earnings management can be imply to hypothesis as below:

Hypothesis 3a*: There is a negative association between the enforcement index (ENFORC) and the magnitude of accrual earnings management in six ASEAN countries.*

Hypothesis 3b*: There is a negative association between the disclosure regulation index (DISC) and the magnitude of accrual earnings management in six ASEAN countries.*

Hypothesis 3c*: There is a negative association between the enforcement index (ENFORC) and the magnitude of real earnings management in six ASEAN countries.*

Hypothesis 3d*: There is a negative association between the disclosure regulation index (DISC) and the magnitude of real earnings management in six ASEAN countries.*

2.2.4 The Relationship between Accounting Diversity Factors

2.2.4.1 The Influent of Post-colonial Era to the Culture

The effect from Western colonialism can be found in many regions of the world, which is also the Southeast Asia. The effect not only the economic, social lifestyle but including the cultural capital such as organizational and expertise culture that display in tacit and explicit knowledge (Aburous, 2016). Besides the colonial, people life was change, the law and many rules were changed. For example, the training of accountants, the organization of the accounting professional, the law regulating companies, disclosure standards, and the financial reporting practices are express in Malaysia and Singapore after the British colonialist (Kamla, 2007). Additionally, Tyrrall et al. (2007) pointed out the colonial background of each country as an important key to describe a variable that is suitable of any model testing the relationship between culture and financial reporting frameworks. Hence, the colonialism relate with culture and legal system that play as an important role in accounting diversity factor (Du, 2015).

Moreover, Aburous (2016) pointed that post-colonial affects to accounting standard of country through culture and often associated between professional accounting of post-colonial country and a Western constituting cultural capital. Callen

et al. (2011) found that a positively related between uncertainty avoidance and earnings management, in contrast, a religion unrelated with earnings management.

2.2.4.2 The Influent of the Post-colonial Era to the Legal System

In the past, the meaning of a legal system is code law which composes of civil law and common law (Ball et al., 2000). After the Anglo-Saxons English and the colonization from the Western period are gone, many researchers are interested in culture that affect to a legal system and legal enforcement (La Porta et al., 2008). Specifically, previous research shows the relationship between legal system and accounting standard, legal enforcement and protection investors, and so on (Han, et al., 2010; La Porta et al., 2008; Kamal Hassan, 2012). Otherwise, Grey (1988) developed Hofstede's model of cultural dimensions to the international accounting development framework through national level. He display the influencing on accounting objective and standard development concept which provide colonial history in a section of international influences; in addition, Doupnik and Perera (2007) adapted from Grey's framework and arranged a legal system in the institutional consequences. Following the Grey and Doupnik concept, Leuz and Wysocki (2003), La Porta et al. (2008) and Kamal Hassan (2012) studied about institutional system which is a key factor affecting company policy. The institutional system in this case relate with legal enforcement and disclosure index.

So, the legal system or institute level of this research mention on two compositions as a disclosure index and an enforcement index. There are crucial and important for accounting standard when factor as legal system is considered effect to financial statement (Han, et al., 2010; La Porta et al., 2008; Kamal Hassan, 2012). Because a disclosure index is corporate governance information display through a company annual report implementation to ethic of corporate depending management of each country or corruption index (La Porta et al., 2008; Kamal Hassan, 2012). Especially, La Porta (2008) argue that the history of each country's law relate with a legal rules and regulation, it accords with economic outcome. Additionally, the government of each country has legal rule to protect an investor that base on primary corporate and bankruptcy, which can be code and measure. The coding point out some countries is stronger legal protection foreign investor than others (Coffee Jr, 2007; La Porta et al., 2008). For an enforcement index relate with professional protection of a government in each country (Coffee Jr, 2007).

CHAPTER III
CONCEPTUAL FRAMEWORK AND METHODOLOGY

This chapter describes the conceptual framework that is related to the hypotheses based on the research objectives and research questions. This chapter is organized in five sections; first of all, section 3.1 explains the hypothesis development based on the literature review and conceptual development. Next, section 3.2 explained the sample selection. Section 3.3 described the measurement earnings management and section 3.4 revealed the key variables of interest. Finally, section 3.5 is empirical models.

3.1 Hypothesis Development

The literature review leads to hypothesis development that is based on theoretical and conceptual framework development; in addition to, the lack of evidence to investigate both accrual and real earnings management in ASEAN, as previous studies have focused more on developed economic community. Therefore, this research aims to explore both accrual and real earnings management in ASEAN. The conceptual framework is presented in Figure 3.1. Moreover, both accrual and real earnings management is classified into 3 earnings management technique.

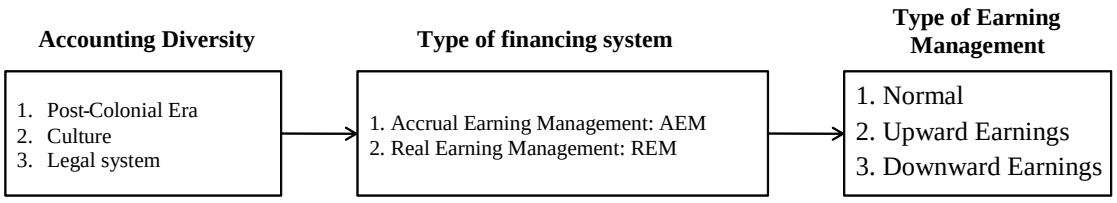

Figure 3.1 The conceptual framework

The differentiation of country's financial statement is called an accounting diversity; however, it was encouraged international harmonization of accounting and was used global standard instead (Joos & Lang, 1994; Woods et al., 2008). Beside the variation of accounting depends on nation, it was studied the factor which effect to accounting diversity (Joos & Lang, 1994; Woods et al., 2008). For example, Mueller (1976) discussed the impact of the environment on the formulation of accounting practices in a country. Conditions that can shape the accounting practices include

culture, economy, society and political system (see also Chand & Patel, 2008). Research has adopted and supported Muller's conceptualization. Consistently, D'Arcy (2001) suggested that environmental factors are related to the accounting system.

Daniels and Radebaugh (1975) proposed that environmental factor affecting the development of accounting in each country. Doupnilk and Salter (1995) proposed the factors affecting the accounting by dividing variable of the culture from Gray whose variables culture divided into four groups plus a variety of six other factors. Research revealed environmental factors affect the development of national accounting, such as culture (Gray, 1988; Doupnik & Salter 1995), the type of legal system (Doupnik & Salter, 1995), the type of political system (Jermakowicz & Rinke, 1996), the type of capital market (Radebaugh & Gray, 1997) and colonial (Yapa, 2004).

For reduction the accounting diversity problem is harmonization the accounting system (Jeno, 2010). The harmonization accounting system was developed for the business practice, especially, it use the harmonized international accounting system leads to a reduction of the information asymmetry between the owners and the managers (Jeno, 2010; Meeks & Swann, 2009). By this information asymmetry are growing the costs of equities and are less accurate the economical and financial forecasts. This requires the development and review of the national accounting rules, the separate validation of the tax and accounting regulation, the repeal of the subordinate role of accounting, issuing international standards with the help of practical and theoretical accounting experts (Jeno, 2010; Meeks& Swann, 2009).

Hence, previous empirical findings seem to suggest that accounting diversity which is an effective in monitoring the accounting standard and on earning management, thus leading us to the following research hypothesis:

Hypothesis: *the ASEAN countries would have different earnings management strategies.*

3.2 Sample Selection

The purpose of this study is to examine earnings management behavior of listed companies in AEC context. This study focuses on earnings management strategy, which measures both accrual and real earnings management in AEC. The main data are collected from Thomson Reuter's database. The research will be confined to the companies listed in the national stock exchange between 1990 and

2014. These listed companies are chosen because their financial information is publicly available.

In this study, the researcher study six countries of AEC, namely Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam. Brunei, Cambodia, Myanmar and Lao are excluded from this study. Because of without stock exchange, Brunei is excluded from this study. Cambodia is excluded because The Cambodia Securities Exchange (CSX) has currently two listed companies on the stock exchange. Lao is excluded because Lao Securities Exchange (LSX) has currently four listed companies on the stock exchange. Myanmar is also excluded because Myanmar Securities Exchange Centre (MSXC) has currently two listed companies on the stock exchange.

According to the conditions mentioned above, 3,951 listed companies are selected as presented in table 3.1. Table 3.1 contains a summary of how the final sample for this study was obtained. Starting with 3,959 firms, 2 firms in CSX, 4 firms in LSX and 2 firms in MSXC are excluded from this study as mentioned above. The final sample consists of 3,951 firms or 99.80 percent of the initial sample.

Table 3.1: Number of listing company is classified by stock exchange.

Countries	Stock Exchanges	Symbol	Founded	Number of	
				listing*	sample
Brunei	None	-	-	0	0
Cambodia	The Cambodia Securities Exchange	CSX	2011	2	0
Laos	Lao Securities Exchange	LSX	2011	4	0
Indonesia	Indonesia Stock Exchange	IDX	1912	509	509
Myanmar	Myanmar Securities Exchange Centre	MSEC	1996	2	0
Malaysia	Bursa Malaysia Berhad	MYX	1964	931	931
Philippine	Philippine Stock Exchange	PSE	1992	248	248
Singapore	Singapore Exchange	SGX	1999	760	760
Thailand	Stock Exchange of Thailand	SET	1974	684	684
Vietnam	Ho Chi Minh City Stock Exchange and Hanoi Stock Exchange	HOSE and HNX	2000 and 2005	819	819
			Total	3,959	3,951

* Number of listed companies as of August 5, 2015.

Source: Thomson Reuter's database.

According to the conditions mentioned above, the final sample consists of 3,951 firm observations in the 6 ASEAN countries from 1990 to 2014. Table 3.1 report the distribution of firm observations by country. The total firm-year observations are 27,696 observations. The first largest observation is Malaysia 7,654 observations (28%). The second and third largest observations are Thailand 5,182 observations (19%) and Singapore 4,951 observations (18%) and followed by Indonesia 4,139 observations (15%), Vietnam 3,935 observations (14%), and Philippine 1,835 observations (7%).

3.3 Earnings Management Proxy

3.3.1 Accrual earnings management

This study adopts a modified Jones model, which is consistent with Kothari et al. (2016), to detect abnormal total accruals as a proxy of accrual earnings management. This study estimates normal accruals by regressing panel data. Following Kothari et al. (2016), these estimation abnormal accruals adjust the firm fixed effects in for specific firms. This equation is adjusted for time fixed effects in this estimation, exploiting the entire time series available for every year for the adjustment. Therefore, the estimation of unbalanced panel takes into account unobservable variations across cross-section and periods by including firm specific and time-period specific dummy variables. In this estimation Period SUR (PCSE) standard errors and covariance are well approximation. Following Kothari et al. (2016), the modified Jones model for measuring abnormal total accruals is as follows:

$$\frac{TA_{it}}{A_{it-1}} = \alpha_{1it} + \alpha_{2it}\left(\frac{1}{A_{it-1}}\right) + \beta_{1it}\left(\frac{\Delta Sales_{it} - \Delta REC_{it}}{A_{it-1}}\right) + \beta_{2it}\left(\frac{PPE_{it}}{A_{it-1}}\right) + \beta_{3it}\left(\frac{NI_{it}}{A_{it-1}}\right) + \varepsilon_{it} \quad (1)$$

where i, and t index firm, and year, respectively. TA_{it} denotes total accruals for firm i in year t. $\Delta Sales_{it}$ denotes a change in net sales for firm i in year t. ΔREC_{it} denotes a change in account receivables for firm i in year t. PPE_{it} denotes net property, plant, and equipment for firm i in year t. NI_{it} denotes net income for firm i in year t. A_{it} denotes total assets for firm i in year t. ε_{it} is an error term and represents the discretionary total accruals or abnormal total accruals (AEM) for firm i in year t.

3.3.2 Real earnings management

This study employs Roychowdhury (2006) to detect abnormal CFO as a proxy of real earnings management. This study estimates normal CFO by regressing panel data. According to Kothari et al. (2016), this estimation abnormal CFO adjusts the firm fixed effects in for specific firms. This equation for time fixed effects in the estimation, exploiting the entire time series available for every year for the adjustment. Therefore, this estimation of unbalanced panel takes into account unobservable variations across cross-section and periods by including firm specific and time-period specific dummy variables. In this estimation Period SUR (PCSE) standard errors and covariance are well approximation. Following Roychowdhury (2006), the Roychowdhury model for measuring abnormal CFO is as follows:

$$\frac{CFO_{it}}{A_{it-1}} = \alpha_{0it} + \alpha_{1it}\left(\frac{1}{A_{it-1}}\right) + \beta_{1it}\left(\frac{SALE_{it}}{A_{it-1}}\right) + \beta_{2it}\left(\frac{\Delta SALE_{it}}{A_{it-1}}\right) + \varepsilon_{it} \quad (2)$$

where *i*, and *t* index firm, and year, respectively. CFO_{it} denotes cash flows from operation for firm *i* in year *t*. $Sales_{it}$ denotes net sales for firm i in year t. $\Delta Sales_{it}$ denotes a change in net sales for firm i in year t. A_{it} denotes total assets for firm i in year t. ε_{it} is an error term and represents the abnormal CFO (REM) for firm i in year t.

3.3.3 Quadrants Earnings Management (QEM)

3.3.3.1 Random Matrix Theory (RMT)

Random matrix theory (RMT) is a numerical analyst, which is a potential empirical to understand and transfer from original to modern mathematic (Edelman & Rao, 2005). The RMT is applied in many disciplinary as science potential empirical to understand the relation between correlation matrices and financial time series data (Laloux et al., 2000). Otherwise, the RMT is developed in the course of analyzing super large data collections in the course of neuron collisions. The two perspectives of correlation constructs, which are Gaussian Orthogonal Ensemble (GOE) and Gaussian Unitary Ensemble (GUE), fix for commonly most types of random correlation matrices. In an experiment, GOE is used to test out the US market correlation situation and detect a stereotype in correlation matrices' key characteristics (Eigen values) (Plerou et al., 2002). The central observation is the agreement between the theoretical prediction and empirical data that concern about the density of Eigen values and the Eigen vectors of the correlation matrices in several stock markets.

Additionally, the RMT is being deployed as a new multivariate statistical tool to address high dimensionality issue through the establishment of empirical correlation matrices and Wishart distribution (Laloux et al., 2000; Plerou et al., 2002). Thus, RMT is an approximation approach in information theory. It is designed to model behaviors of matrices having billions × billions in dimensions way beyond the capability of computing machine (Garnier, 2011).

3.3.3.2 Quadrant Classification Technique and Earnings Management Strategy

Quadrant classification technique is proposed as a tool to classify type of earnings management. Specifically, concept of this model is deposition a density of data within fully developed turbulent boundary layers that adds insight and improving the deposition prediction of heavy particles encountered in a wide range of industrial and environmental applications (Jin et al., 2015). From this model is applied for allocation the earnings management data in terms of real and accrual-based earnings management. In addition to, creativity quadrant tool based on random matrix theory that approaches the high-dimension of real and accrual-based earnings management (Wise, 2003).

Earnings management strategy would be classification on quadrants earnings management. Likitwongkajon & Sutthachai (2015) classified the firms into four partitions by theirs abnormal accruals (AEM) and abnormal CFO (REM). Consistent with Kothari et al. (2016), the benefit of partitioning firms is to segregate firms by their earnings management technique. Quadrant earnings management is used to set the earnings management strategies. The axes of two earnings management proxies divide the area into four partitions, called quadrants, each bounded by two half-axes. The x-axis represents the value of accrual earnings management, AEM, and the y-axis represents the value of real earnings management, REM.

The relation between quadrant earnings management and earnings management strategies are presented in Figure 1. The upper right-hand part is the first quadrant; the upper left-hand part is the second quadrant; the lower left-hand part is the third quadrant; and the lower right-hand part is the fourth quadrant. Each quadrant is measured 90 degrees of arc. Quadrant I range from 0 degree to 90 degrees, Quadrant II ranges from 90 degrees to 180 degrees, Quadrant III ranges from 180 degrees to 270 degrees, and lastly, Quadrant IV ranges from 270 degrees to 360 degrees. These

quadrants are numbered from first to fourth and the firms remains in quadrant I, II, III, and IV where the signs of the AEM and REM is (+,+), (−,−), and (+,−), respectively.

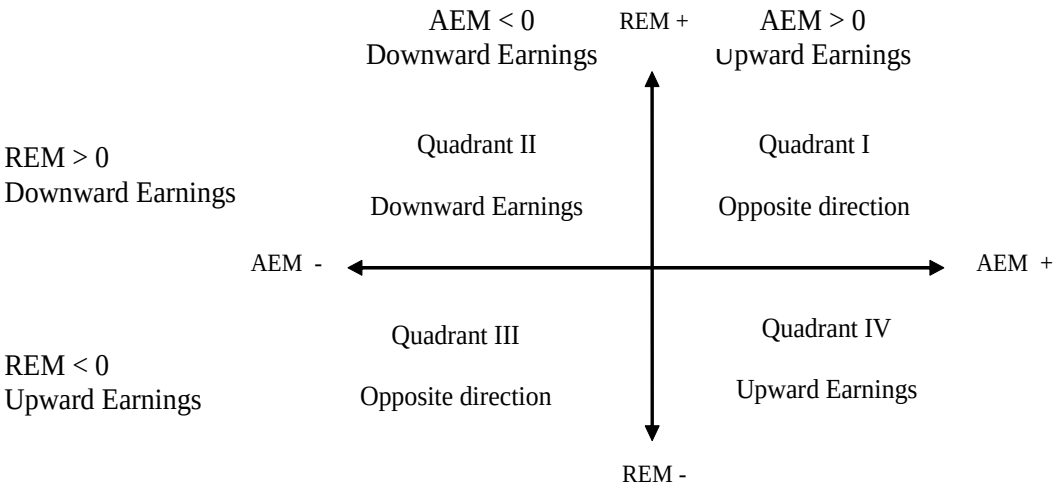

Figure 3.2 Quadrants earnings management

Consistent with Kothari et al. (2016), firms in quadrant II are classified as downward earnings strategy. It includes firms that are likely to use both accrual and real earnings management simultaneously to understate earnings. Conversely, upward earnings strategy is the group of firms in quadrant IV. It includes firms that are likely to use both accrual and real earnings management simultaneously to overstate earnings. Firms in quadrant I are likely to overstate earnings via real earnings management and to understate earnings via accrual earnings management. Conversely, Firms in quadrant III are likely to use accrual earnings management to understate earnings and to use real earnings management to overstate earnings.

3.4 Key Variables of Interest

3.4.1 Post-colonial era

As described in section 2, the countries in ASEAN's history were colonial era. Form table 1, the countries that had colonized ASEAN countries include Netherland (conquered Indonesia), the Great Britain (conquered Malaysia and Singapore), the U.S. (conquered Philippine), France (conquered Vietnam). Thailand is only one country that independent state and never colonial under others. We use a dummy variable of post-colonial era (COL), a dummy variable takes the value of 1 if the

country was conquered and 0 otherwise including; COL_UK equal 1 if the country was conquered by the Great Britain; COL_US equal 1 if the country was conquered by the United States; COL_NL equal 1 if the if the country was conquered by Netherland; and COL_FR equal 1 if the country was conquered by France. We expect the post-colonial era is associated with earnings management.

3.4.2 Culture

Consistent with prior studies (see e.g., Gray et al., 2015; Astami et al., 2017; Pacheco Paredes & Wheatley, 2017; Han et al., 2010), we use a culture value from Hofstede et al. (2010), as measured the national value of culture. Culture value from Hofstede et al. (2010) includes 6 dimensions; individualism (IDV), power distance (PDI), masculinity (MAS), uncertainty avoidance (UAI), long-term orientation (LTO), indulgence (IND). Culture values are divided by 100. We expect the national culture is associated with earnings management. Following Gray et al. (2015), the main interesting culture dimensions are individualism (IDV) and uncertainty avoidance (UAI).

3.4.3 Legal System

Consistent with prior studies (see e.g., Gray et al., 2015), we use national enforcement index and national disclosure requirement index from La Porta et al. (2008), as measured the national value of legal. Enforcement index (ENFORC) is developed by La Porta et al. (2008) to measure national legal enforcement levels which calculating the mean score across three legal variables; (1) the efficiency of the judicial system (2) an assessment of rule of law, and (3) the corruption index. Disclosure requirement index (DISC) is developed by La Porta et al. (2008) to measure national mandatory disclosure levels. We expect the national legal is associated with earnings management.

3.4.4 Control variables

Consistent with prior studies (see e.g., Gray et al., 2015; Astami et al., 2017; Pacheco Paredes & Wheatley, 2017; Han et al., 2010), we include a large set of firm-specific characteristics that may affect the level of earnings management as control variables. Based on the political cost hypothesis (Watts & Zimmerman, 1990), the firm size is related to the internal control system for reducing managers' incentives to

manipulate reported earnings. A large firm tends to have a high proportion of outside ownership and also tends to have a separation between ownership and management. This type of firm needs control systems to supervise management performance. Therefore, an association between firm size and the level of earnings management is negative. Firm size (SIZE), which is computed as the natural logarithm of real total assets (in millions USD), is used to control for the size effect due to, e.g., high internal control. Larger firms tend to have high quality of internal control that has been control to limit the level of earnings management. Several studies document the negative effects of firm size on accrual earnings management (see e.g., Gray et al., 2015; Han et al., 2010; Swastika, 2013; Sun & Rath, 2009), while some studies report the no of firm size on accrual earnings management (e.g., Astami et al., 2017), while some studies report the positive effect of firm size on real earnings management (e.g., Pacheco Paredes & Wheatley, 2017).

Based on the agency theory (Jensen & Meckling, 1976), firm leverage is considered to be a determinant of companies with a high value of debt that tends to have earnings management. As a result of the agency costs, management is motivated to manage earnings for debt covenant purposes. According to the positive accounting theory (Watts & Zimmerman, 1978), debtors and management of the highly leveraged firm tend to have high agency cost. Therefore, management has more incentives to manipulate reported earnings upwards in order to deceive their debt holders. Watts and Zimmerman (1990) stated that highly leveraged firms are more likely to engage in earnings management upwards to avoid violating debt covenants. Therefore, an association between firm leverage and the level of earnings management is positive. We use financial leverage (LEV), which is measured as the ratio of total debt to total assets, to control for the influence of capital structure on earnings management. Several studies document the positive effects of firm leverage on real earnings management (see e.g., Pacheco Paredes & Wheatley, 2017; Klein, 2002; Usman & Yero, 2012), while some studies report the no impact of firm leverage on accrual earnings management (e.g., Astami et al., 2017). While some studies report the negative effect of firm leverage on accrual earnings management (see e.g., Gray et al., 2015; Han et al., 2010; DeFond & Jiambalvo, 1994), DeFond and Jiambalvo (1994) document that highly leveraged firms receive more monitoring from debt-holders and thus may reduce the level of earnings management.

To avoid violating debt covenants, firms that have large proportion of current liabilities to current asset, they should to manage accounting data to maintain their current liabilities in line of short term debt covenants, thereby providing earnings management to maintain their liquidity goal. We use the current ratio (CUR), which is measured as the ratio of current assets to current liabilities, to control for the effect of liquidity on earnings management. Firms with liquidity pressure are expected to manage earnings than firms with high liquidity. Firms with larger current ratio are likely to have a lower degree of earnings management than other; therefore, the current ratio is likely to be associated with earnings management.

Previous research found that earnings management is affected by profitability. According to Doukakis (2013), firm profitability has significant positive impacts on earnings management. Recently, Pacheco Paredes and Wheatley (2017) also documented that increase in a firm's profitability is positively associated with earnings management. Consistent with the literature (e.g., Pacheco Paredes & Wheatley, 2017; Doukakis, 2013), we use return on assets (ROA), measured as the ratio of net income to total assets, as a proxy for firm performance. We expect firms that have large return on asset take into account their ability to maintain their return in the future, thereby providing earnings management to maintain their earnings goal.

Consistent with the literature (e.g., Doukakis, 2013; Gray et al., 2015), previous research found that earnings management is affected by firm growth. As a mixed result, the effect of firm growth on earnings management can be positive or negative. For example, Doukakis (2013) documented that increase in a firm's growth and profitability is significant positively associated with earnings management. A recent study, Gray et al. (2015) show that the firm growth has significant negative impacts on earnings management. In this study, the annual percentage change in total revenue is used as the proxy for firm growth (Growth).

Regarding the signaling theory, companies tend to avoid signaling their negative performance to an investor because the message can lead the investor to have a negative attitude towards the company's corporate financial position, with the result that the cost of capital increases (Ross, 1977). Executives manage earnings upwards to avoid or achieve a specified benchmark, such as negative earnings, previous earnings, tiny income or loss, budget, and analyst expectation (Burgstahler & Dichev, 1997). Burgstahler and Dichev (1997) present empirical evidence that U.S. management uses accounting discretion to avoid reporting small losses. Avoiding

reporting small losses is more likely to be done within the bounds of reporting discretion. The management's effort to avoid losses implies that the number of small profits should be larger than the number of small losses (Burgstahler & Dichev, 1997). Consistent with the literature (e.g., Pacheco Paredes & Wheatley, 2017), we use a dummy variable of loss (LOSS); dummy variable takes the value of 1 indicating whether a firm have negative earnings. We expect firm with negative earnings are positively associated with earnings management.

Consistent with the literature (e.g., Gray et al., 2015), We use a dummy variable of shareholder (ISSUE), a dummy variable takes the value of 1 if the firms have total issuance of equity is larger than 10% of year-begin total equity in year t for firm i and 0 otherwise. We expect firm with negative earnings are positively associated with earnings management.

Industry dummies are added to control for the potential industry specific effects on earnings management (Yang et al., 2008). Therefore, this study includes this variable in the model to control for the effect of each industry on earnings management. In this study, the vector of industry dummies is used as the proxy of industry type.

3.5 Empirical Models

To test the effect of post-colonial era on accrual (real) earnings management (Hypothesis 1), the independent variable is the dummy of post-colonial era and the dependent variables are absolute value of abnormal total accruals and absolute value of abnormal cash flows from operating. Consistent with Gray et al. (2015), the control variables for the level of earnings management were estimated by the following model:

$$\begin{aligned}\text{Abs\_AEM}_{it} = {} & \alpha_0 + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \beta_3 ROA_{it} + \beta_4 Growth_{it} + \beta_5 CUR_{it} \\ & + \beta_6 LOSS_{it} + \beta_7 ISSUE_{it} + \beta_8 Abs\_REM_{it} + \beta_9 Col\_UK_{it} \\ & + \beta_{10} Col\_US_{it} + \beta_{11} Col\_NL_{it} + \beta_{12} Col\_FR_{it} + \epsilon_{it}\end{aligned} \quad (3)$$

$$\begin{aligned}\text{Abs\_REM}_{it} = {} & \alpha_0 + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \beta_3 ROA_{it} + \beta_4 Growth_{it} + \beta_5 CUR_{it} \\ & + \beta_6 LOSS_{it} + \beta_7 ISSUE_{it} + \beta_8 Abs\_AEM_{it} + \beta_9 Col\_UK_{it} \\ & + \beta_{10} Col\_US_{it} + \beta_{11} Col\_NL_{it} + \beta_{12} Col\_FR_{it} + \epsilon_{it}\end{aligned} \quad (4)$$

The variables definitions are presented in Table 3.2. Abs_AEM stands for accrual earnings management, which is a measure of the magnitude of accrual earnings management and earnings quality. Abs_REM stands for real earnings

management, which is a measure of the magnitude of real earnings management. The variables of interest are IDV (individualism), UAI (uncertainty avoidance), DISC (disclosure requirement index) and ENFORC (enforcement index). DISC is the disclosure requirement index developed by La Porta et al. (2008) to measure national mandatory disclosure levels.

To test the effect of legal and culture on earnings management (Hypothesis 2, 3), the first is independent variable is national culture which measured as the value of individualism and uncertainty avoidance. The second independent variable is national legal which measured as the enforcement index and disclosure regulation index. The dependent variables are absolute value of abnormal total accruals and absolute value of abnormal cash flows from operating. Consistent with Gray et al. (2015), the control variables for the level of earnings management were estimated by the following model:

$$\begin{aligned}\text{Abs\_AEM}_{it} = {} & \alpha_0 + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \beta_3 ROA_{it} + \beta_4 Growth_{it} + \beta_5 CUR_{it} \\ & + \beta_6 LOSS_{it} + \beta_7 ISSUE_{it} + \beta_8 Abs\_REM_{it} + \beta_9 ENFORC_{it} \\ & + \beta_{10} DISC_{it} + \beta_{11} IDV_{it} + \beta_{12} UAI_{it} + \epsilon_{it}\end{aligned} \tag{5}$$

$$\begin{aligned}\text{Abs\_REM}_{it} = {} & \alpha_0 + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \beta_3 ROA_{it} + \beta_4 Growth_{it} + \beta_5 CUR_{it} \\ & + \beta_6 LOSS_{it} + \beta_7 ISSUE_{it} + \beta_8 Abs\_AEM_{it} + \beta_9 Col\_UK_{it} \\ & + \beta_{10} Col\_US_{it} + \beta_{11} Col\_NL_{it} + \beta_{12} Col\_FR_{it} + \epsilon_{it}\end{aligned} \tag{6}$$

Since post-colonial era are highly influent to legal and also the national culture as described in Chapter 2, so the post-colonial era will not include in the same regression analysis in order to mitigate the issue of multicollinearity.

Table 3.2 Variable Definitions and Measurement

Variable	Definition and measurement
Abs_AEM_{it}	is the absolute value of abnormal total accruals in year t for firm i.
Abs_REM_{it}	is the absolute value of abnormal CFO in year t for firm i.
IDV	is individualism value of one country from Hofstede et al. (2010).
PDI	is power distance value of one country from Hofstede et al. (2010).
MAS	is masculinity value of one country from Hofstede et al. (2010).
UAI	is uncertainty avoidance value of one country from Hofstede et al. (2010).
LTO	is long-term orientation value of one country from Hofstede et al. (2010).
IND	is indulgence value of one country from Hofstede et al. (2010).
ENFORC	is enforcement index of one country from La Porta et al. (2008).
DISC	is disclosure requirement index of one country from La Porta et al. (2008).
COL_UK	is a dummy variable takes the value of 1 if the country was conquered by the Great Britain and 0 otherwise.
COL_US	is a dummy variable takes the value of 1 if the country was conquered by the United States and 0 otherwise.
COL_NL	is a dummy variable takes the value of 1 if the country was conquered by Netherland and 0 otherwise.
COL_FR	is a dummy variable takes the value of 1 if the country was conquered by France and 0 otherwise.
$SIZE_{it}$	is the nature logarithm of the total assets in year t for firm i.
CUR_{it}	is current assets to current liabilities in year t for firm i.
LEV_{it}	is total debt to total assets in year t for firm i.
ROA_{it}	is net income to total assets in year t for firm i.
$Growth_{it}$	is the annual percentage change in total revenue in year t for firm i.
$ISSUE_{it}$	is a dummy variable takes the value of 1 if the firms have total issuance of equity is larger than 10% of year-begin total equity in year t for firm i and 0 otherwise
$LOSS_{it}$	is a dummy variable takes the value of 1 if the firms have negative earnings in year t for firm i and 0 otherwise
i,t	i is firm index, t is year index.

CHAPTER IV
EARNINGS MANAGEMENT IN ASEAN

This chapter describes the research results that organized in four sections. First, section 4.1 describes the descriptive statistics of firm characteristics. Section 4.2 describes the descriptive statistics of firm earning management behavior. Next, section 4.3 explained the firm earnings management classification. Finally, Section 4.4 described the earnings management classification by industry.

4.1 Firm Characteristics

From Table 4.1 the mean (median) of total assets (A) was 4.609 (0.073) million dollar. The range of distribution was also wide with a 5 percentile of 0.006 million dollar to a 95 percentile of 2.677 million dollar. Similar to total assets, the mean (median) of total sales (Sales) was 1.677 (0.043) million dollar with a 5 percentile of 0.002 million dollar and a 95 percentile of 1.122 million dollar. The selected firms have differences in size and total sales.

Table 4.1 Descriptive statistics on the firm characteristics

	Obs.	Mean	Standard Error of Mean	Percen-tile 05	Median	Percen-tile 95
Asset ($US)	43,642	4,608,746	897,072	5,613	73,019	2,676,571
Sale ($US)	44,049	1,676,536	297,552	1,546	43,395	1,122,351
Marketcap ($US)	40,582	473,021	31,692	991	26,484	1,566,982
Free float (%)	25,485	61.60	0.18	17.00	58.00	100.00
ROA (%)	40,403	6.70	1.40	-11.40	5.29	20.58
ROE (%)	39,289	5.46	0.83	-30.54	8.90	38.02
Debt ratio (%)	38,415	32.20	1.70	0.55	23.16	66.14
PE ratio (time)	29,934	89.10	24.34	2.60	11.30	65.70

Obs. was the firm year observations; Asset was total assets (US dollar); Sale was total sales (US dollar); Marketcap was market capital of firm (US dollar); Free float was the percentage of shares held by free-floating (%); ROA was return on assets (%); ROE was return on equity (%); Debt ratio was leverage ratio (%); and PE ratio was price to earnings ratio (time).

The distribution of return on assets (ROA) was also found to be wide across firms with a 5 percentile of -11.40%, a 95 percentile of 20.58%, and the mean (median) was 6.70% (5.29%). Similarly, the distribution of return on equity (ROE) was also found to be wide across firms with a 5 percentile of -30.5%, a 95 percentile of 38.02%, and the mean (median) was 5.46% (8.90%).

The mean (median) of total market capital of the firm (Marketcap) was 0.473 (0.026) million dollar with a 5 percentile of 0.001 million dollar and a 95 percentile of 1.567 million dollar. Similarly, the distribution of price to earnings ratio (PE) was also found to be wide across firms with a 5 percentile of 2.6 time, a 95 percentile of 65.70 time, and the mean (median) was 89.10 time(11.30 time).

The mean (median) of leverage ratio (Debt) was 32.20% (23.16%) with a 5 percentile of 0.55% and a 95 percentile of 66.14%. The mean (median) of the percentage of shares held by free-floating (Free) was 61.60% (58.00%) and the distribution was also found to be wide across firms with a 5 percentile of 17.00% and a 95 percentile of 100.00%.

4.2 Earnings Management

4.2.1 Accruals Earnings Management

This study estimates normal accruals by regressing panel data. Following Kothari et al. (2016), these estimation abnormal accruals adjust the firm fixed effects in for specific firms. I adjust for time fixed effects in my estimation, exploiting the entire time series available for every year for the adjustment. Therefore my estimation of unbalanced panel takes into account unobservable variations across cross-section and periods by including firm specific and time-period specific dummy variables. In my estimation Period SUR (PCSE) standard errors and covariance are well approximation.

Table 4.2 provides descriptive statistics on the average values of the accrual earnings management. AEM values were computed from the residual of each regression model. The magnitude of this residual indicates the level of earnings management. The higher the value of the residual, the more the firm engages in earnings management. The sign of these residual indicates whether the firm has managed earnings upwards or downwards. The positive sign means that the firm has

upward earnings management; on the other hand the negative sign means that the firm has downward earnings management.

The mean (median) of abnormal total accruals (AEM) was 0.0000 (-0.0038). The signs of abnormal total accruals suggest that on average the companies are likely to employ abnormal total accruals for downward earnings. The abnormal total accruals have a broad range of data distribution with -0.2290 and 0.2417.

Table 4.2 Descriptive statistics on the accrual earnings management

	Obs.	Mean	Standard Error of Mean	Percen-tile 05	Median	Percen-tile 95
AEM	29,026	.000000	.000961	-.229002	-.003802	.241671
Abs_AEM	29,026	.101377	.000754	.003932	.060042	.350322

Obs. was the firm year observations; AEM was accrual earnings management; and Abs_AEM was absolute accrual earnings management.

4.2.2 Real Earnings Management

This study estimates normal CFO by regressing panel data. Following Roychowdhury (2006), this estimation abnormal CFO adjusts the firm fixed effects in for specific firms. I adjust for time fixed effects in my estimation, exploiting the entire time series available for every year for the adjustment. Therefore my estimation of unbalanced panel takes into account unobservable variations across cross-section and periods by including firm specific and time-period specific dummy variables. In my estimation Period SUR (PCSE) standard errors and covariance are well approximation.

Table 4.3 provides descriptive statistics on the average values of the real earnings management. REM values were computed from the residual of each regression model. The magnitude of these residual indicates the level of earnings management. The higher the value of the residual, the more the firm engages in earnings management. The sign of these residual indicates whether the firm has managed earnings upwards or downwards. In contrast to AEM, the positive sign of REM means that the firm has downward earnings management whilst the negative sign of REM means that the firm has upward earnings management.

The mean (median) of abnormal CFO (REM) was 0.0000 (0.0001). The signs of abnormal CFO suggest that on average the companies are likely to employ abnormal CFO for downward earnings. The abnormal CFO has a broad range of data distribution with -0.1726 and a maximum of 0.1730.

Table 4.3 Descriptive statistics on the real earnings management

	Obs.	Mean	Standard Error of Mean	Percen-tile 05	Median	Percen-tile 95
REM	39,305	.000000	.000588	-.172572	.000149	.172965
Abs_REM	39,305	.075135	.000450	.003726	.046376	.246493

Obs. was the firm year observations; REM was real earnings management; and Abs_REM was absolute real earnings management.

4.3 Earnings Management Classification

Consistent with prior research, the correlation between abnormal accruals (AEM) and abnormal CFO (REM) is significantly negative (-0.229). This correlation can be explained by the firms engaging in accrual earnings management and real earnings management via the timing of sales for the same earnings direction. This result shows that the firms use two earnings management mechanisms to fulfill their earnings management objective. Managers use a mix of accrual and real earnings management mechanisms to follow their overall earnings management goal.

Scatter diagrams are used to show both the accrual and real earnings management. The AEM is on the horizontal axis whilst the REM is on the vertical axis. Each point presents accrual and real earnings managements of firm. Figure 3 shows the scatter plots of earnings management strategy. Mostly firms are concentrated near the point of origin (AEM=0, REM=0), which suggests that most companies has a low level of earnings management. The results from Figure 4.1 inspect to earnings management strategy for six ASEAN countries.

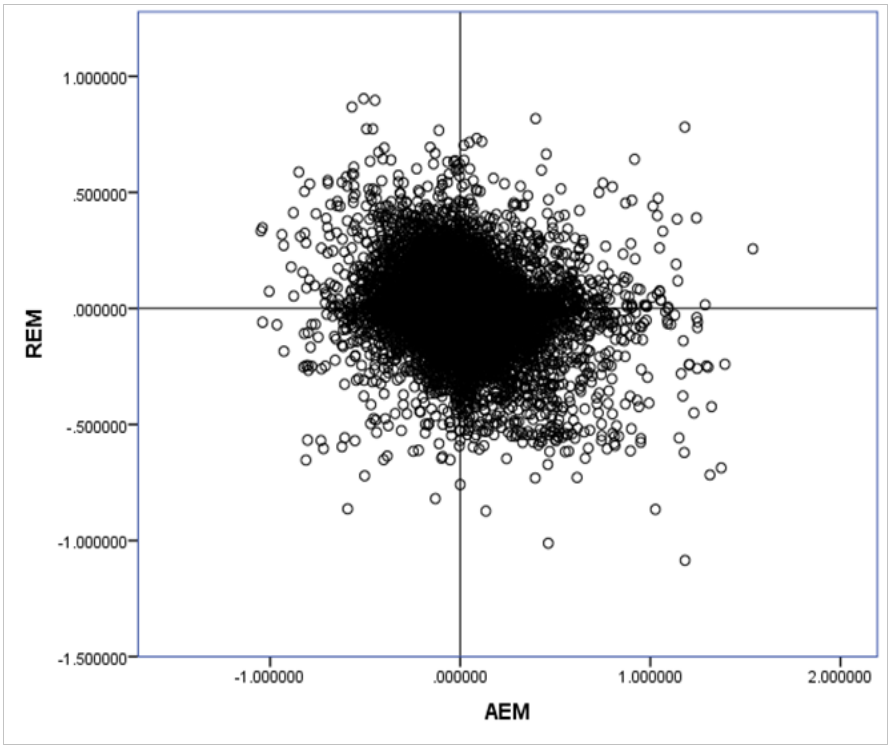

Figure 4.1 Scatter plots of earnings management proxies

Then the firms are classified according to their value of accrual and real earnings management on quadrants earnings management these classified is analyzed by cluster analysis statistic. For classification data on quadrants earnings management follows that the firms in each cluster have high internal (within-cluster) means homogeneity and high external (between-cluster) means heterogeneity. When plotting a geometrical graph, firms in the same cluster are close together and firms in different clusters are far apart from those in other clusters (Hair et al., 2010). The coloring of the points is the result of clustering of the firm samples based on their earnings management strategy similarity. The clustering plots show the distance of earnings management strategy between firms.

Based on abnormal total accruals (AEM) and abnormal CFO (REM), the firms can classify into four quadrants and eleven earnings management strategies as shown in Figure 4.2. The scatter plots of the eleven clusters of earnings management strategies. The clustering plots show a clear correlation between these two earnings management mechanisms of each earnings management strategy.

Figure 4.2 Scatter plots of earnings management by earnings management strategy

The clustering plots show a clear correlation between these two earnings management mechanisms of each earnings management strategy. Firm in quadrant II where the signs of the AEM and REM is (–, +). It mean that firm in this quadrant has mange earnings downward via both accrual and real earnings management. Firms in quadrant IV where the signs of the AEM and REM is (+,–). It mean that firm in this quadrant has mange earnings upward via both accrual and real earnings management. The group of firm that has a smaller distance between them in the cluster and these points stay around zero. It means that firm has a few earnings management and high earnings quality. Quadrants earnings management is used to name the set of earnings management strategies. Then each cluster was labeled into three types (Normal, Downward, and Upward) and interpreted based on their earnings management strategy.

Type 1 is a normal earnings management.

Clearly, clusters, which consists of three groups (5, 7, 9), plot near the point of zero. The firms in three clusters have low level of earnings management with no

earnings management strategy and have a smaller distance between them in the cluster. Three clusters are labeled “Normal” (low level of earnings management).

The firms in cluster 7 have negative small values of AEM (mean = -0.0592) and positive small values of REM (mean = 0.0269). This means that firms in cluster 7 manage earnings downwards through abnormal total accruals and also manage earning downwards through abnormal CFO at the same time. However, the levels of both earnings management are small. This cluster is labeled “Normal_A&R” (small earnings management).

The firms in cluster 5 have positive very small values of AEM (mean = 0.0093) and negative small values of REM (mean = -0.0648). This means that firms in cluster 5 manage earnings upwards through abnormal total accruals and also manage earning upwards through abnormal CFO at the same time. However, the levels of both earnings management are small and the value of AEM is very small. This cluster is labeled “Normal_AEM” (small earnings management especially accrual earnings management).

The firms in cluster 9 have positive small values of AEM (mean = 0.0953) and positive very small values of REM (mean = 0.0045). This means that firms in cluster 9 manage earnings upwards through abnormal total accruals but manage earning downwards through abnormal CFO at the same time. The levels of both earnings management are small and the value of REM is very small and the reverse direction. This cluster is labeled “Normal_REM” (small earnings management especially real earnings management).

Quadrants earnings management

Firm in quadrant II manage earnings downward via both AEM and REM (it ranges from 90° to 180°). Firm in quadrant VI manage earnings upward via both AEM and REM (it ranges from 270° to 360°). However, the firms in quadrant I and quadrant III are divided into two parts by the half of the coordinate axes for the better of earnings management classification. Figure 4.3 shows the scatter plots of the eleven clusters on quadrants earnings management. The first quadrant; the 45 degree of upper right-hand part is the area of the firms that mange earnings upward through accrual earnings management; and the next 45 degree of upper right-hand part is the area of the firms that mange earnings downward through real earnings management.

Therefore, quadrant I is separated into upward earnings by AEM (it ranges from 0° to 45°) and downward earnings by REM (it ranges from 45°to 90°). Finally, the third quadrant; the 45 degree of lower left-hand part is the area of the firms that mange earnings downward through accrual earnings management; and the next 45 degree of lower left-hand part is the area of the firms that mange earnings upward through real earnings management. Quadrant III is separated into downward earnings by AEM (it ranges from 180° to 225°) and upward earnings by REM (it ranges from 225° to 270°).

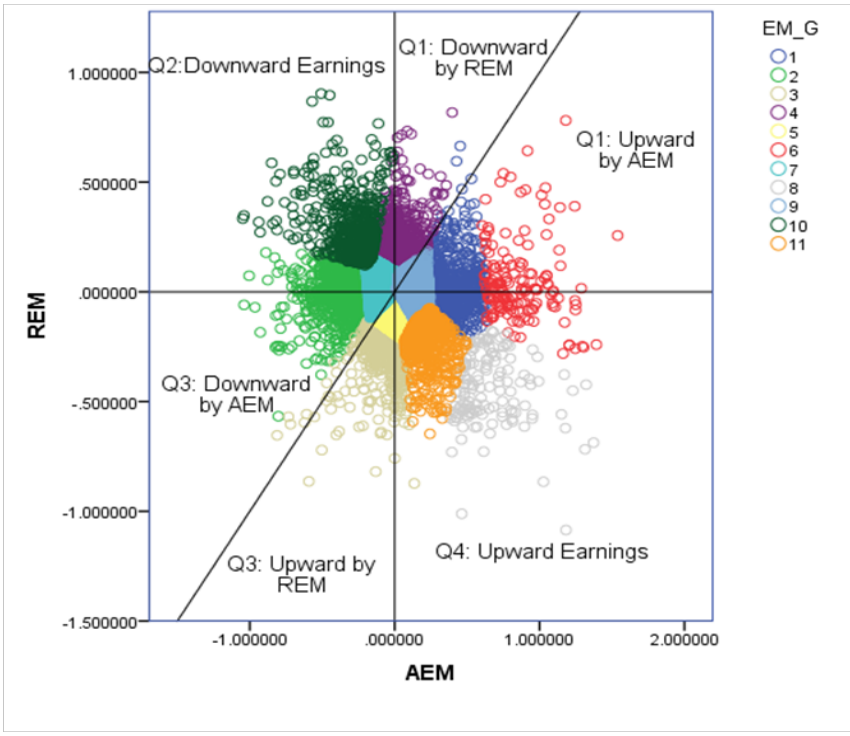

Figure 4.3 Scatter plots of earnings management by quadrants earnings management

Type 2 is a downward earnings management (45°- 225°)

Firms in cluster 4, in quadrant I which range from 45°to 90°,have a negative very small value of AEM (mean = -0.0016) and positive large value of REM (mean = 0.1777). This means that firms in cluster 4 manage earnings downwards through abnormal total accruals and abnormal CFO. The level of REM of this cluster is smaller than cluster “Downward” but its level of AEM is very small. The cluster is labeled “Downward_REM” (downward earnings management through real earnings management).

Firms in cluster 10, in quadrant II which range from 90° to 180°, have negative values of AEM (mean = -0.2738) and positive values of REM (mean = 0.2715). This means that firms in cluster 10 manage earnings downwards via both abnormal total accruals and abnormal CFO. This cluster is labeled “Downward_A&R” (downward earnings management via both accrual and real earnings management).

Firms in cluster 2, in quadrant III which range from 180° to 225°, have a positive large value of AEM (mean = -0.3119) and negative very small value of REM (mean = -0.0047). This means that firms in cluster 2 manage earnings downwards through abnormal total accruals. The level of AEM of this cluster is higher than other downward clusters but its level of REM is very small. The cluster is labeled “Downward_AEM” (downward earnings management through accrual earnings management).

Type 3 is an upward earnings management (225°- 360° and 0°- 45°)

Firms in cluster 3, in quadrant III which range from 225° to 270°, have small negative values of AEM (mean = -0.0791) and negative values of REM (mean = -0.2829). This means that firms in cluster 3 manage earnings upwards through abnormal CFO. The level of REM in this cluster is higher than other upward clusters. This cluster is labeled “Upward_REM” (Upward earnings management through real earnings management).

Firms in cluster 11,in quadrant VI which range from 270° to 360°, have positive values of AEM (mean = 0.2172) and negative values of REM (mean = -0.2212). This means that firms in cluster 11 manage earnings upwards via both abnormal total accruals and abnormal CFO. This cluster is labeled “Upward_A&R” (Upward earnings management via both accrual and real earnings management).

Firms in cluster 8,in quadrant VI which range from 270° to 360°, have positive values of AEM (mean = 0.6539) and negative values of REM (mean = -0.4381). Similarly to cluster 11, these firms in cluster 8 manage earnings upwards via both abnormal total accruals and abnormal CFO. However, the level of AEM in this cluster is higher than cluster 11. This cluster is labeled “Upward_A&R_H” (High level of upward earnings management via both high accrual and real earnings management).

Firms in cluster 1,in quadrant I which range from 0° to 45°, have positive values of AEM (mean = 0.3781) and small positive values of REM (mean = 0.0224). This means that firms in cluster 1 manage earnings upwards through abnormal total

accruals. This cluster is labeled “Upward_AEM” (Upward earnings management through accrual earnings management).

Firms in cluster 6,in quadrant I which range from 0° to 45°, have high positive values of AEM (mean = 0.8540) and small positive values of REM (mean = 0.0465). This means that firms in cluster 6 manage earnings upwards through abnormal total accruals. The level of AEM in this cluster is the highest. This cluster is labeled “Upward_AEM_H” (High level of upward earnings management through accrual earnings management).

From the scatter plots of eleven earnings management classification clusters are drawn as four quadrants which are shown as Figure 4.3. Then each cluster was labeled and interpreted based on their earnings management strategy as shown in Table 4.4, Figure 4.4 and Figure 4.5.

Table 4.4 Cluster centers and cluster Naming

Main Cluster	Cluster		Sub-Cluster Names	Number of cases	Percentage (%)
	AEM	REM			
Normal Type: (77.02%)					
Cluster 7	-0.0592	0.0269	Normal_A&R	9759	34.69
Cluster 5	0.0093	-0.0648	Normal_AEM	6,656	23.66
Cluster 9	0.0953	0.0045	Normal_REM	5254	18.67
Downward Earnings Type: (14.20%)					
Cluster 10	-0.2738	0.2715	Downward_A&R	687	2.44
Cluster 2	-0.3119	-0.0047	Downward_AEM	1,479	5.26
Cluster 4	-0.0016	0.1777	Downward_REM	1830	6.50
Upward Earnings Type: (8.77%)					
Cluster 11	0.2172	-0.2212	Upward_A&R	740	2.63
Cluster 8	0.6539	-0.4381	Upward_A&R _H	144	0.51
Cluster 1	0.3781	0.0224	Upward_AEM	849	3.02
Cluster 6	0.8540	0.0465	Upward_AEM_H	164	0.58
Cluster 3	-0.0791	-0.2829	Upward_REM	572	2.03
				28,134	100

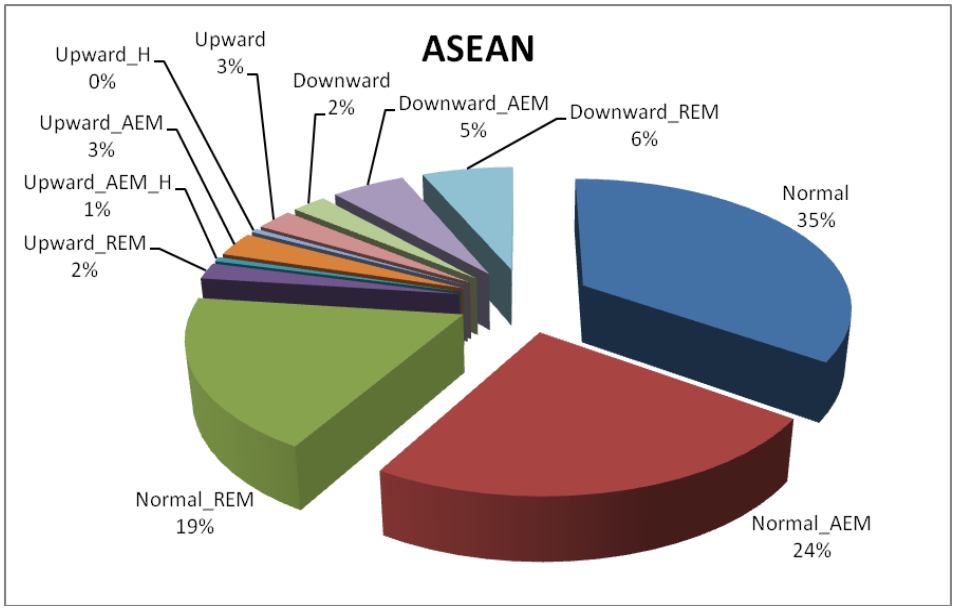

Figure 4.4 ASEAN earnings management strategy

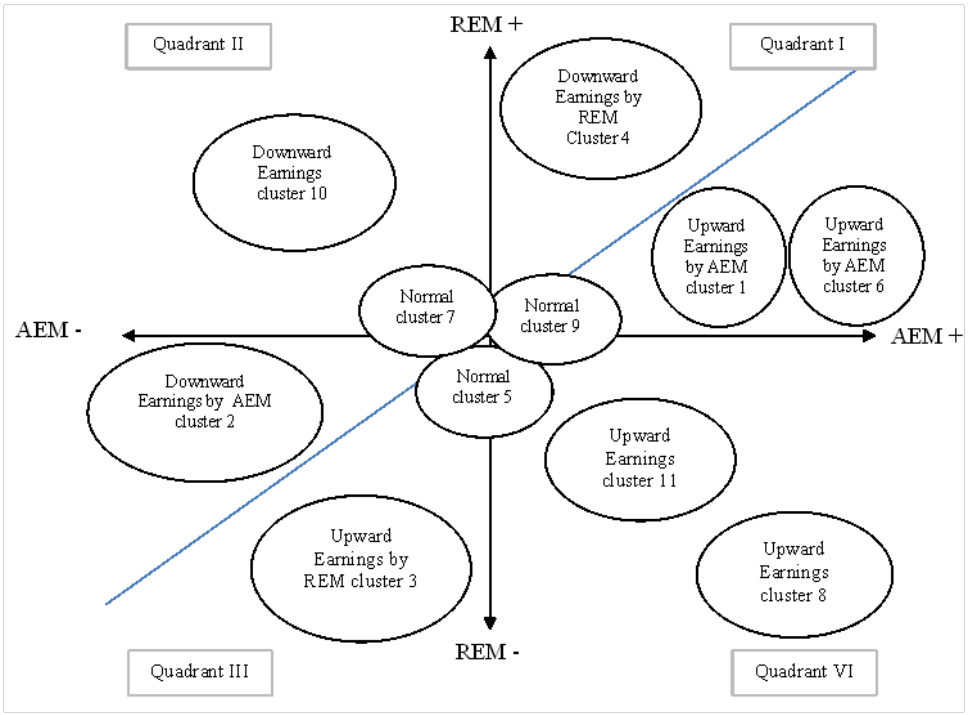

Figure 4.5 Classification on quadrants earnings management technique

Table 4.5 (1) to - Table 4.5 (11) present the firms' characteristics classified by earnings management strategy. The firms' characteristics are statistically different across clusters of earnings management strategy. These characteristics include total assets (US dollar), total sales (US dollar); market capital of firm (US dollar), the percentage of shares held by free-floating (%), return on assets (%), return on equity (%), leverage ratio (%), and price to earnings ratio (time).

Table 4.5 The firms' characteristics classified by earnings management strategy.

Table 4.5 (1) "Normal_A&R**"** cluster

	Obs.	Mean	S.E. of mean	Percentile 05	Median	Percentile 95
Asset ($)	9,759	9,576,370	3,267,918	9,121	88,037	2,520,960
Sale ($)	9,759	3,760,979	1,076,995	3,141	60,095	1,550,657
Marketcap ($)	9,153	472,878	23,864	1,396	31,684	2,014,511
Free float (%)	6,554	61.37	0.36	18.00	58.00	100.00
ROA (%)	9,721	5.50	0.12	-8.13	5.56	18.42
ROE (%)	9,443	6.11	0.76	-25.53	8.62	35.09
Debt ratio (%)	8,693	27.32	0.26	0.66	23.77	63.54
PE ratio (time)	6,825	196.04	100.85	2.70	10.80	56.90
AEM	9,759	-0.0592	0.0005	-0.1590	-0.0506	0.0099
REM	9,759	0.0269	0.0004	-0.0383	0.0235	0.0996
Abs_AEM	9,759	0.0613	0.0005	0.0029	0.0506	0.1590
Abs_REM	9,759	0.0386	0.0003	0.0023	0.0310	0.1002

Table 4.5 (2) "Normal_AEM**"** cluster

	Obs.	Mean	S.E. of mean	Percentile 05	Median	Percentile 95
Asset ($)	6,656	6,310,780	2,311,971	8,478	85,060	2,115,803
Sale ($)	6,656	2,673,586	839,282	3,312	61,604	1,484,484
Marketcap ($)	6,235	408,003	30,046	1,177	28,946	1,383,781
Free float (%)	4,568	62.51	0.43	19.00	59.00	100.00
ROA (%)	6,633	4.06	0.12	-9.68	4.60	15.40
ROE (%)	6,475	3.86	1.01	-25.05	6.60	29.10
Debt ratio (%)	5,949	28.39	0.32	0.70	25.69	63.38
PE ratio (time)	4,563	30.48	6.09	2.60	10.40	56.00
AEM	6,656	0.0093	0.0005	-0.0653	0.0100	0.0816
REM	6,656	-0.0648	0.0005	-0.1512	-0.0561	-0.0068
Abs_AEM	6,656	0.0333	0.0003	0.0015	0.0257	0.0906
Abs_REM	6,656	0.0649	0.0005	0.0070	0.0561	0.1512

Table 4.5 (3) “Normal_ REM” cluster

	Obs.	Mean	S.E. of mean	Percentile 05	Median	Percentile 95
Asset ($)	5,254	4,033,704	2,909,888	8,851	92,896	2,547,802
Sale ($)	5,254	1,642,777	898,352	3,794	61,198	1,433,868
Marketcap ($)	4,857	424,560	31,910	1,212	30,341	1,683,124
Free float (%)	3,449	61.98	0.50	17.00	58.00	100.00
ROA (%)	5,238	5.75	0.16	-9.52	6.08	19.73
ROE (%)	5,110	6.89	4.26	-30.25	9.42	35.83
Debt ratio (%)	4,642	27.42	0.34	0.57	24.46	63.10
PE ratio (time)	3,594	87.55	44.13	2.70	10.80	58.10
AEM	5,254	0.0953	0.0007	0.0281	0.0840	0.2014
REM	5,254	0.0045	0.0006	-0.0750	0.0048	0.0840
Abs_AEM	5,254	0.0953	0.0007	0.0281	0.0840	0.2014
Abs_REM	5,254	0.0368	0.0004	0.0026	0.0290	0.0939

Table 4.5 (4) “Downward_A&R” cluster

	Obs.	Mean	S.E. of mean	Percentile 05	Median	Percentile 95
Asset ($)	687	250,752	50,650	2,655	49,176	823,129
Sale ($)	687	153,185	18,335	1,240	32,806	582,355
Marketcap ($)	526	311,141	93,396	527	22,046	605,478
Free float (%)	340	60.04	1.59	15.50	58.50	100.00
ROA (%)	685	7.95	2.36	-14.54	9.95	38.18
ROE (%)	651	19.74	4.22	-36.37	18.50	96.17
Debt ratio (%)	552	27.79	1.59	0.37	20.94	65.15
PE ratio (time)	370	338.10	308.53	1.80	9.85	92.50
AEM	687	-0.2738	0.0056	-0.5694	-0.2248	-0.1316
REM	687	0.2715	0.0049	0.1367	0.2364	0.5392
Abs_AEM	687	0.2738	0.0056	0.1316	0.2248	0.5694
Abs_REM	687	0.2715	0.0049	0.1367	0.2364	0.5392

Table 4.5 (5) "Downward_AEM" cluster

	Obs.	Mean	S.E. of mean	Percentile 05	Median	Percentile 95
Asset ($)	1,479	454,185	119,004	3,282	67,115	1,512,951
Sale ($)	1,479	290,396	91,379	180	32,029	917,837
Marketcap ($)	1,316	558,004	156,350	973	28,687	1,923,288
Free float (%)	800	60.54	1.03	14.00	58.00	100.00
ROA (%)	1,477	3.53	2.46	-33.30	4.87	28.50
ROE (%)	1,337	3.83	6.07	-92.53	8.28	62.83
Debt ratio (%)	1,264	40.39	1.77	0.69	29.07	105.13
PE ratio (time)	805	128.88	106.66	1.60	11.80	75.90
AEM	1,479	-0.3119	0.0033	-0.5680	-0.2681	-0.1914
REM	1,479	-0.0047	0.0021	-0.1499	0.0036	0.1129
Abs_AEM	1,479	0.3119	0.0033	0.1914	0.2681	0.5680
Abs_REM	1,479	0.0628	0.0014	0.0044	0.0518	0.1557

Table 4.5 (6) "Downward_REM" cluster

	Obs.	Mean	S.E. of mean	Percentile 05	Median	Percentile 95
Asset ($)	1,830	2,215,150	1,834,391	4,880	58,390	963,756
Sale ($)	1,830	1,828,295	1,198,225	2,798	52,327	855,563
Marketcap ($)	1,583	342,107	44,464	739	22,984	867,310
Free float (%)	1,093	62.42	0.87	16.00	60.00	100.00
ROA (%)	1,821	10.07	0.35	-6.01	8.73	32.88
ROE (%)	1,770	14.40	1.15	-21.00	15.41	59.16
Debt ratio (%)	1,604	25.12	0.58	0.31	20.90	63.40
PE ratio (time)	1,212	38.88	19.61	2.20	10.10	53.70
AEM	1,830	-0.0016	0.0018	-0.1129	-0.0029	0.1351
REM	1,830	0.1777	0.0019	0.0991	0.1552	0.3272
Abs_AEM	1,830	0.0583	0.0011	0.0029	0.0469	0.1444
Abs_REM	1,830	0.1777	0.0019	0.0991	0.1552	0.3272

Table 4.5 (7) “Upward_A&R” cluster

	Obs.	Mean	S.E. of mean	Percentile 05	Median	Percentile 95
Asset ($)	740	235,451	22,501	3,155	51,929	1,051,584
Sale ($)	740	171,208	16,119	1,353	37,345	683,843
Marketcap ($)	574	267,320	53,757	748	23,234	1,003,223
Free float (%)	392	58.94	1.39	17.00	55.00	100.00
ROA (%)	736	5.01	1.03	-21.93	5.40	22.15
ROE (%)	703	3.38	4.34	-37.57	9.07	40.01
Debt ratio (%)	641	33.98	4.72	1.20	25.21	64.33
PE ratio (time)	407	173.65	137.14	2.50	10.70	100.00
AEM	740	0.2172	0.0033	0.0988	0.2007	0.3846
REM	740	-0.2212	0.0037	-0.4349	-0.1954	-0.1076
Abs_AEM	740	0.2172	0.0033	0.0988	0.2007	0.3846
Abs_REM	740	0.2212	0.0037	0.1076	0.1954	0.4349

Table 4.5 (8) “Upward_A&R_H” cluster

	Obs.	Mean	S.E. of mean	Percentile 05	Median	Percentile 95
Asset ($)	144	180,030	56,403	1,978	55,588	573,318
Sale ($)	144	59,720	13,616	0	16,800	214,410
Marketcap ($)	107	291,853	204,115	601	16,553	472,768
Free float (%)	70	55.09	3.43	12.00	49.00	100.00
ROA (%)	144	1.59	7.64	-28.18	4.81	26.61
ROE (%)	130	12.69	13.69	-58.67	7.11	59.70
Debt ratio (%)	124	36.76	5.06	0.25	24.24	84.20
PE ratio (time)	49	80.13	45.44	0.70	10.70	166.90
AEM	144	0.6539	0.0172	0.4225	0.6068	1.1511
REM	144	-0.4381	0.0133	-0.6725	-0.4260	-0.2123
Abs_AEM	144	0.6539	0.0172	0.4225	0.6068	1.1511
Abs_REM	144	0.4381	0.0133	0.2123	0.4260	0.6725

Table 4.5 (9) “Upward_AEM” cluster

	Obs.	Mean	S.E. of mean	Percentile 05	Median	Percentile 95
Asset ($)	849	5,590,278	5,104,301	5,792	73,153	1,568,439
Sale ($)	849	1,707,576	1,386,753	941	36,883	883,537
Marketcap ($)	703	437,780	89,621	940	24,825	1,533,881
Free float (%)	431	60.76	1.34	19.00	57.00	100.00
ROA (%)	844	12.65	2.64	-16.05	6.76	38.84
ROE (%)	784	2.18	6.19	-67.47	11.28	58.98
Debt ratio (%)	717	30.05	1.36	0.32	23.52	75.46
PE ratio (time)	396	153.22	111.76	1.70	12.90	75.40
AEM	849	0.3781	0.0037	0.2462	0.3563	0.5798
REM	849	0.0224	0.0037	-0.1176	0.0036	0.2378
Abs_AEM	849	0.3781	0.0037	0.2462	0.3563	0.5798
Abs_REM	849	0.0766	0.0027	0.0048	0.0527	0.2378

Table 4.5 (10) “Upward_AEM_H” cluster

	Obs.	Mean	S.E. of mean	Percentile 05	Median	Percentile 95
Asset ($)	164	214,278	42,142	2,517	54,727	741,140
Sale ($)	164	86,578	16,355	0	16,824	413,672
Marketcap ($)	139	118,496	31,641	261	13,123	673,992
Free float (%)	71	56.20	3.55	11.00	53.00	100.00
ROA (%)	164	14.62	7.42	-59.64	4.49	137.57
ROE (%)	105	-69.77	74.86	-92.08	4.70	192.78
Debt ratio (%)	131	50.30	6.13	0.37	29.98	172.88
PE ratio (time)	46	59.47	25.03	0.20	10.40	334.80
AEM	164	0.8540	0.0151	0.6297	0.8045	1.2441
REM	164	0.0465	0.0141	-0.2035	0.0088	0.4408
Abs_AEM	164	0.8540	0.0151	0.6297	0.8045	1.2441
Abs_REM	164	0.1255	0.0107	0.0082	0.0757	0.4408

Table 4.5 (11) “Upward_REM**”** cluster

	Obs.	Mean	S.E. of mean	Percentile 05	Median	Percentile 95
Asset ($)	572	176,940	30,805	2,580	42,408	620,623
Sale ($)	572	226,821	42,992	627	37,939	602,233
Marketcap ($)	453	198,135	37,218	677	16,306	782,617
Free float (%)	305	60.75	1.59	18.00	59.00	100.00
ROA (%)	570	0.44	0.85	-40.91	5.74	18.91
ROE (%)	538	-1.74	3.49	-71.77	10.34	42.25
Debt ratio (%)	508	37.94	1.19	2.06	35.30	79.12
PE ratio (time)	310	32.01	8.55	2.30	9.45	64.30
AEM	572	-0.0791	0.0052	-0.2784	-0.0608	0.0633
REM	572	-0.2829	0.0051	-0.5345	-0.2490	-0.1494
Abs_AEM	572	0.1009	0.0044	0.0033	0.0736	0.2784
Abs_REM	572	0.2829	0.0051	0.1494	0.2490	0.5345

4.4 Earnings Management Classification by Industry

This research also studied earnings management practices in the combined industry areas. Testing a relationship between industry and earnings management strategy, the result found that the industry significantly related with earnings management strategy ($p<0.001$) which contingency coefficient 0.186 (Pearson Chi-Square =1,002.83, Asymp. Sig. (2-sided) = 0.000). The results showed the statistical differences in earnings management strategy across industries.

From Table 4.6 and Figure 4.6, health care equipment and services (39.4%) and electricity (40.9%) industries have the highest proportion of the “Normal_A&R”. General industrials (26.7%) industry has the highest proportion of the “Normal_AEM”. Electricity (24.8%) industry has the highest proportion of the “Normal_REM”. Mining (5.7%) industry has the highest proportion of the “Downward_A&R”. Software and computer services (10.5%) and financial services (sector) (10.5%) industries have the highest proportion of the “Downward_AEM”. Tobacco (13.5%) industry has the highest proportion of the “Downward_ REM”.

Software and computer services (4.8%), mining (4.7%), and financial services (sector) (4.5%) industries have the highest proportion of the “Upward_A&R”. Financial services (sector) (2.6%), mining (1.5%), and software and computer

services (1.1%) industries have the highest proportion of the “Upward_A&R_H”. Software and computer services (5.9%), leisure goods (5.4%), beverages (4.7%), and financial services (sector) (4.7%) industries have the highest proportion of the “Upward_AEM”. Mining (1.8%), financial services (sector) (1.5%) and software and computer services (1.5%), and health care equipment and services (1.5%) industries have the highest proportion of the “Upward_AEM_H”. Software and computer services (5.7%), leisure goods (3.9%), and tobacco (3.8%) industries have the highest proportion of the “Upward_REM”.

The highest industry that have lower earnings management (normal type) such as electricity (86.1%), food and drug retailers (83.7%), industrial transportation (83.7%), mobile telecommunications (82.7%), general industrials (82.1%), pharmaceuticals and biotechnology (81.6%), health care equipment and services (80.9%), automobiles and parts (80.7%) food producers (80.7%), household goods and home construction (80.4%), and travel and leisure (80.2%).

The lowest industry that have higher earnings management (both downward and upward earnings type) such as software and computer services (43.5%), mining (38.4%), financial services (38.3%), oil and gas producers (29.6%), beverages (27.8%), technology hardware and equipment (27.5%), leisure goods (27.3%), and tobacco (26.9%) industries.

Table 4.6 Earnings management classification by industry.

Earnings Management Classification		Automobiles & Parts	Beverages	Chemicals	Construction & Materials	Electricity	Electronic & Electrical Equipment	Financial Services (Sector)	Fixed Line Telecommunications	Food & Drug Retailers	Food Producers	Forestry & Paper
Normal_A&R	N	223	94	416	1,341	132	444	164	42	61	1,089	141
34.7%	%	36.7%	27.8%	34.8%	35.1%	40.9%	34.0%	30.8%	35.9%	36.7%	37.4%	36.5%
Normal_AEM	N	155	80	281	966	66	337	78	24	43	748	96
23.7%	%	25.5%	23.7%	23.5%	25.3%	20.4%	25.8%	14.7%	20.5%	25.9%	25.7%	24.9%
Normal_REM	N	112	70	244	651	80	230	86	23	35	511	67
18.7%	%	18.5%	20.7%	20.4%	17.1%	24.8%	17.6%	16.2%	19.7%	21.1%	17.6%	17.4%
Downward_A&R	N	8	8	25	111	3	29	27	2	1	48	9
2.4%	%	1.3%	2.4%	2.1%	2.9%	.9%	2.2%	5.1%	1.7%	.6%	1.6%	2.3%
Downward_AEM	N	20	25	52	164	11	64	56	8	5	114	23
5.3%	%	3.3%	7.4%	4.4%	4.3%	3.4%	4.9%	10.5%	6.8%	3.0%	3.9%	6.0%
Downward_REM	N	48	24	80	241	14	96	37	8	11	193	15
6.5%	%	7.9%	7.1%	6.7%	6.3%	4.3%	7.4%	7.0%	6.8%	6.6%	6.6%	3.9%
Upward_A&R	N	11	8	28	125	6	24	24	4	2	48	6
2.6%	%	1.8%	2.4%	2.3%	3.3%	1.9%	1.8%	4.5%	3.4%	1.2%	1.6%	1.6%
Upward_A&R_H	N	-	-	3	23	1	5	14	-	-	11	2
0.5%	%	0.0%	0.0%	.3%	.6%	.3%	.4%	2.6%	0.0%	0.0%	.4%	.5%
Upward_AEM	N	14	16	29	104	5	40	25	4	7	79	17
3.0%	%	2.3%	4.7%	2.4%	2.7%	1.5%	3.1%	4.7%	3.4%	4.2%	2.7%	4.4%
Upward_AEM_H	N	2	3	6	21	-	7	8	1	-	10	4
0.6%	%	.3%	.9%	.5%	.6%	0.0%	.5%	1.5%	.9%	0.0%	.3%	1.0%
Upward_REM	N	14	10	30	69	5	28	13	1	1	60	6
2.0%	%	2.3%	3.0%	2.5%	1.8%	1.5%	2.1%	2.4%	.9%	.6%	2.1%	1.6%
Total	N	607	338	1,194	3,816	323	1,304	532	117	166	2,911	386

Table 4.6 Earnings management classification by industry (Cont.).

Earnings Management Classification		Gas, Water & Multiutilities	General Industrials	General Retailers	Health Care Equipment & Services	Household Goods & Home Construction	Industrial Engineering	Industrial Metals & Mining	Industrial Transportation	Leisure Goods	Media	Mining
Normal_A&R	N	93	338	360	184	282	324	347	391	69	206	190
34.7%	%	36.8%	35.4%	33.9%	39.4%	36.9%	34.2%	33.4%	34.7%	33.7%	32.0%	27.9%
Normal_AEM	N	50	255	233	93	191	242	250	282	48	144	133
23.7%	%	19.8%	26.7%	22.0%	19.9%	25.0%	25.6%	24.1%	25.0%	23.4%	22.4%	19.5%
Normal_REM	N	49	191	234	101	141	179	172	271	32	136	97
18.7%	%	19.4%	20.0%	22.1%	21.6%	18.5%	18.9%	16.6%	24.0%	15.6%	21.1%	14.2%
Downward_A&R	N	7	11	20	8	15	25	20	33	5	13	39
2.4%	%	2.8%	1.2%	1.9%	1.7%	2.0%	2.6%	1.9%	2.9%	2.4%	2.0%	5.7%
Downward_AEM	N	18	44	57	31	35	31	45	48	14	47	61
5.3%	%	7.1%	4.6%	5.4%	6.6%	4.6%	3.3%	4.3%	4.3%	6.8%	7.3%	9.0%
Downward_REM	N	13	57	72	13	44	70	107	36	13	44	59
6.5%	%	5.1%	6.0%	6.8%	2.8%	5.8%	7.4%	10.3%	3.2%	6.3%	6.8%	8.7%
Upward_A&R	N	9	11	30	11	16	23	35	18	3	18	32
2.6%	%	3.6%	1.2%	2.8%	2.4%	2.1%	2.4%	3.4%	1.6%	1.5%	2.8%	4.7%
Upward_A&R_H	N	1	2	4	1	4	7	1	1	2	2	10
0.5%	%	.4%	.2%	.4%	.2%	.5%	.7%	.1%	.1%	1.0%	.3%	1.5%
Upward_AEM	N	11	23	26	16	23	20	23	31	11	16	28
3.0%	%	4.3%	2.4%	2.5%	3.4%	3.0%	2.1%	2.2%	2.7%	5.4%	2.5%	4.1%
Upward_AEM_H	N	-	4	5	7	-	1	6	5	-	5	12
0.6%	%	0.0%	.4%	.5%	1.5%	0.0%	.1%	.6%	.4%	0.0%	.8%	1.8%
Upward_REM	N	2	19	20	2	13	24	32	12	8	13	20
2.0%	%	.8%	2.0%	1.9%	.4%	1.7%	2.5%	3.1%	1.1%	3.9%	2.0%	2.9%
Total	N	253	955	1,061	467	764	946	1,038	1,128	205	644	681

Table 4.6 Earnings management classification by industry (Cont.).

Earnings Management Classification		Mobile Telecommunications	Oil & Gas Producers	Oil Equipment & Services	Personal Goods	Pharmaceuticals & Biotechogy	Real Estate Investment & Services	Software & Computer Services	Support Services	Technology Hardware & Equipment	Tobacco	Travel & Leisure	Other
Normal_A&R	N	97	154	124	447	143	688	127	264	306	37	408	32
34.7%	%	37.3%	29.7%	33.4%	34.9%	37.6%	36.7%	26.7%	30.7%	31.6%	35.6%	37.2%	30.8%
Normal_AEM	N	59	115	84	327	96	371	82	195	237	24	252	19
23.7%	%	22.7%	22.2%	22.6%	25.5%	25.3%	19.8%	17.2%	22.7%	24.5%	23.1%	23.0%	18.3%
Normal_REM	N	59	96	77	232	71	354	60	184	159	15	219	15
18.7%	%	22.7%	18.5%	20.8%	18.1%	18.7%	18.9%	12.6%	21.4%	16.4%	14.4%	20.0%	14.4%
Downward_A&R	N	1	20	9	27	7	53	19	24	28	2	24	6
2.4%	%	.4%	3.9%	2.4%	2.1%	1.8%	2.8%	4.0%	2.8%	2.9%	1.9%	2.2%	5.8%
Downward_AEM	N	17	34	16	66	18	129	50	47	50	3	67	9
5.3%	%	6.5%	6.6%	4.3%	5.2%	4.7%	6.9%	10.5%	5.5%	5.2%	2.9%	6.1%	8.7%
Downward_REM	N	11	39	23	76	23	97	48	59	89	14	49	7
6.5%	%	4.2%	7.5%	6.2%	5.9%	6.1%	5.2%	10.1%	6.9%	9.2%	13.5%	4.5%	6.7%
Upward_A&R	N	4	21	10	25	3	62	23	32	36	2	26	4
2.6%	%	1.5%	4.0%	2.7%	2.0%	.8%	3.3%	4.8%	3.7%	3.7%	1.9%	2.4%	3.8%
Upward_A&R_H	N	-	1	2	5	2	17	5	4	7	1	2	4
0.5%	%	0.0%	.2%	.5%	.4%	.5%	.9%	1.1%	.5%	.7%	1.0%	.2%	3.8%
Upward_AEM	N	7	22	13	39	8	67	28	22	39	2	27	7
3.0%	%	2.7%	4.2%	3.5%	3.0%	2.1%	3.6%	5.9%	2.6%	4.0%	1.9%	2.5%	6.7%
Upward_AEM_H	N	2	2	2	8	2	15	7	6	3	-	10	-
0.6%	%	.8%	.4%	.5%	.6%	.5%	.8%	1.5%	.7%	.3%	0.0%	.9%	0.0%
Upward_REM	N	3	15	11	29	7	22	27	23	15	4	13	1
2.0%	%	1.2%	2.9%	3.0%	2.3%	1.8%	1.2%	5.7%	2.7%	1.5%	3.8%	1.2%	1.0%
Total	N	260	519	371	1,281	380	1,875	476	860	969	104	1,097	104

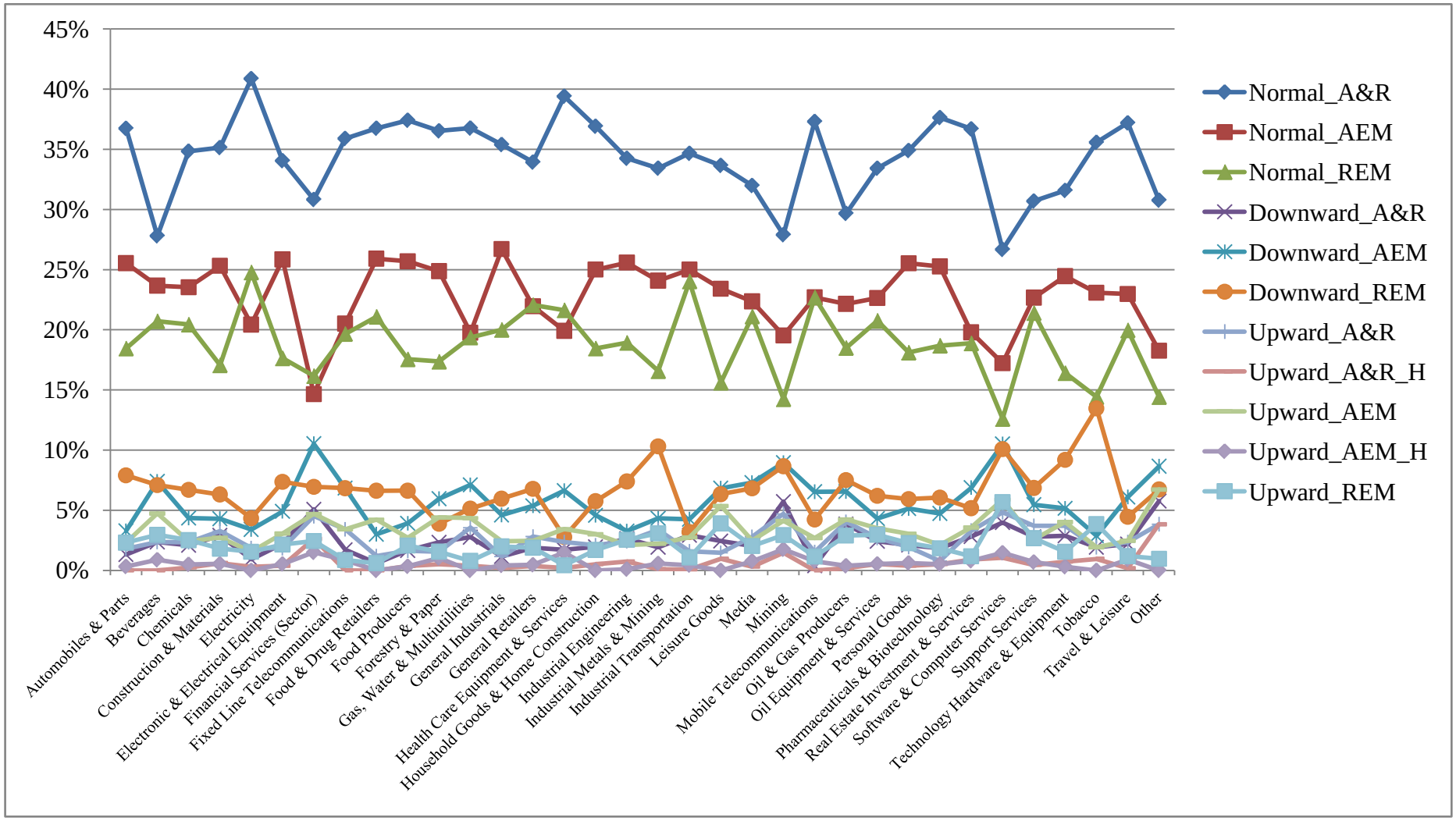

Figure 4.6 Earnings management strategy by industry

CHAPTER V
EARNINGS MANAGEMENT ACROSS ASEAN COUNTRIES

This chapter describes the research results that are related to the research hypotheses based on the research objectives and research questions. This chapter is organized in four sections; first of all, section 5.1 describes the difference of earnings management level across countries. Section 5.2 explains the difference of earnings management strategy across countries. Next, Section 5.3 explains the difference of earnings management strategy across post-colonial era. Finally, Section 5.4 describes the influence of accounting diversity on earnings management.

5.1 Level of Earnings Management

Table 5.1 and Figure 5.1 present the mean values of the absolute abnormal accruals (Abs_AEM) and absolute abnormal CFO (Abs_REM) for the firms in ASEAN stock exchange. Higher value of Abs_AEM indicates the more the firm engages in accrual earnings management. The mean values of Abs_AEM for the Indonesia, Malaysia, Philippine, Singapore, Thailand, Vietnam firm sample are 0.12, 0.08, 0.12, 0.11, 0.09, and 0.11, respectively. Higher value Abs_REM indicates the more the firm engages in real earnings management. The mean values of Abs_REM for the Indonesia, Malaysia, Philippine, Singapore, Thailand, Vietnam firm sample are 0.08, 0.06, 0.07, 0.08, 0.08, and 0.12, respectively. For mean value of Abs_AEM and Abs_REM between countries can be shown as Figure 2. Malaysia has lower level of both accrual and real earnings management level than others. It implies that the financial statement of firms in Malaysia is high earnings quality than others.

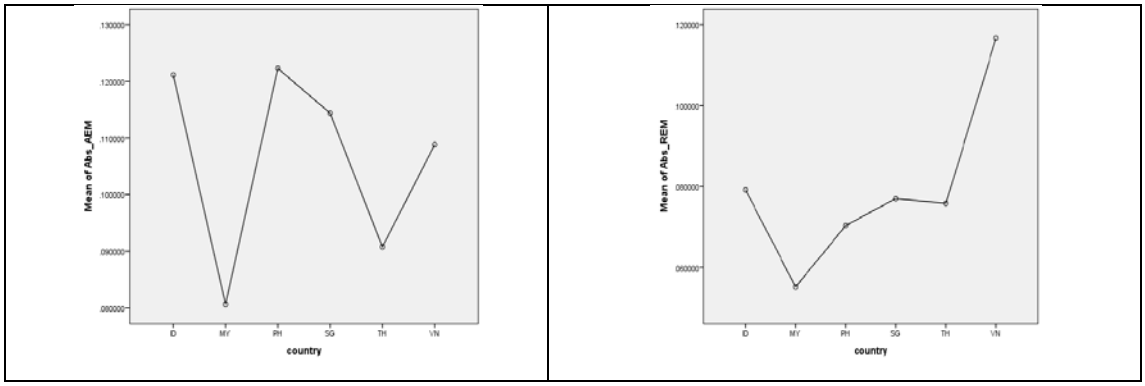

Figure 5.1 The mean of Abs_AEM and Abs_REM across countries**.**

Table 5.1 Summary statistics of earnings management level for the final sample.
This table reports summary statistics for key variables for the sample of 39,305 firm-year observations over the period 1993–2014. Abs_AEM is absolute abnormal total accruals. Abs_REM is absolute abnormal CFO. ID is Indonesia. MY is Malaysia. PH is Philippine. SG is Singapore. TH is Thailand. VN is Vietnam.

Variables	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
Abs_AEM								
ID	4,272	0.121	0.160	0.002	0.116	0.126	0.000	1.373
MY	8,124	0.081	0.099	0.001	0.078	0.083	0.000	0.812
PH	2,143	0.122	0.181	0.004	0.115	0.130	0.000	1.539
SG	5,135	0.114	0.135	0.002	0.111	0.118	0.000	1.055
TH	5,360	0.091	0.110	0.002	0.088	0.094	0.000	0.981
VN	3,992	0.109	0.114	0.002	0.105	0.112	0.000	0.803
Total	29,026	0.101	0.128	0.001	0.100	0.103	0.000	1.539
Abs_REM								
ID	5,950	0.079	0.091	0.001	0.077	0.081	0.000	0.687
MY	10,696	0.055	0.057	0.001	0.054	0.056	0.000	0.463
PH	3,497	0.070	0.103	0.002	0.067	0.074	0.000	1.085
SG	6,932	0.077	0.090	0.001	0.075	0.079	0.000	0.820
TH	7,703	0.076	0.083	0.001	0.074	0.078	0.000	0.652
VN	4,527	0.117	0.123	0.002	0.113	0.120	0.000	0.903
Total	39,305	0.075	0.089	0.000	0.074	0.076	0.000	1.085

Table 5.2 provides the difference in the mean of Abs_AEM and Abs_REM across ASEAN countries. The mean of Abs_AEM for Philippines (0.122) is significant higher difference accrual earnings management level than others, exclude Indonesia (0.121). This implies that Philippines and Indonesia are significant higher level of accrual earnings management level than Singapore, Vietnam, Thailand, and Malaysia, respectively by their level. Therefore, Malaysia (0.080) is significant lower difference accrual earnings management level than others. The mean of Abs_REM for Vietnam (0.117) is significant higher difference real earnings management level than others. Follow by Indonesia and Singapore, Indonesia is not significant difference

from Singapore and next follow by Thailand, Philippines and Malaysia. Therefore, Malaysia (0.055) is significant lower difference real earnings management level than others. The differences in the mean between countries are statistically significant, implying that ASEAN countries tend to have difference in earnings management level. Earnings management level (Abs_AEM and Abs_REM) of six ASEAN countries are different in mean value with statistic significant at the 1%, 5% level.

Table 5.2 Mean difference of earnings management level between countries.
This table reports mean difference of Abs_AEM and Abs_REM between countries for a sample of 29,026 firm-year observations covering the period 1993–2014. ***, **, and * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Abs_AEM						
Country	ID	MY	PH	SG	TH	VN
ID						
MY	0.041***					
PH	-0.001	-0.042***				
SG	0.007**	-0.034***	0.008			
TH	0.030***	-0.010***	0.032***	0.024***		
VN	0.012***	-0.028***	0.014**	0.006**	-0.018***	
Mean	0.121	0.081	0.122	0.114	0.091	0.109
N	4,272	8,124	2,143	5,135	5,360	3,992

Abs_REM						
Country	ID	MY	PH	SG	TH	VN
ID						
MY	0.024***					
PH	0.009***	-0.015***				
SG	0.002	-0.022***	-0.007***			
TH	0.003**	-0.021***	-0.006**	0.001		
VN	-0.038***	-0.062***	-0.046***	-0.040***	-0.041***	
Mean	0.079	0.055	0.070	0.077	0.076	0.117
N	5,950	10,696	3,497	6,932	7,703	4,527

5.2 Earnings Management Strategy across Countries

5.2.1 Earnings Management Strategy across Country

Following cluster analysis, scatter plots, and quadrant technique show each country founding eleven sub-types of earnings management strategies show as table

5.4 and Figure 5.2 and 5.3. From Figure 8, the result indicated that the characteristic of Abs_REM and Abs_AEM all six ASEAN countries have similarity behavior. They are all contains eleven cluster of earnings management, whereas, Vietnam has upward earning management type more than others. From Table 5, Pearson Chi-square is used to test the difference pattern of earnings management strategies between countries. The result found that earnings management strategies has significant difference between country ($p<0.000$) which contingency coefficient 0.199.

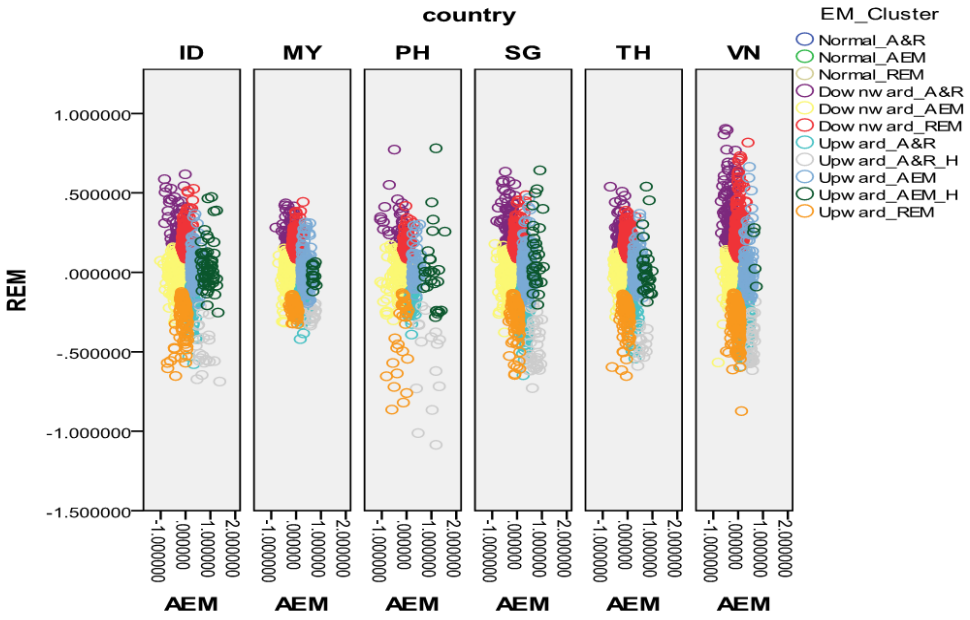

Figure 5.2 Earnings management strategies (11 groups) by country

From Table 5.3, for eleven earnings management strategy would be countable the amount of firm depending country, the maximum of Normal_A&R and Normal_AEM cluster is Malaysia that was 38.85% and 26.35%, this result consist with test of difference in mean that Malaysia is significant lower difference from other countries. The maximum of Upward_AEM_H and Upward_AEM clusters is Indonesia, this result consist with test of difference in mean that Indonesia is significant higher difference from other countries. An investor uses companies' earnings to assess risk and return of firms before deciding which company they will invest in and the stock price is sensitive to reported earnings (Chen et al., 2007). The upward earnings though accruals clusters, especially "Upward_AEM_H" cluster, pose risks to financial statement users since the firms in this cluster may mislead the users over the firms' financial information**.**

Table 5.3 Earnings management strategy (11 groups) by country.

Earnings Management		Countries						Total
		ID	MY	PH	SG	TH	VN	
Normal Type (Low Earnings Management): (77%)								
Normal_ A&R	N	1,426 a	2,996 b	750 a, b	1,703 a	1,838 a	1,046 c	9,759
	%	34.32	38.85	35.83	34.09	35.35	26.28	34.7
Normal_ AEM	N	931	2,032 e	426 c, d	1,072 b, d	1,293 a, e	902	6,656
	%	22.41	26.35	20.35	21.46	24.87	22.66	23.7
Normal_ REM	N	698 a	1,519 b	440 b	933 a, b, c	996 b, c	668 a, c	5,254
	%	16.80	19.70	21.02	18.68	19.15	16.78	18.7
Subtotal	*%*	*73.53*	*84.9*	*77.2*	*74.23*	*79.37*	*65.72*	*77.1*
Downward Earnings Management Type: (14%)								
Downward_A&R	N	105 a, b	80 c	44 a, b	154 b	105 a	199 d	687
	%	2.53	1.04	2.10	3.08	2.02	5.00	2.4
Downward_AEM	N	269 a	322 b	145 a	316 a	243 b	184 b	1,479
	%	6.47	4.18	6.93	6.33	4.67	4.62	5.3
Downward_REM	N	289 a	338 b	109 a, b	323 a	334 a	437 c	1,830
	%	6.96	4.38	5.21	6.47	6.42	10.98	6.5
Subtotal	*%*	*15.96*	*9.6*	*14.24*	*15.88*	*13.11*	*20.6*	*14.2*
Upward Earnings Management Type: (9%)								
Upward_ A&R	N	98	123 d, e	35 c, e	151 b	109 a, c ,d,	224 f	740
	%	2.36	1.60	1.67	3.02	2.10	5.63	2.6
Upward_ A&R_H	N	22 a, b, c, d	17 d	15 a, b,	39 c	16 b, d	35 a, c	144
	%	0.53	0.22	0.72	0.78	0.31	0.88	0.5
Upward_ AEM	N	162 a	202 b	70 a, b	184 a	135 b	96 b	849
	%	3.90	2.62	3.34	3.68	2.60	2.41	3.0
Upward_ AEM_H	N	59 a	14 b	26 a, c	31 d	30 d	4 b	164
	%	1.42	0.18	1.24	0.62	0.58	0.10	0.6
Upward_ REM	N	96 a	68 b	33 a, b	89 a	101 a	185 c	572
	%	2.31	0.88	1.58	1.78	1.94	4.65	2.0
Subtotal	%	10.52	5.5	8.55	9.88	7.53	13.67	8.7
Total	N	4,155	7,711	2,093	4,995	5,200	3,980	28,134

Pearson Chi-Square = 1165.662, Asymp. Sig. (2-sided) = 0.000

Contingency Coefficient = 0.199

a, b, c, d, e Each subscript letter denotes a subset of country categories whose column proportions do not differ significantly from each other at the 0.05 level.

% is the percentage of firm within country.

From Figure 5.3, for three earnings management types include normal, downward and upward earnings management types. Earnings management types would be countable the amount of firm depending country, the top three of normal type is Malaysia, Thailand, and Philippine. Be careful, top three of upward earnings management type is Vietnam, Indonesia, and Singapore.

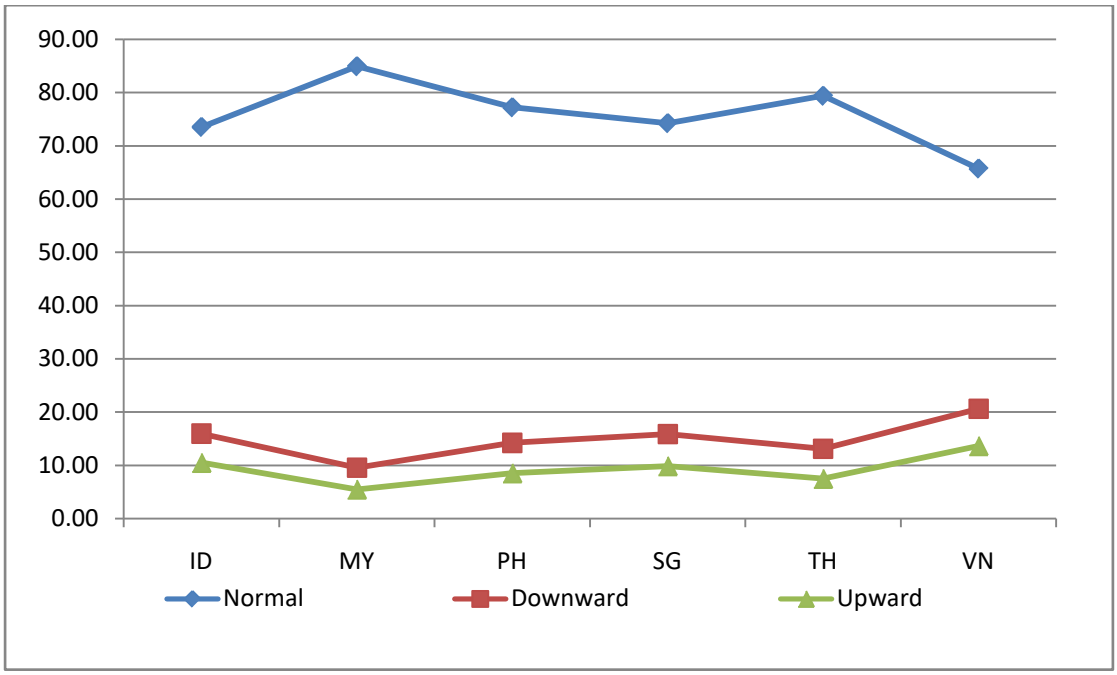

Figure 5.3 Earnings management type by country

For investor, the firms that are in the normal earnings management type. The intrinsic value of firm which estimated by analyst is close to the real value of firm. While the firms in the downward earnings type, the intrinsic value of firm which estimated by analyst is less than the real value of firm. This is due to the firm hiding its profit in future business earnings. In the future, the stock price trend is likely to be increase.

In contrast, the firms in the upward earnings type, the intrinsic value of firm which estimated by analyst is higher than the real value of firm. This is due to the firm accelerate recognize its future profit in the present business earnings. The stock price seems to overvalue. In the future, the stock price trend is likely to be decrease. The stocks in this group is very risky, especially, upward earnings management via accruals.

From Table 5.4, the earnings management strategies are group into 7 main strategies included normal, downward via accruals, downward via real activities,

downward via both accruals and real activities, upward via accruals, upward via real activities, upward via both accruals and real activities. The result indicated that earnings management strategies has significant difference between country ($p<0.000$) which contingency coefficient 0.189.

Table 5.4 Earnings management strategy (7 groups) by country.

Earnings Management		Countries						Total
		ID	MY	PH	SG	TH	VN	
Normal Type (Low Earnings Management): (77%)								
Normal	N	$3,055_{a}$	$6,547_{b}$	$1,616_{c}$	$3,708_{a}$	$4,127_{d}$	$2,616_{e}$	21,669
	%	73.5%	84.9%	77.2%	74.2%	79.4%	65.7%	77.1%
Subtotal	*%*	73.5%	84.9%	77.2%	74.2%	79.4%	65.7%	77.1%
Downward Earnings Management Type: (14%)								
Downward_AEM	N	269_{a}	322_{b}	145_{a}	316_{a}	243_{b}	184_{b}	1,479
	%	6.5%	4.2%	6.9%	6.3%	4.7%	4.6%	5.3%
Downward_REM	N	289_{a}	338_{b}	109_{b}	323_{a}	334_{a}	437_{c}	1,830
	%	7.0%	4.4%	5.2%	6.5%	6.4%	11.0%	6.5%
Downward_A&R	N	$105_{a, b, c}$	80_{d}	44_{c}	154_{b}	$105_{a, c}$	199_{e}	687
	%	2.5%	1.0%	2.1%	3.1%	2.0%	5.0%	2.4%
Subtotal	*%*	*16.0*	*9.6*	*14.2*	*15.9*	*13.1*	*20.6*	*14.2*
Upward Earnings Management Type: (9%)								
Upward_AEM	N	221_{a}	216_{b}	$96_{a, c}$	215_{c}	165_{b}	100_{b}	1,013
	%	5.3%	2.8%	4.6%	4.3%	3.2%	2.5%	3.6%
Upward_ REM	N	96_{a}	68_{b}	33_{a}	89_{a}	101_{a}	185_{c}	572
	%	2.3%	.9%	1.6%	1.8%	1.9%	4.6%	2.0%
Upward_ A&R	N	120_{a}	140_{b}	$50_{a, b}$	190_{c}	125_{a}	259_{d}	884
	%	2.9%	1.8%	2.4%	3.8%	2.4%	6.5%	3.1%
Subtotal	%	10.52	5.5	8.55	9.88	7.53	13.67	8.7
Total	N	4,155	7,711	2,093	4,995	5,200	3,980	28,134

Pearson Chi-Square = 1038.536, Asymp. Sig. (2-sided) = 0.000

Contingency Coefficient = 0.189

$_{a, b, c, d, e}$ Each subscript letter denotes a subset of country categories whose column proportions do not differ significantly from each other at the 0.05 level.

% is the percentage of firm within country.

5.3 Earnings management strategy across Country and Industry

This research also studied earnings management practices in the combined industry areas. The Industry Classification Benchmark (ICB) is used to segregate markets into sectors within the macroeconomics. ICB is an industry classification taxonomy launched by FTSE because ICB is widely used both by the world's stock exchanges (FTSE Russell, 2018). The ICB uses a system classified the firm into 41 sectors, which are group into 10 industries (FTSE Russell, 2018). The ICB 10 industries (41 sectors) include Oil & Gas (Alternative Energy, Oil & Gas Producers, Oil Equipment & Services), Basic Materials (Chemicals, Forestry & Paper, Mining, Industrial Metals & Mining), Industrials (Construction & Materials, Aerospace & Defense, General Industrials, Industrial Engineering, Industrial Transportation, Support Services, Electronic & Electrical Equipment), Consumer Goods (Automobiles & Parts, Household Goods & Home Construction, Leisure Goods, Beverages, Food Producers, Personal Goods, Tobacco), Health Care (Health Care Equipment & Services, Pharmaceuticals & Biotechnology), Consumer Services (General Retailers, Media, Travel & Leisure, Food & Drug Retailers), Telecommunications (Telecommunications, Mobile Telecommunications, Fixed Line,), Utilities (Electricity, Gas, Water & Multiutilities), Financials (Banks, Equity Investment Instruments, Financial Services, Life Insurance, Nonequity Investment Instruments, Nonlife Insurance, Real Estate Investment Trusts, Real Estate Investment & Services), and Technology (Software & Computer Services, Technology Hardware & Equipment) (FTSE Russell, 2018).

Panel A to Panel F of Table 5.5 reported the testing a relationship between industry and earnings management strategy classified by country. Panel A of Table 5.5, Indonesia, the results found that the industry significantly related with earnings management strategy ($p<0.001$) which contingency coefficient 0.132. The results showed the statistical differences in earnings management strategy across industries in Indonesia. Telecommunications (81%) and health care (80%) industries have the highest proportion of the normal earnings type. Be careful, the lowest proportion of the normal earnings type is technology (56%) and followed by utilities (70%) and basic materials (70%). Technology industry is also highest proportion of the upward (3.0%) and downward (13.4%) earnings via real activities, and downward (3.0%) earnings via both accruals and real activities. Utilities industry is also highest proportion of the upward (11.8%) and downward (17.6%) earnings via accruals. Basic

materials industry is also highest proportion of the upward (3.8%) earnings via both accruals and real activities.

Panel B of Table 5.5, Malaysia, the results found that the industry significantly related with earnings management strategy ($p<0.001$) which contingency coefficient 0.130. The results showed the statistical differences in earnings management strategy across industries in Malaysia. Exclude technology industry, the proportion of firms in the normal type of earnings management above 80%. Consumer goods (88%) and utilities (87%) industries have the highest proportion of the normal earnings type. Be careful, the lowest proportion of the normal earnings type is technology industry (71%), which also highest proportion of the downward earnings (2.3%) via accruals and real activities, upward (2.6%) and downward (7.4%) earnings via real activities, and upward (5.6%) earnings via accruals. Consumer service industry is highest proportion (7.3%) of the downward earnings via accruals.

Panel C of Table 5.5, Philippines, the results found that the industry significantly related with earnings management strategy ($p<0.001$) which contingency coefficient 0.213. The results showed the statistical differences in earnings management strategy across industries in Philippines. All health care firms are in the normal type of earnings management. Utilities (87%) industrials (82%) industries have the highest proportion of the normal earnings type. Be careful, the lowest proportion of the normal earnings type is technology industry (50%), which also highest proportion of the upward (8.6%) and downward (4.3%) earnings via accruals and real activities, upward (7.1%) and downward (12.9%) earnings via real activities, and downward earnings (11.4%) via accruals. The highest proportion (8.8%) of the upward earnings via accruals is Telecommunication industry.

Panel D of Table 5.5, Singapore, the results found that the industry significantly related with earnings management strategy ($p<0.001$) which contingency coefficient 0.150. The results showed the statistical differences in earnings management strategy across industries in Singapore. Consumer service (81%) industry has the highest proportion of the normal earnings type. Be careful, the lowest proportion of the normal earnings type is utilities industry (63%), which also highest proportion of the upward (14.8%) and downward (11.1%) earnings via accruals. Basic materials have lower proportion of the normal earnings type (66%), which also highest proportion of the downward (4.8%) earnings via accruals and real activities, and upward (7.1%) via real activities. Financials has the highest proportion of the

upward (5.5%) earnings via accruals and real activities. Technology has the highest proportion of the downward (8.5%) earnings via real activities.

Panel E of Table 5.5, Thailand, the results found that the industry significantly related with earnings management strategy ($p<0.001$) which contingency coefficient 0.160. The results showed the statistical differences in earnings management strategy across industries in Thailand. Health care (90%) and utilities (81%) industries has the highest proportion of the normal earnings type. Be careful, the lowest proportion of the normal earnings type is financials industry (67%), which also highest proportion of upward (4.5%) and downward (9.1%) earnings via accruals, and upward (5.3%) and downward (5.0%) earnings via accruals and real activities.

Panel F of Table 5.5, Vietnam, the results found that the industry significantly related with earnings management strategy ($p<0.001$) which contingency coefficient 0.177. The results showed the statistical differences in earnings management strategy across industries in Vietnam. Telecommunication (82%) industry has the highest proportion of the normal earnings type. Be careful, the lowest proportion of the normal earnings type is technology industry (56%), which also highest proportion of the upward (12.8%) and downward (8.1%) earnings via accruals and real activities. Consumer goods industry is the highest proportion of the upward (6.4%) and downward (16.6%) earnings via accruals and real activities. Financial industry is highest proportion of the upward (4.1%) earnings via accruals, and downward (8.1%) earnings via accruals and real activities. Telecommunication industry is highest proportion (9.1%) of the downward earnings via accruals.

In ASEAN market, the interesting industry that high quality of earnings is health care industry. Health care industry is the highest proportion of normal type of earnings management, especially, Philippines, Malaysia, Thailand and Indonesia. It mean that the earning quality is high, so the intrinsic value which estimated based on earnings is close to the stock price. Technology industry is the lowest proportion of normal type of earnings management, especially, Philippines, Vietnam and Indonesia. It mean that the earning quality is low, so the intrinsic value which estimated based on earnings is not close to the stock price. The investor should be careful to use the financial data from financial statement.

Table 5.5 Earnings management strategy by industry

Panel A: Indonesia.

Earnings Management	Basic Materials	Industrials	Consumer Goods	Health Care	Consumer Services	Telecommunications	Utilities	Financials	Technology	Total
Normal	667_{a}	$624_{b, c}$	$845_{b, c}$	128_{c}	$466_{b, c}$	$68_{b, c}$	$12_{a, b, c, d}$	$169_{a, b}$	76_{d}	3055
	70.1%	76.0%	74.4%	80.0%	75.9%	81.0%	70.6%	71.0%	56.7%	73.5%
Downward AEM	$68_{a, b, c, d, e, f, g, h}$	$45_{e, f, g, h}$	$65_{c, d, g, h}$	$10_{a, b, c, d, e, f, g, h}$	$35_{b, d, f, h}$	$6_{a, b, c, d, e, f, g, h}$	3_{a}	24_{a}	$13_{a, b, c, d, e, f, g, h}$	269
	7.1%	5.5%	5.7%	6.3%	5.7%	7.1%	17.6%	10.1%	9.7%	6.5%
Downward REM	75_{a}	49_{a}	78_{a}	9_{a}	44_{a}	4_{a}	$0_{a, b}$	12_{a}	18_{b}	289
	7.9%	6.0%	6.9%	5.6%	7.2%	4.8%	0.0%	5.0%	13.4%	7.0%
Downward A&R	$31_{a, b}$	17_{b}	28_{b}	$3_{a, b}$	14_{b}	0_{b}	$0_{a, b}$	4_{b}	8_{a}	105
	3.3%	2.1%	2.5%	1.9%	2.3%	0.0%	0.0%	1.7%	6.0%	2.5%
Upward AEM	50_{a}	43_{a}	60_{a}	6_{a}	28_{a}	4_{a}	2_{a}	18_{a}	10_{a}	221
	5.3%	5.2%	5.3%	3.8%	4.6%	4.8%	11.8%	7.6%	7.5%	5.3%
Upward REM	$25_{a, b}$	$18_{a, b}$	35_{b}	$2_{a, b}$	8_{a}	$1_{a, b}$	$0_{a, b}$	$3_{a, b}$	$4_{a, b}$	96
	2.6%	2.2%	3.1%	1.3%	1.3%	1.2%	0.0%	1.3%	3.0%	2.3%
Upward A&R	36_{a}	$25_{a, b}$	24_{b}	$2_{a, b}$	$19_{a, b}$	$1_{a, b}$	$0_{a, b}$	$8_{a, b}$	$5_{a, b}$	120
	3.8%	3.0%	2.1%	1.3%	3.1%	1.2%	0.0%	3.4%	3.7%	2.9%
Total	952	821	1,135	160	614	84	17	238	134	4,155
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Pearson Chi-Square = 73.814, Asymp. Sig. (2-sided) = 0.010

Contingency Coefficient = 0.132

$_{a, b, c, d, e}$ Each subscript letter denotes a subset of industry categories whose column proportions do not differ significantly from each other at the 0.05 level.

% is the percentage of firm within industry.

Panel B: Malaysia

Earnings Management	Basic Materials	Industrials	Consumer Goods	Health Care	Consumer Services	Telecommunications	Utilities	Financials	Technology	Total
Normal	864a	2461a	1721b	145a, b	405a	72a, b	145a, b	458a	276c	6,547
	83.2%	85.4%	88.0%	85.8%	84.0%	85.7%	86.8%	84.5%	70.8%	84.9%
Downward AEM	46a, b	104b	67b	7a, b, c	35c	4a, b, c	8a, b, c	28a, b, c	23a, c	322
	4.4%	3.6%	3.4%	4.1%	7.3%	4.8%	4.8%	5.2%	5.9%	4.2%
Downward REM	54a, b	134b, c	69c	9a, b, c	19b, c	4a, b, c	3b, c	17b, c	29a	338
	5.2%	4.6%	3.5%	5.3%	3.9%	4.8%	1.8%	3.1%	7.4%	4.4%
Downward A&R	11a, b	36a, b	14b	1a, b	2b	1a, b	1a, b	5a, b	9a	80
	1.1%	1.2%	0.7%	0.6%	0.4%	1.2%	0.6%	0.9%	2.3%	1.0%
Upward AEM	34a	70a	48a	4a, b	10a	1a, b	8a, b	19a, b	22b	216
	3.3%	2.4%	2.5%	2.4%	2.1%	1.2%	4.8%	3.5%	5.6%	2.8%
Upward REM	12a, b	25b	14b	1a, b	2b	0a, b	0b	4b	10a	68
	1.2%	0.9%	0.7%	0.6%	0.4%	0.0%	0.0%	0.7%	2.6%	0.9%
Upward A&R	18a, b	53b	22a	2a, b	9a, b	2a, b, c	2a, b	11a, b	21c	140
	1.7%	1.8%	1.1%	1.2%	1.9%	2.4%	1.2%	2.0%	5.4%	1.8%
Total	1,039	2,883	1,955	169	482	84	167	542	390	7,711
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Pearson Chi-Square = 133.391, Asymp. Sig. (2-sided) = 0.000

Contingency Coefficient = 0.130

a, b, c, d, e Each subscript letter denotes a subset of industry categories whose column proportions do not differ significantly from each other at the 0.05 level.

% is the percentage of firm within industry.

Panel C: Philippine

Earnings Management	Basic Materials	Industrials	Consumer Goods	Health Care	Consumer Services	Telecommunications	Utilities	Financials	Technology	Total
Normal	301a	305b, c	254b, c, d, e	14c	233a, e	44a, b, d, e	101b, c	329a, d, e	35f	1,616
	74.1%	82.2%	80.9%	100.0%	75.2%	77.2%	87.1%	75.6%	50.0%	77.2%
Downward AEM	31a, b	18b	14b	0a, b	23a, b	5a, b	4b	42a	8a	145
	7.6%	4.9%	4.5%	0.0%	7.4%	8.8%	3.4%	9.7%	11.4%	6.9%
Downward REM	20a	16a	18a	0a, b	20a, b	2a, b	5a	19a	9b	109
	4.9%	4.3%	5.7%	0.0%	6.5%	3.5%	4.3%	4.4%	12.9%	5.2%
Downward A&R	13a	11a	5a, b	0a, b	7a, b	0a, b	2a, b	3b	3a	44
	3.2%	3.0%	1.6%	0.0%	2.3%	0.0%	1.7%	0.7%	4.3%	2.1%
Upward AEM	23a, b, c, d, e	10f	10d, e, f	0a, b, c, d, e, f	12a, b, c, d, e, f	5c	2b, e, f	30a, c	4a, b, c, d, e, f	96
	5.7%	2.7%	3.2%	0.0%	3.9%	8.8%	1.7%	6.9%	5.7%	4.6%
Upward REM	8a	3a	5a	0a, b	7a	1a, b	1a	3a	5b	33
	2.0%	0.8%	1.6%	0.0%	2.3%	1.8%	0.9%	0.7%	7.1%	1.6%
Upward A&R	10a	8a	8a	0a, b	8a	0a	1a	9a	6b	50
	2.5%	2.2%	2.5%	0.0%	2.6%	0.0%	0.9%	2.1%	8.6%	2.4%
Total	406	371	314	14	310	57	116	435	70	2,093
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Pearson Chi-Square = 99.282, Asymp. Sig. (2-sided) = 0.000

Contingency Coefficient = 0.213

a, b, c, d, e Each subscript letter denotes a subset of industry categories whose column proportions do not differ significantly from each other at the 0.05 level.

% is the percentage of firm within industry.

Panel D: Singapore

Earnings Management	Basic Materials	Industrials	Consumer Goods	Health Care	Consumer Services	Telecommunications	Utilities	Financials	Technology	Total
Normal	355a	1453b, c, d	651d, e	100a, e	437c	52a, b, c, d, e	17a, b, d, e	262b, c, d	381a	3,708
	65.9%	76.9%	73.9%	67.1%	80.8%	75.4%	63.0%	75.9%	68.6%	74.2%
Downward AEM	37a, b, c, d, e, f, g, h, i	114f, g, h, i	46d, e, h, i	17c	25b, e, g, i	5a, b, c, d, e, f, g, h, i	4a, c, f	24a, b, c, d, e, f, g, h, i	44a, c, f	316
	6.9%	6.0%	5.2%	11.4%	4.6%	7.2%	14.8%	7.0%	7.9%	6.3%
Downward REM	44a, b	108c	65a, b, c	6a, b, c	31a, b, c	4a, b, c	1a, b, c	17b, c	47a	323
	8.2%	5.7%	7.4%	4.0%	5.7%	5.8%	3.7%	4.9%	8.5%	6.5%
Downward A&R	26a	53b	25a, b	6a, b	14a, b	2a, b	1a, b	12a, b	15a, b	154
	4.8%	2.8%	2.8%	4.0%	2.6%	2.9%	3.7%	3.5%	2.7%	3.1%
Upward AEM	27a, b, c, d, e, f	77e, f	39a, b, c, d, e, f	12c, d	10g	3a, b, c, d, e, f, g	3b, d, f	11a, e, g	33a, b, c, d, e, f	215
	5.0%	4.1%	4.4%	8.1%	1.8%	4.3%	11.1%	3.2%	5.9%	4.3%
Upward REM	22a	21b	26a, c	1b, c, d	8b, c	1a, b, c	0a, b, c, d	0d	10b, c	89
	4.1%	1.1%	3.0%	0.7%	1.5%	1.4%	0.0%	0.0%	1.8%	1.8%
Upward A&R	28a	63b	29a, b	7a, b	16a, b	2a, b	1a, b	19a	25a, b	190
	5.2%	3.3%	3.3%	4.7%	3.0%	2.9%	3.7%	5.5%	4.5%	3.8%
Total	539	1,889	881	149	541	69	27	345	555	4,995
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Pearson Chi-Square = 115.249, Asymp. Sig. (2-sided) = 0.000

Contingency Coefficient = 0.150

a, b, c, d, e Each subscript letter denotes a subset of industry categories whose column proportions do not differ significantly from each other at the 0.05 level.

% is the percentage of firm within industry.

Panel E: Thailand

Earnings Management	Basic Materials	Industrials	Consumer Goods	Health Care	Consumer Services	Telecommunications	Utilities	Financials	Technology	Total
Normal	626a, b	946a, b, c	1096d	221e	661b, c, d	59a, b, c, d, e	81c, d, e	280f	155a, f	4,125
	77.5%	79.0%	82.4%	89.5%	80.3%	81.9%	87.1%	67.0%	73.8%	79.4%
Downward AEM	30a	49a	56a	11a	42a	4a, b	3a, b	38b	10a, b	243
	3.7%	4.1%	4.2%	4.5%	5.1%	5.6%	3.2%	9.1%	4.8%	4.7%
Downward REM	69a	80a, b	83b	2c	43b	4a, b	2b, c	30a, b	21a	334
	8.5%	6.7%	6.2%	0.8%	5.2%	5.6%	2.2%	7.2%	10.0%	6.4%
Downward A&R	14a, b	31b	18a	2a, b	12a, b	0a, b, c	2a, b, c	21c	5a, b, c	105
	1.7%	2.6%	1.4%	0.8%	1.5%	0.0%	2.2%	5.0%	2.4%	2.0%
Upward AEM	23a	39a	38a	8a	29a	1a	1a	19a	7a	165
	2.8%	3.3%	2.9%	3.2%	3.5%	1.4%	1.1%	4.5%	3.3%	3.2%
Upward REM	19a, b	25a, b, c	20b, c	1c	17a, b, c	1a, b, c	1a, b, c	8a, b, c	9a	101
	2.4%	2.1%	1.5%	0.4%	2.1%	1.4%	1.1%	1.9%	4.3%	1.9%
Upward A&R	27a, b, c, d, e	27d, e, f, g	19f, g	2g	19c, e, f, g	3a, b, c, d, e, f	3a, b, c, d, e, f, g	22b	3a, c, d, e, f, g	125
	3.3%	2.3%	1.4%	0.8%	2.3%	4.2%	3.2%	5.3%	1.4%	2.4%
Total	808	1,197	1,330	247	823	72	93	418	210	5,198
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Pearson Chi-Square = 136.215, Asymp. Sig. (2-sided) = 0.000

Contingency Coefficient = 0.160

a, b, c, d, e Each subscript letter denotes a subset of industry categories whose column proportions do not differ significantly from each other at the 0.05 level.

% is the percentage of firm within industry.

Panel F: Vietnam

Earnings Management	Basic Materials	Industrials	Consumer Goods	Health Care	Consumer Services	Telecommunications	Utilities	Financials	Technology	Total
Normal	285a	1344b	360a	80b	129a, b	9a, b	114b	247a	48a	2,616
	59.1%	70.4%	60.5%	74.1%	65.2%	81.8%	73.1%	56.9%	55.8%	65.7%
Downward AEM	25a, b	71b	29a, b	4a, b	16a	1a, b	7a, b	29a	2a, b	184
	5.2%	3.7%	4.9%	3.7%	8.1%	9.1%	4.5%	6.7%	2.3%	4.6%
Downward REM	64a, b	175c	99b	10a, b, c	19a, c	1a, b, c	16a, c	40a, c	13a, b, c	437
	13.3%	9.2%	16.6%	9.3%	9.6%	9.1%	10.3%	9.2%	15.1%	11.0%
Downward A&R	31a, b, c, d, e	87c, d, e	23b, d, e	3a, b, c, d, e	9a, b, c, d, e	0a, b, c, d, e	4e	35a	7a, b, c, d	199
	6.4%	4.6%	3.9%	2.8%	4.5%	0.0%	2.6%	8.1%	8.1%	5.0%
Upward AEM	12a, b	47a, b	12b, c	3a, b	7a, b	0a, b, c	0c	18a	1a, b, c	100
	2.5%	2.5%	2.0%	2.8%	3.5%	0.0%	0.0%	4.1%	1.2%	2.5%
Upward REM	29a, b, c	83c	38b	4a, b, c	5a, c	0a, b, c	5a, b, c	17a, b, c	4a, b, c	185
	6.0%	4.3%	6.4%	3.7%	2.5%	0.0%	3.2%	3.9%	4.7%	4.6%
Upward A&R	36a, b	103b	34b	4b	13a, b	0a, b	10a, b	48a	11a	259
	7.5%	5.4%	5.7%	3.7%	6.6%	0.0%	6.4%	11.1%	12.8%	6.5%
Total	482	1,910	595	108	198	11	156	434	86	3,980
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Pearson Chi-Square = 129.047, Asymp. Sig. (2-sided) = 0.000

Contingency Coefficient = 0.177

a, b, c, d, e Each subscript letter denotes a subset of industry categories whose column proportions do not differ significantly from each other at the 0.05 level.

% is the percentage of firm within industry.

5.4 Earnings Management Strategy across Post-Colonial Era

The effect of post-colonial era in each of the Southeast Asian countries can be seen in many ways such as culture, lifestyle, language, and so on. Besides the changes of the colonial people's lives, the law and many rules were also changed. For example, during under colonialism from the Great Britain, it exported culture, language, economic, legal, educational system, and also the accounting system into its colonial countries (Kamla, 2007). For economic system, the British transferred the enterprises' law, the accounting standard of an organization, and the financial statement standard in which it is clearly seen that those of Malaysia and Singapore were based on those of the UK (Muniandy& Ali, 2012).

The colonialism influence could be indicated clearly when considering the accounting classification studies. Previous studies (Doupnik & Salter, 1995; Nobes, 1998) classified the financial reporting systems in terms of micro- and macro-based system and their classification showed that the post-colonial countries are likely to be categorized into the same group as their former colonialist. Doupnik and Salter (1995) reported that Hong Kong and Singapore were classified in the same group as the UK, suggesting that their accounting system is micro based and in the Anglo group. Similarly, Nobes (2011) regarding the characteristics of their financing system (strength of equity outsiders) had classified the accounting systems worldwide into two main groups: one found in the national practices of Australia, the UK and the US, and those found in France and Germany or Italy. Although the implementation of IFRSs is widespread, especially among developing countries including the post-colonial countries, the similar grouping was still proposed (Nobes, 2011), suggesting the remaining of colonialism influence.

Nobes (2011) suggested that a country in the Anglo group would have financial reporting practices similar to the UK, US, or IFRSs, whereas another group would have the practices comparable to France and Germany or Italy. The former group tends to have higher possibility to manage earnings, as its financial reporting practices allow management's judgment and accounting alternatives in preparing financial reports. Therefore, the post-colonial countries in the Anglo group might have higher earnings management than those in the latter group, the Continental European Model. Thus, the hypothesis of this paper is as follows:

H_0: the post-colonial countries in different group would not have different earnings management strategies.

H_1: the post-colonial countries in different group would have different earnings management strategies.

Based on the result of the earnings management classification, eleven types were found and they can be divided into three main types (i.e., normal, downward, and upward) and eleven sub-types. The three main types that may be influenced by colonialism are as shown in Table 5.8. In the independence countries, the normal main type was 79.4% (*n* = 4,127), followed by the downward main type (13.1%, n = 682) and the upward main type (7.5%, *n* = 391). In the group of the Great Britain colonialism, the normal main type was 80.7% (*n* = 10,255), followed by downward main type (12.0%, n = 1,533) and the upward main type (7.3%, *n* = 918). For the U.S. colonialism countries, the normal main type was 77.2% (*n* = 1,616), followed by the downward main type (14.2%, n = 298) and the upward main type (8.6%, *n* = 179). For the Netherland colonialism, the normal main type that was 73.5% (*n* = 3,055), followed by the downward main type (16.0%, n = 663) and the upward main type (10.5%, *n* = 437). Finally, for the France colonialism countries, the normal main type was 65.8% (*n* = 2,616), followed by the downward main type (20.6%, *n* = 820) and the upward main type (13.6%, *n* = 544).

Table 5.6 Earnings management classification by colonialism.

Earnings Management Classification		Never	Colonialism				Total
			UK	US	NL	FR	
Normal Type:							
Normal_A&R	N	$1{,}838_{b}$	$4{,}699_{a}$	$750_{a, b}$	$1{,}426_{b}$	$1{,}046_{c}$	9,759
	%	35.3	37.0	35.8	34.3	26.3	34.7
Normal_AEM	N	$1{,}293_{a}$	$3{,}104_{a}$	426_{b}	$931_{b, c}$	902_{c}	6,656
	%	24.9	24.4	20.4	22.4	22.7	23.7
Normal_REM	N	996_{a}	$2{,}452_{a}$	440_{a}	698_{b}	668_{b}	5,254
	%	19.2	19.3	21.0	16.8	16.8	18.7
Downward Earnings Type:							
Downward_A&R	N	$105_{a, b}$	234_{a}	$44_{a, b}$	105_{b}	199_{c}	687
	%	2.0	1.8	2.1	2.5	5.0	2.4
Downward_AEM	N	243_{a}	638_{a}	145_{b}	269_{b}	184_{a}	1,479
	%	4.7	5.0	6.9	6.5	4.6	5.3
Downward_REM	N	334_{b}	661_{a}	109_{a}	289_{b}	437_{c}	1,830
	%	6.4	5.2	5.2	7.0	11.0	6.5
Upward Earnings Type:							
Upward_A&R	N	109_{a}	274_{a}	35_{a}	98_{a}	224_{b}	740
	%	2.1	2.2	1.7	2.4	5.6	2.6
Upward_A&R_H	N	16_{b}	$56_{a, b}$	$15_{a, c}$	$22_{a, b, c}$	35_{c}	144
	%	0.3	0.4	0.7	0.5	0.9	0.5
Upward_AEM	N	$135_{a, b}$	386_{a}	$70_{a, c}$	162_{c}	96_{b}	849
	%	2.6	3.0	3.3	3.9	2.4	3.0
Upward_AEM_H	N	30_{b}	45_{a}	26_{c}	59_{c}	4_{d}	164
	%	0.6	0.4	1.2	1.4	0.1	0.6
Upward_REM	N	101_{b}	157_{a}	$33_{a, b}$	96_{b}	185_{c}	572
	%	1.9	1.2	1.6	2.3	4.6	2.0
Total	N	5,200	12,706	2,093	4,155	3,980	28,134

Pearson Chi-Square = 939.129, Asymp. Sig. (2-sided) = 0.000

Contingency Coefficient = 0.180

$_{a, b, c, d}$ Each subscript letter denotes a subset of Colonialism categories whose column proportions do not differ significantly from each other at the 0.05 level.

% is the percentage of firms within the colonialism.

The Pearson's chi-square test showed that there were differences in earnings management strategies among the four groups. The cluster proportions of the former-France-colonialism countries differed significantly (p<0.05) from the other colonialism groups, regarding the "Normal_A&R" cluster, "Downward_A&R" cluster, "Downward_REM" cluster, "Upward_A&R" cluster, "Upward_AEM_H" cluster, and "Upward_REM" cluster (see Table 5.6).Interestingly, this result was not agreeable with the research expectation that the post-colonial countries in the Anglo group would have higher earnings management than those in the Continental European group. However, the research supported that the financial reporting practices based on the Anglo system are likely to decrease the earnings management and thus enhance the quality of financial reports.

From Figure 5.4, the UK colonialism (80.7%) has the highest proportion of the "Normal". It means that the UK colonialism has a low earnings management. One-fifth of the firms in the UK colonialism have employed an earnings management strategy to manage earnings. Only 6.0 proportion of the UK colonialism has managed earnings upward though accruals. This implies that UK colonialism companies have high earnings quality of financial statement. On the other hand, France colonialism (65.7%) has the lowest proportion of the "Normal". It means that the France colonialism has a high earnings management than the UK colonialism. One-third of the firms in the France colonialism have an earnings management strategy to manage earnings. 20.6, 13.7 proportion of the France colonialism has managed earnings downward and upward, respectively. 9.0 proportion of the France colonialism has managed earnings upward though accruals. The results of the Pearson's Chi-square test implied that the colonialism variable was significantly related with the earnings management classification (p<0.001) with the contingency coefficient of 0.180.

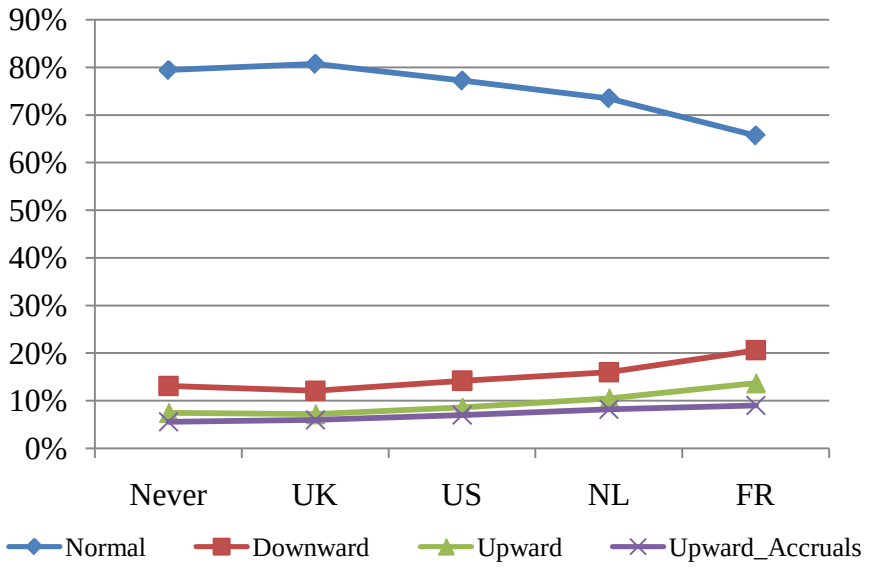

Figure 5.4 Earnings management classification by colonialism

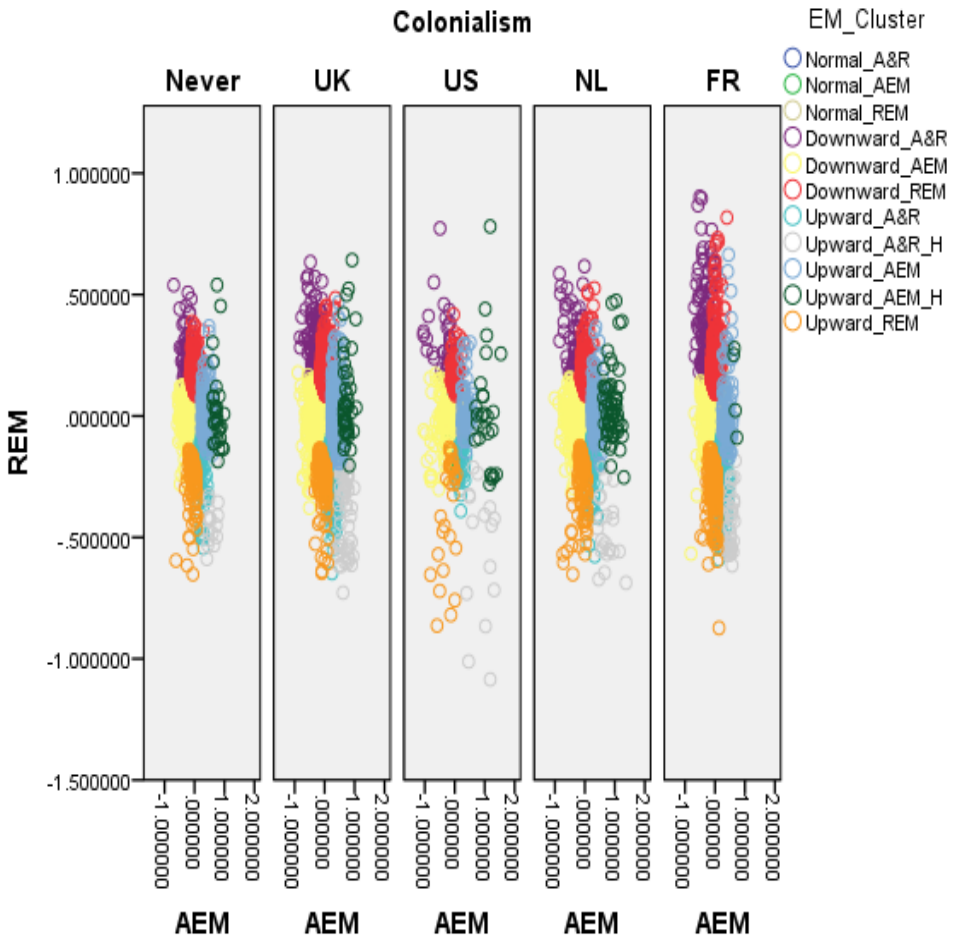

Figure 5.5 The scatter plots of the eleven clusters of earnings management by colonialism.

Scatter diagrams are used to show both the accruals and real earnings management classifications of each of six ASEAN countries. The AEM is on the horizontal axis whilst the REM is on the vertical axis. Each point presents accruals and real earnings managements. The coloring of the points is the result of the clustering of the firm samples based on their quadrants earnings management. The clustering plots show the distance of each type of earnings management between firms. Figure 5.5 shows the scatter plots of the eleven clusters of earnings management of all six ASEAN countries. The clustering plots show a clear correlation between these two earnings management mechanisms on quadrants earnings management and colonialism.

CHAPTER VI

THE INFLUENCE OF ACCOUNTING DIVERSITY ON EARNINGS MANAGEMENT

6.1 Descriptive statistics

Table 6.1 reports descriptive statistics of key variables the final sample over the period 1990–2014. To mitigate the effects of outliers, following with Gray et al., (2015), all financial data variables are winsorized at the 1st and 99th percentiles. In Panel A of table 5.9, the sample consists of 27,696 firm-year observations. Over the sample period, the mean Abs_AEM is 0.10 while the mean Abs_REM is 0.07. The mean LEV over the same period is 0.47; the mean CURRENT is 2.51; the mean ROA is 0.05; the mean Growth is 0.17. In Panel B, after observations with missing data on national culture and legal have been excluded, the sample consists of 23,761 firm-year observations. Vietnam data is excluded because of lacked of data on national legal index. The mean value of Abs_AEM and Abs_REM is still the same. The others variables are not any significance change in the man value of the variables. For example, the mean LEV is 0.46; the mean ROA is 0.05; the mean Growth is 0.16; the mean CURRENT is 2.55.

Table 6.2 reports correlation coefficients of key firm-level variables for the final sample of 23,761 observations. The correlation between Abs_AEM and Abs_REM is positive and statistically significant at the 1% level, thereby providing some preliminary evidence to suggest a positive relationship between level of accruals and level of real earnings management. These relationship are support the previous study that manager use both accruals and real earnings management to manage their earnings goal. The correlation between Abs_AEM (Abs_REM) and UAI, DISC, ENFORC are negative and statistically significant at the 1% level (Only Abs_REM and ENFORC is statistically significant at the 5% level), thereby providing some preliminary evidence to suggest a negative relationship between level of accruals (real) earnings management and uncertainty avoidance value (UAI), disclosure requirement index (DISC), and enforcement index (ENFORC). These relationship are support the hypotheses (2c, 2d, 3a, 3b, 3c, and 3d). The correlation between Abs_AEM (Abs_REM) and IND is also negative and statistically significant at the

1% level, thereby providing some preliminary evidence to suggest a negative relationship between level of accruals (real) earnings management and individualism value (IDV). The correlation is opposite of hypotheses (hypothesis 2a and 2b). Therefore the correlation does not concern the impact of the other control variables. As can be seen, all VIF values of these variables are below the critical value of 10 suggesting multicollinearity is not a serious concern (Gray et al., 2015).

Table 6.1 Descriptive statistics

Panel A of this table reports summary statistics for key variables for the sample of 27,696 firm-year observations over the period 1990-2014. Panel A of this table reports summary statistics for key variables for the sample of 23,761 firm-year observations with the inclusion of national culture and legal. Please see other variable definitions in Table 3.

Variables	N	Mean	Median	Std. Dev.	Minimum	Maximum
Panel A						
Abs_AEM	27,696	0.10	0.06	0.11	0.00	0.64
Abs_REM	27,696	0.07	0.05	0.08	0.00	0.45
SIZE	27,696	11.45	11.31	1.71	7.20	16.92
CUR	27,696	2.51	1.56	3.31	0.12	26.16
LEV	27,696	0.47	0.45	0.27	0.02	1.73
ROA	27,696	0.06	0.06	0.11	-0.43	0.39
Growth	27,696	0.17	0.08	0.59	-0.84	4.35
Panel B						
Abs_AEM	23,761	0.10	0.06	0.12	0.00	0.64
Abs_REM	23,761	0.07	0.04	0.07	0.00	0.45
IDV	23,761	0.22	0.20	0.05	0.14	0.32
IND	23,761	0.48	0.46	0.07	0.38	0.57
LTO	23,761	0.48	0.41	0.16	0.27	0.72
MAS	23,761	0.47	0.48	0.08	0.34	0.64
PDI	23,761	0.82	0.78	0.14	0.64	1.00
UAI	23,761	0.39	0.36	0.19	0.08	0.64
DISC	23,761	0.88	0.98	0.17	0.52	1.00
ENFORC	23,761	0.76	0.77	0.08	0.62	0.87
SIZE	23,761	11.69	11.53	1.64	7.20	16.92
CUR	23,761	2.55	1.59	3.35	0.12	26.16
LEV	23,761	0.46	0.44	0.28	0.02	1.73
ROA	23,761	0.05	0.05	0.11	-0.43	0.39
Growth	23,761	0.16	0.08	0.57	-0.84	4.35
ISSUE	23,761	0.38	0.00	0.49	0.00	1.00
LOSS	23,761	0.22	0.00	0.42	0.00	1.00

Table 6.2 Correlations matrix

This table reports correlation coefficients between key variables for a sample of 23,761 firm-year observations covering the period 1990–2014. Please see other variable definitions in Table 3. Symbols *, **, and *** represent statistically significance at the 10%, 5%, and 1% levels, respectively.

	VIF[a]	VIF[b]	Abs_AEM	Abs_REM	IDV	UAI	DISC	ENFORC	SIZE	CUR	LEV	ROA
Abs_AEM		1.06	1									
Abs_REM	1.08		0.306***	1								
IDV	2.15	2.14	-0.089***	-0.115***	1							
UAI	3.84	3.84	-0.042***	-0.021***	-0.11***	1						
DISC	3.88	3.88	-0.076***	-0.06***	0.604***	-0.383***	1					
ENFORC	9.11	9.11	-0.012*	-0.018***	0.563***	-0.733***	0.802***	1				
SIZE	1.19	1.17	-0.08***	-0.109***	-0.029***	-0.082***	-0.011*	0.051***	1			
CUR	1.26	1.24	0.049***	0.019***	0.057***	-0.018***	0.026***	0.026***	-0.148***	1		
LEV	1.4	1.38	0.132***	0.078***	-0.146***	0.056***	-0.154***	-0.119***	0.107***	-0.46***	1	
ROA	1.71	1.67	0.009	0.049***	-0.056***	0.093***	-0.061***	-0.086***	0.17***	0.05***	-0.228***	1
Growth	1.07	1.06	0.145***	0.176***	-0.046***	0.012	-0.066***	-0.043***	0.046***	-0.021***	0.028***	0.141***

[a] VIFs are calculated by regress the equation (5) and [b] VIFs are calculated by regress the equation (6).

6.2 Empirical Models

Table 6.3 presents the results of panel OLS regressions of accruals earnings management. We use abnormal total accruals (AEM) as a proxy for accruals earnings management. Firm- and year-fixed effects are included in column (1) and the results of our baseline regressions that include only firm-level control variables. Consistent with the literature (see e.g., Gray et al., 2015; Han et al., 2010; Swastika, 2013; Sun & Rath, 2009), we find that firm size (SIZE) has a negative effect and statistical significant on accruals earnings management which is consistent with our expectations. Consistent with the literature (see e.g., Pacheco Paredes & Wheatley, 2017; Klein, 2002; Usman & Yero, 2012), we find that firm leverage (LEV) has a positive effect and statistical significant on accruals earnings management which is consistent with our expectations. Consistent with the literature (see e.g., Pacheco Paredes & Wheatley, 2017; Doukakis, 2013), we find that firm profitability (ROA) has a positive effect and statistical significant on accruals earnings management. Consistent with the literature (see e.g., Doukakis, 2013), we find that firm growth (Growth) has a positive effect and statistical significant on accruals earnings management which is consistent with our expectations. We find that current ratio (CUR), loss (LOSS), and issuance of equity (ISSUE) have a positive effect and statistical significant on accruals earnings management. The results suggest that loss firms undertake more earnings management to improve performance and issuing shares firms has more incentives to manage earnings to attract investors.

Consistent with the literature (see e.g., Graham et al., 2015), we find that real earnings management level (Abs_REM) has a positive effect and statistical significant on accruals earnings management which is consistent with our expectations. Confirm that firm usally used both accruals and real earning management to manage their earnings to their earnings goal. We add industry- and year-fixed effects are included in column (2) and the results of our baseline regressions that include only firm-level control variables. The coefficient on firm variables remains the same.

To test Hypothesis 1a, we add post-colonial era dummy variables (COL_UK, COL_US, COL_NL, and COL_FR) in column (3) to test whether firms with post-colonial era perform accruals earnings management than other firms without post-colonial era. The results show that the coefficients on COL_UK, COL_US, and COL_NL are positive and statistically significant, which is consistent with our expectations, providing empirical evidence to suggest that firms in the country was

conquered by the Great Britain, United States, and Netherland manage accruals earnings management more than firms in the country was not conquered by other. The coefficient on COL_FR is negative but statistically insignificant, providing no empirical evidence to suggest that firms in the country was conquered by the France manage accruals earnings management less than firms in the country was not conquered by other. While the pattern of other control variables is the same with column (1).

To test Hypothesis 2a and 2b, we add cuture variables (IDV, and UAI) in column (4) to test whether firms with cuture value mange accruals earnings management than other firms. To test Hypothesis 2a, we add individualism value variable (IDV) to test whether firms with high individualism value manage accruals earnings management than other firms. To test Hypothesis 2b, we add uncertainty avoidance value variable (UAI) to test whether firms with high uncertainty avoidance value manage accruals earnings management than other firms. Consistent with the literature (see e.g., Han et al., 2010; Astami et al., 2017; Pacheco Paredes & Wheatley, 2017), the results show that the coefficient on UAI have a negative and statistically significant effect on accruals earnings management which is consistent with our expectations. The finding provide empirical evidence to suggest that firms in the country with high value of individual and uncertainty avoidance manage accruals earnings management less than other. Inconsistent with previous study (see e.g., Gray et al., 2015), the results show that the coefficient on IDV have a negative and statistically significant effect on accruals earnings management which is inconsistent with our expectations.. The finding provide empirical evidence to suggest that firms in the country with high value of individual and uncertainty avoidance manage accruals earnings management less than other. While the pattern of other control variables is the same with column (1).

To test Hypothesis 3a and 3b, we add legal variables (ENFORC, and DISC) in column (5) to test whether firms with leagal value mange accruals earnings management than other firms. To test Hypothesis 3a, we add enforcement index variable (ENFORC) to test whether firms with high enforcement index value manage accruals earnings management less than other firms. The results show that the coefficient on ENFORC has a positive and statistically significant effect on accruals earnings management, which is inconsistent with our expectations. The finding provide empirical evidence to suggest that firms in the country with high value of

enforcement manage accruals earnings management more than other. To test Hypothesis 3b, we add disclosure regulation index variable (DISC) to test whether firms with high disclosure regulation index value manage accruals earnings management less than other firms. The results show that the coefficient DISC has a negative and statistically significant effect on accruals earnings management which is consistent with our expectations. The finding provide empirical evidence to suggest that firms in the country with high value of disclosure regulation manage accruals earnings management less than other. While the pattern of other control variables is the same with column (1). Additional test, we add cuture and legal variables (DISC, ENFORC, IDV, and UAI) in column (6) to test whether firms with diferrence cuture and legal mange accruals earnings management differently. The results show that the coefficients on DISC, ENFORC, and IDV are remain the same, but the coefficient on UAI is still negative and statistically insignificant. While the pattern of other control variables is the same with column (1).

Table 6.3 Effect of post-colonial era, culture, and disclosure regulation on AEM

This table presents panel OLS regressions of accruals earnings management. Please see other variable definitions in Table 3. Symbols *, **, and *** represent statistically significance at the 10%, 5%, and 1% levels, respectively.

Variables	(1) Abs_AEM	(2) Abs_AEM	(3) Abs_AEM	(4) Abs_AEM	(5) Abs_AEM	(6) Abs_AEM
Constant	0.072***	0.055***	0.062***	0.089***	0.024*	0.056**
	(0.016)	(0.008)	(0.009)	(0.009)	(0.013)	(0.022)
Abs_REM	0.336***	0.371***	0.377***	0.000***	0.396***	0.391***
	(0.010)	(0.009)	(0.009)	(0.000)	(0.011)	(0.011)
COL_UK			0.010***			
			(0.002)			
COL_US			0.011***			
			(0.004)			
COL_NL			0.019***			
			(0.003)			
COL_FR			-0.003			
			(0.003)			
IDV				-0.092***		-0.089***
				(0.018)		(0.026)
UAI				-0.031***		-0.015
				(0.005)		(0.009)
ENFORC					0.159***	0.132***
					(0.019)	(0.033)
DISC					-0.079***	-0.059***
					(0.009)	(0.010)
SIZE	-0.005***	-0.003***	-0.004***	-0.003***	-0.005***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
LEV	0.057***	0.051***	0.052***	0.05***	0.06***	0.059***
	(0.004)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
ROA	0.116***	0.072***	0.077***	0.075***	0.084***	0.085***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Growth	0.010***	0.017***	0.017***	0.017***	0.017***	0.017***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CURRENT	0.004***	0.004***	0.004***	0.004***	0.004***	0.004***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Loss	0.020***	0.033***	0.032***	0.034***	0.032***	0.032***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ISSUE	0.014***	0.019***	0.019***	0.019***	0.016***	0.016***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Firm-fixed effects	Yes	No	No	No	No	No
Industry-fixed effects	No	Yes	Yes	Yes	Yes	Yes
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.335	0.150	0.153	0.153	0.156	0.158
Adjusted R^2	0.252	0.149	0.152	0.152	0.155	0.156
F-statistic	4.05***	128.22***	118.84***	124.91***	109.84***	105.80***
Firms included	3,035	3,034	3,034	3,034	2,365	2,365
Firm-year observations	27,696	27,694	27,694	27,694	23,759	23,759

Table 6.4 presents the results of panel OLS regressions of real earnings management. We use abnormal CFO (REM) as a proxy for accruals earnings management. Firm- and year-fixed effects are included in column (1) and the results of our baseline regressions that include only firm-level control variables. Consitent with accruals earnings management, the pattern of other control variables is unchange, we find that firm size (SIZE) has a negative effect and statistical significant on real earnings management and we find that firm leverage (LEV), firm profitability (ROA), firm growth (Growth), issuance of equity (ISSUE), and real earnings management (REM) have a positive effect and statistical significant on real earnings management. Inconsitent with accruals earnings management, we find that current ratio (CUR), and loss (LOSS) still have a positive effect but statistical insignificant on real earnings management. In column (2), we add industry- and year-fixed effects are included and the results of our baseline regressions that include only firm-level control variables. The coefficient on firm variables remains the same.

To test Hypothesis 1b, we add post-colonial era dummy variables (COL_UK, COL_US, COL_NL, and COL_FR) in column (3) to test whether firms with post-colonial era perform real earnings management than other firms without post-colonial era. The results show that the coefficients on COL_UK, and COL_US are neagtive and statistically significant, providing empirical evidence to suggest that firms in the country was conquered by the Great Britain, and United States manage real earnings management less than firms in the country was not conquered by other. The coefficient on COL_NL are neagtive but statistically insignificant. The coefficient on COL_FR is positive and statistically significant, providing empirical evidence to suggest that firms in the country was conquered by the France manage real earnings management more than firms in the country was not conquered by other.

To test Hypothesis 2c and 2d, we add cuture variables (IDV, and UAI) in column (4) to test whether firms with cuture value mange real earnings management than other firms. To test Hypothesis 2c, we add individualism value variable (IDV) to test whether firms with high individualism value manage real earnings management than other firms. To test Hypothesis 2d, we add uncertainty avoidance value variable (UAI) to test whether firms with high uncertainty avoidance value manage real earnings management than other firms. Consitent with accruals earnings management, the results show that the coefficients on IDV, and UAI have a negative and statistically significant effect on real earnings management. The finding provide

empirical evidence to suggest that firms in the country with high value of individual and uncertainty avoidance manage real earnings management less than other.

To test Hypothesis 3c and 3d, we add legal variables (ENFORC, and DISC) in column (5) to test whether firms with leagal value mange real earnings management than other firms. To test Hypothesis 3a, we add enforcement index variable (ENFORC) to test whether firms with high enforcement index value manage real earnings management less than other firms. Consitent with accruals earnings management, the results show that the coefficient on ENFORC has a positive and statistically significant effect on real earnings management. The finding provide empirical evidence to suggest that firms in the country with high value of enforcement manage real earnings management more than other. To test Hypothesis 3b, we add disclosure regulation index variable (DISC) to test whether firms with high disclosure regulation index value manage real earnings management less than other firms. Consitent with accruals earnings management, the results show that the coefficient DISC has a negative and statistically significant effect on real earnings management. The finding provide empirical evidence to suggest that firms in the country with high value of disclosure regulation manage real earnings management less than other. Additional test, we add cuture and legal variables (DISC, ENFORC, IDV, and UAI) in column (6) to test whether firms with diferrence cuture and legal mange real earnings management differently. Consitent with accruals earnings management, the results show that the coefficients on DISC, ENFORC, and IDV are remain the same. Differently, the coefficient on UAI is positive and statistically significant.

Table 6.4 Effect of post-colonial era, culture, and disclosure regulation on REM

This table presents panel OLS regressions of real earnings management. Please see other variable definitions in Table 3. Symbols *, **, and *** represent statistically significance at the 10%, 5%, and 1% levels, respectively.

Variables	(1) Abs_REM	(2) Abs_REM	(3) Abs_REM	(4) Abs_REM	(5) Abs_REM	(6) Abs_REM
Constant	0.075***	0.135***	0.104***	0.172***	0.086***	0.040***
	(0.010)	(0.006)	(0.006)	(0.007)	(0.009)	(0.016)
Abs_AEM	0.143***	0.176***	0.176***	0.171***	0.155***	0.151***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
COL_UK			-0.005***			
			(0.002)			
COL_US			-0.009***			
			(0.003)			
COL_NL			-0.001			
			(0.002)			
COL_FR			0.03***			
			(0.002)			
IDV				-0.121***		-0.182***
				(0.014)		(0.018)
UAI				-0.023***		0.026***
				(0.004)		(0.007)
ENFORC					0.055***	0.152***
					(0.013)	(0.023)
DISC					-0.026***	-0.021***
					(0.006)	(0.007)
SIZE	-0.003***	-0.008***	-0.005***	-0.008***	-0.005***	-0.006***
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LEV	0.013***	0.024***	0.016***	0.021***	0.017***	0.015***
	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ROA	0.044***	0.043***	0.029***	0.043***	0.031***	0.030***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Growth	0.012***	0.014***	0.014***	0.014***	0.015***	0.015***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CURRENT	0.001***	0.000	0.000**	0.000**	0.000***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Loss	0.002	-0.001	0.003*	0.000	0.002	0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ISSUE	0.011***	0.014***	0.015***	0.013***	0.014***	0.014***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Industry-fixed effects	No	Yes	Yes	Yes	Yes	Yes
Firm-fixed effects	Yes	No	No	No	No	No
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.410	0.161	0.177	0.168	0.149	0.156
Adjusted R^2	0.337	0.160	0.176	0.167	0.147	0.155
F-statistic	5.59***	139.99***	141.42***	139.87***	103.50***	104.70***
Firms included	3,035	3,034	2,721	3,034	2,365	2,365
Firm-year observations	27,696	27,694	24,932	27,694	23,759	23,759

6.3 Additional Tests: The other Dimensions of Culture

The Hofstede's culture dimension is divided into six cultural dimensions, including Individualism (IDV), Power distance (PDI), Uncertainty avoidance (UAI) and Masculinity (MAS), long-term orientation (LTO), and indulgence (IND) (Hofstede et al., 2010). Therefore, we also test the effect of other dimensions of culture on earnings management. Table 6.5 (6.6) presents the results of panel OLS regressions of accruals (real) earnings management. We use Abs_AEM (Abs_REM) as a proxy for accruals (real) earnings management. Industry- and year-fixed effects are included in all modeland the results of our baseline regressions that include firm-level control and legal variables. Column (1)-(4), the interesrt culture dimension is UAI. For additional test, we add the other dimensions of culture for control the effect of culture dimension; IND in column (1), LTO in column (2), MAS in column (3), and PDI in column (4). Column (5)-(8), the interesrt culture dimension is IDV. For additional test, we add the other dimensions of culture for control the effect of culture dimension; IND in column (5), LTO in column (6), MAS in column (7), and PDI in column (8). The coefficient on firm variables, ENFORC, DISC, IDV, and UAI are remains the same as the previous test. When the model are controlled by the other dimension of culture, the effect on earnings management are the as previous, except UAI. The coefficient of UAI, which the model controls with the LTO, the effect is change from negative effect to positive effect.

Table 6.5 Effect of post-colonial era, culture, and disclosure regulation on AEM

This table presents panel OLS regressions of accruals earnings management. Please see other variable definitions in Table 3. Symbols *, **, and *** represent statistically significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	Abs_AEM	Abs_AEM	Abs_AEM	Abs_AEM	Abs_AEM	Abs_AEM	Abs_AEM	Abs_AEM
C	0.151***	-0.011	0.088***	0.113***	0.011	0.029**	0.027**	0.017
	(0.028)	(0.034)	(0.020)	(0.022)	(0.016)	(0.013)	(0.013)	(0.014)
ENFORC	-0.007	0.132***	0.133***	0.061**	0.197***	0.132***	0.131***	0.179***
	(0.038)	(0.033)	(0.033)	(0.029)	(0.023)	(0.033)	(0.033)	(0.019)
DISC	-0.01	-0.05***	-0.082***	-0.054***	-0.082***	-0.055***	-0.038*	-0.062***
	(0.018)	(0.011)	(0.012)	(0.010)	(0.013)	(0.011)	(0.020)	(0.009)
IDV					-0.132***	-0.053	-0.17***	-0.15***
					(0.027)	(0.041)	(0.044)	(0.034)
IND	-0.085***				0.041			
	(0.024)				(0.025)			
LTO		0.05***				0.02		
		(0.014)				(0.012)		
MAS			-0.054***				0.049	
			(0.016)				(0.030)	
PDI				-0.023***				0.016
				(0.007)				(0.010)
UAI	-0.047***	0.022	-0.032***	-0.037***				
	(0.009)	(0.017)	(0.008)	(0.008)				
ABS_REM	0.391***	0.391***	0.391***	0.391***	0.391***	0.391***	0.391***	0.391***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)

Variables	(1) Abs_AEM	(2) Abs_AEM	(3) Abs_AEM	(4) Abs_AEM	(5) Abs_AEM	(6) Abs_AEM	(7) Abs_AEM	(8) Abs_AEM
SIZE	-0.005***	-0.005***	-0.005***	-0.005***	-0.005***	-0.005***	-0.005***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
LEV	0.059***	0.059***	0.059***	0.059***	0.059***	0.059***	0.059***	0.059***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
ROA	0.085***	0.085***	0.085***	0.085***	0.085***	0.085***	0.085***	0.085***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Growth	0.017***	0.017***	0.017***	0.017***	0.017***	0.017***	0.017***	0.017***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CURRENT	0.004***	0.004***	0.004***	0.004***	0.004***	0.004***	0.004***	0.004***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LOSS	0.032***	0.032***	0.032***	0.032***	0.032***	0.032***	0.032***	0.032***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ISSUE	0.016***	0.016***	0.016***	0.016***	0.016***	0.016***	0.016***	0.016***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Industry-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.158	0.158	0.158	0.158	0.158	0.158	0.158	0.158
Adjusted R^2	0.156	0.156	0.156	0.156	0.156	0.156	0.156	0.156
F-statistic	105.80***	105.80***	105.80***	105.80***	105.80***	105.80***	105.80***	105.80***
Firms included	2,365	2,365	2,365	2,365	2,365	2,365	2,365	2,365
Firms-year observations	23,759	23,759	23,759	23,759	23,759	23,759	23,759	23,759

Table 6.6 Effect of post-colonial era, culture, and disclosure regulation on REM

This table presents panel OLS regressions of real earnings management. Please see other variable definitions in Table 3. Symbols *, **, and *** represent statistically significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	Abs_REM	Abs_REM	Abs_REM	Abs_REM	Abs_REM	Abs_REM	Abs_REM	Abs_REM
C	0.234***	-0.096***	0.105***	0.157***	0.118***	0.086***	0.09***	0.107***
	(0.020)	(0.024)	(0.015)	(0.016)	(0.012)	(0.009)	(0.009)	(0.010)
ENFORC	-0.129***	0.154***	0.154***	0.009	0.039**	0.151***	0.154***	0.07***
	(0.027)	(0.023)	(0.023)	(0.021)	(0.017)	(0.023)	(0.024)	(0.013)
DISC	0.078***	-0.002	-0.068***	-0.01	0.019**	-0.027***	-0.057***	-0.015**
	(0.013)	(0.008)	(0.009)	(0.007)	(0.010)	(0.008)	(0.014)	(0.007)
IDV					-0.109***	-0.243***	-0.042	-0.078***
					(0.019)	(0.029)	(0.031)	(0.024)
IND	-0.173***				-0.07***			
	(0.017)				(0.018)			
LTO		0.102***				-0.035***		
		(0.010)				(0.009)		
MAS			-0.11***				-0.084***	
			(0.011)				(0.022)	
PDI				-0.047***				-0.027***
				(0.005)				(0.007)
UAI	-0.038***	0.102***	-0.008	-0.02***				
	(0.007)	(0.012)	(0.006)	(0.006)				
ABS_AEM	0.151***	0.151***	0.151***	0.151***	0.151***	0.151***	0.151***	0.151***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)

Variables	(1) Abs_REM	(2) Abs_REM	(3) Abs_REM	(4) Abs_REM	(5) Abs_REM	(6) Abs_REM	(7) Abs_REM	(8) Abs_REM
SIZE	-0.006***	-0.006***	-0.006***	-0.006***	-0.006***	-0.006***	-0.006***	-0.006***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LEV	0.015***	0.015***	0.015***	0.015***	0.015***	0.015***	0.015***	0.015***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ROA	0.030***	0.030***	0.030***	0.030***	0.030***	0.030***	0.030***	0.030***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Growth	0.015***	0.015***	0.015***	0.015***	0.015***	0.015***	0.015***	0.015***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CURRENT	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LOSS	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ISSUE	0.014***	0.014***	0.014***	0.014***	0.014***	0.014***	0.014***	0.014***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Industry-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.156	0.156	0.156	0.156	0.156	0.156	0.156	0.156
Adjusted R^2	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
F-statistic	104.70***	104.70***	104.70***	104.70***	104.70***	104.70***	104.70***	104.70***
Firms included	2,365	2,365	2,365	2,365	2,365	2,365	2,365	2,365
Firms-year observations	23,759	23,759	23,759	23,759	23,759	23,759	23,759	23,759

CHAPTER VII
CONCLUSION

This chapter is organized as follows: discussion and conclusion, implications, and limitations and future research.

7.1 Discussion and Conclusion

The main objective of this study was to examine and explore the relation between accounting diversity and earnings management behavior. This study focused on both accrual and real earnings managements. Its hypothesis was that earnings management behavior and accounting diversity are correlated. This study used the t-test, the chi-square test, cluster analysis, and multiple regression analysis to test the hypothesis. In this research, the initial sample was panel data of 3,951 ASEAN listed companies, which covered the periods from 1990 to 2014 with a total of 28,134 firm-year observations. The findings are discussed as follows.

7.1.1 Comparison Earnings Management of AEC countries

The second objective of this study was to investigate earnings management strategies is likely to have an association with country. The different countries have different earnings management level. The result shows the significant difference of mean value data. When determining earnings management strategies all together, the research revealed eleven kinds on the pattern of earnings management by using the cluster analysis. The earnings management strategies can be categorized based on four quadrants into three main types: normal earning type, downward earnings type, and upward earnings type. The classification technique is called quadrants earnings management (QEM). The results show that every country contains eleven sub-types of earnings management classification; in addition to the pattern of each type in each kind of country is also similarity. The different countries have different earnings management strategies. The result shows the earnings management strategy are significantly different between ASEAN countries ($p<0.001$) which contingency coefficient 0.199. This implies that country influences toward earnings management classification. Malaysia has highest earnings quality (lower earnings management) than other countries which the large proportion of normal group (84.9%). Additional,

it found that the earnings management strategies are significantly different between industries in each country.

Moreover, from the quadrants earnings management technique based on the random matrix theory (Quintana et al., 2015) found that the proportion of normal type in ASEAN is close to 80%. However, the upward earnings management of firm (8.7%) is an important for financial information for foreign investors. For example, this can protection the investors before making a decision to invest on a type of industry (Enomoto et al., 2015; Balakrishnan et al., 2016) reducing the risk of financial investment on foreign corporate investment (Balakrishnan et al., 2016), the outsider investor understand the right financial system and confidential to invest (Enomoto et al., 2015; Balakrishnan et al., 2016) and so on. Additionally, the foreign investor can be comparing the same industry of each country in ASEAN which country more security and give back more benefit on earnings forecast (Enomoto et al., 2015; Balakrishnan et al., 2016; Swastika, 2013; Jackson et al., 2015; Gray, 1983; Kamla, 2007; Nobes, 1998). Hence, the quadrant earnings management technique is one technique helpful for making a decision investment in a foreign country.

7.1.2 The Influence of Colonialism on Earnings Management Classification

The research results supported that the colonialism is likely to have an association with earnings management strategies. The post-colonial countries in the different colonialism influence have different AEM and REM strategies. When determining earnings management strategies all together, the research revealed eleven kinds on the pattern of earnings management by using the cluster analysis. The earnings management strategies can be categorized into three main types: Normal_A&R, Downward_A&R, and Upward_A&R, and eight sub-types: Normal_AEM, Normal_REM, Downward_AEM, Downward_REM, Upward__A&R_H, Upward__AEM, and Upward__AEM_H, Upward__REM.

In regards to colonialism in the six ASEAN countries, the results show that all groups of colonialism contain eleven types of the earnings management classification. In addition, the pattern of each type in each kind of colonialism shows a similar position. Furthermore, all samples test of all six ASEAN countries, there were 77.02% of normal earnings management, 14.20% downward earnings management, and 8.77% upward earnings management. In addition, the former-France-colonialism countries have a different earnings management strategies from other countries,

suggesting the strong influence of the colonialism. Hence, it could be concluded that colonialism is likely to be related with earnings management strategies.

7.1.3 The Influence of Accounting Diversity on Earnings Management

This study is motivated by the interested in the influences of culture of ASEAN countries, which are varieties, on business especially the effect on accounting. Additionally, the history of varieties of culture in ASEAN country has received the influencing from Western country in a period time. This is an important point, which this research cannot discard, as a post-colonial era. This study found that firms in the country were conquered by the Great Britain, United States, and Netherland manage accruals earnings management more than firms in the country were not conquered by other. On the other hand, firms in the country was conquered by the France manage accruals earnings management less than firms in the country was not conquered by other, but statistically insignificant. For real earning management, firms in the country was conquered by the Great Britain, and United States manage real earnings management less than firms in the country was not conquered by other. On the other hand, firms in the country was conquered by the France manage real earnings management more than firms in the country was not conquered by other. While the patterns of other control variables is the same.

From the results found that in the country was conquered by the France is out of the group or differ from other countries because Nobes (1998) classified the financial reporting system depending on developed western countries as shown that under the micro-based and macro-uniform explain the Anglo-Saxon and Continental European Models. These classes found that France is separated from U.S. and U.K influence. France is a species depending macro-uniform of class while U.S., U.K., and Netherland are underling the micro-based. Otherwise, the researches' results of Doupnik and Perera (2007) and Hoyle (2011) support research foundation of Nobes (1998). Hence, the result of this paper follows that rules as shown at Figure 7.1 which is influenced by business economics theory (Nobes, 1998; Doupnik & Perera, 2007; Hoyle et al., 2011).

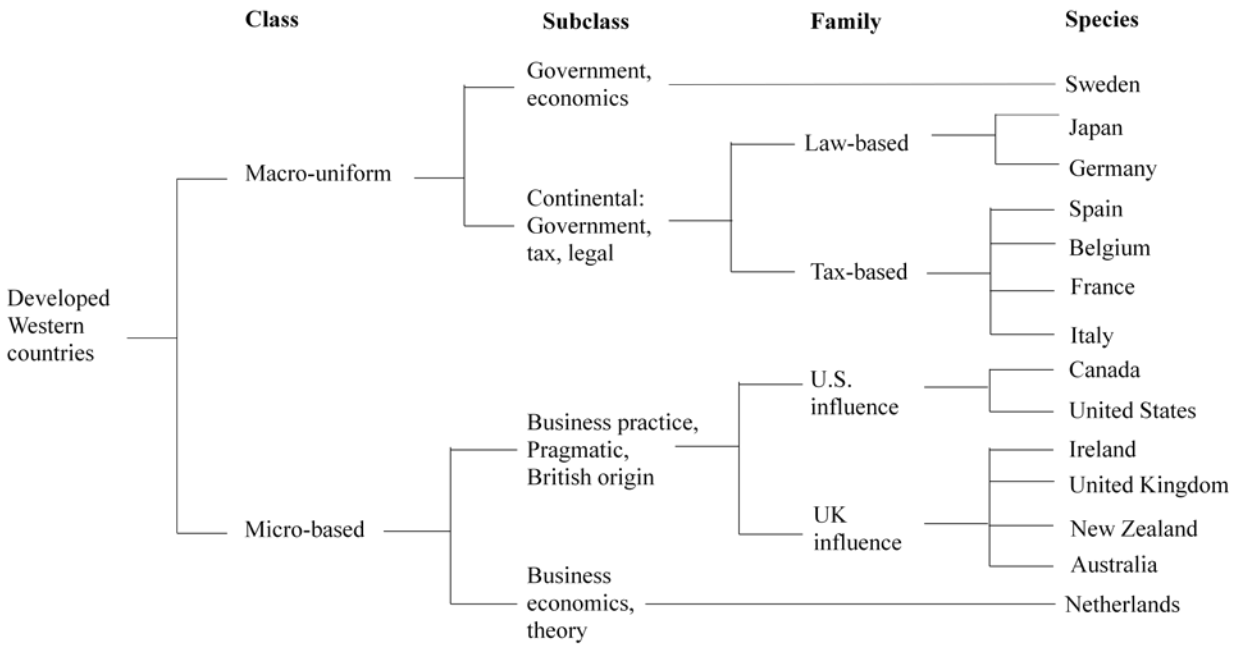

Figure 7.1 A judgmental international classifications of financial reporting practices (Doupnik & Perera, 2007)

Besides, the post-colonial era is a one of three factor, the culture is other factor, which is the intra-country level on earnings management. As the results, the culture dimension found that the uncertainty avoidance value (UAI) is a positive magnitude on real and accruals earnings management; in contrast, the individualism (IDV) is a negative magnitude on real and accruals earnings management. This research result confirm Gray's research (2015) only culture dimension as UAI while culture dimension as IDV is not following Gray's research (2015) because national culture of Gray's research mention on 14 member countries of the European Union, which contains the developed countries. For this research studies in ASEAN country that members are developing countries so that the research result, especially, individualism is different from Gray et al. (2015). Furthermore, the member countries of ASEAN have more characteristic of collectivism than individualism; additionally, national culture influences to real and accruals earnings management (Han et al., 2010; Leuz et al., 2003). From Zhang et al. (2013) pointed out culture effect to controlling and management of earnings on 41 countries; however, they found that country, which contains more collectivist than individualist, is severe on earnings management. Thus, the research result of individualism is not related as Gray et al. (2015).

Another main factor of this research is an institutional level as legal system or legal origin or a company law which compose of disclosure requirement index and disclosure index. Additionally, legal systems protect foreigner for investment in abroad country (Leuz et al., 2003). This research results display the test to firm with high enforcement index value relation with a high of real and accruals earnings management. This pointed out legal enforcement in the member of ASEAN country is weak to protect the investors; in addition to, a group of country with similar legal and institutional characteristic is mostly the low economic. Otherwise, the strong enforcement regulation should have a lower earnings management (Leuz et al., 2003; La Porta et al., 1997). Otherwise, a disclosure index is a positively effect and follow a rule as a highly disclosure index influence to a strongly earrings management. Therefore, a company law, which contains enforcement index and disclosure index, follows protection rules as common-law countries have a more relative stronger than the French-civil-law countries (La Porta et al., 1997).

For the influencing from culture and legal origin are known as the social context (Zhang et al., 2013). The result found that culture and legal are play a role as culture regulation and intuitional regulation except culture as a UAI has different effect of rule. Because the Uncertainty Avoidance dimension (UAI) expresses the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity (Hofstede et al., 2010). The fundamental of UAI shows how a society deals with the fact. The paper result pointed out the transparent system influencing of culture and legal regulation. The earnings management depends on culture and legal regulation, for example, if the accounting about earnings management is highly, individualism and legal regulation are also increasing. On the other hand, when earnings management is high, the UAI, which means attempting to control the future, is decreasing (Gray et al., 2015). Hence, this research found three factors as the post-colonial era, culture, and legal system influence on earnings management

7.2 Implications

The main objective of this study was to comprehensively examine earnings management behavior across ASEAN countries and the relation between accounting diversity and earnings management behavior. From the results of this study, the contribution could be separated into academic implications, investor implications, and policy implementations in the following ways.

7.2.1 Academic Implication - "Quadrants Earnings Management (QEM)" New technique to classify earnings management strategy

From the previous literature, earnings management consists of two types, namely accrual and real earnings management. Firstly, managers could manage firms' earnings through accruals items called "accrual earnings management". Secondly, managers could manage firms' earnings through real activities called "real earnings management". Presently, the existing empirical design that links the two types of earnings management has no such information. To increase the incremental contribution, this study designed a new technique to analyze the overall type of earnings management. Therefore, quadrants earnings management analysis was used to classify the cases in seven types of earnings management as the earnings management strategy.

Previous research revealed the link between the two types of earnings management. The trend of earnings management behavior switched from accrual earnings management to real earnings management. However, this study found that management uses both accruals and real activities to manage earnings in the earnings management strategy. The seven types of earnings management behavior could be explain by the earnings management strategy. Figure 7.2 presents the two main earnings management strategies, namely downward and upward earnings strategies. Upward earnings has three sub-group strategies, namely upward earnings by accrual and real earnings management (quadrant4), upward earnings by accrual earnings management (quadrant1), and upward earnings by real earnings management (quadrant3). On the other hand, downward earnings has three sub-group strategies, namely downward earnings by accrual and real earnings management (quadrant2), downward earnings by accrual earnings management (quadrant3), and downward earnings by real earnings management (quadrant1).

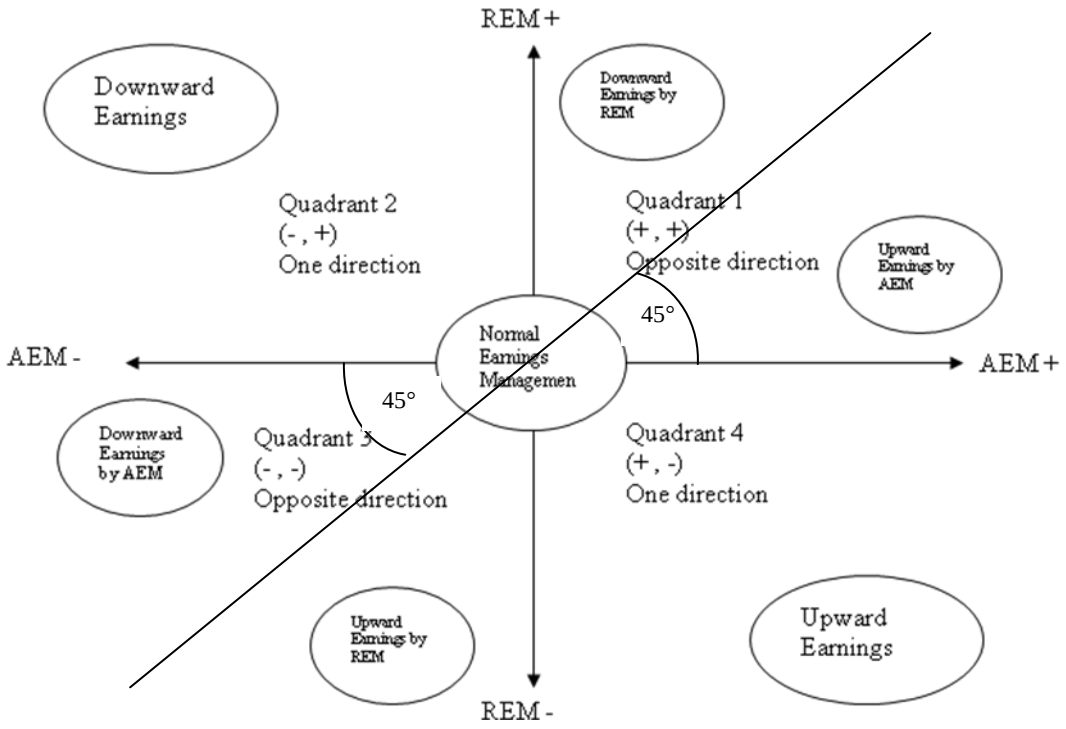

Figure 7.2 Earnings management strategy by quadrants accrual and real earnings management.

7.2.2 Investor Implications

For financial statement users, particularly investors, the results of this study provide insight for determining earnings management behavior and understanding the effect of accounting diversity on earnings management, which then improves the quality of the firms' valuation. The presentation of firm's earnings is very important because investors evaluate their earnings to assess the risk and return of firms before deciding to invest. Moreover, reported earnings are very sensitive to the stock price of listed firms. A high reported earnings number motivates investors to buy the firm's stock. Therefore, the "Upward_A&R_H", "Upward_AEM_H", and "Upward_AEM" clusters can pose a risk to investors since the firms in this cluster may mislead users over the firms' financial information.

7.3 Limitations and Future Research

This study has some important limitations that need to be considered when interpreting the results. It is possible that the earnings management variables were all impacted by omitted variables. This research study accounting environments factors suggested by previous studies (country background); however, there were still some

other factors (e.g., local laws, post-colonial era, and culture local accounting professional and other accounting environments) that were not controlled. As previously, this limitation offers an avenue for future research. Therefore, the background's country is one factor effect accounting standard and financial statement development, however, the rest of other factors have an effect such as international environment, institutional environment as a legal system, and so on. This paper is only one factor, so the next research would be to explore the rest of other factors to complete dimension of accounting environment.

For future research, accounting diversity contains many important factors including international environment, institution environment as a legal system, and so on. This paper is only one of an accounting diversity factor, so it will be useful if future research looks into the rest of others factors.

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