# คุณลักษณะของรายการกำไรและระดับการเปิดเผยข้อมูลและความโปร่งใสของกิจการ: หลักฐานเชิงประจักษ์จากประเทศไทย

นางสาวภัทรพร พงศาปรมัตถ์



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ปีการศึกษา 2553

# EARNINGS ATTRIBUTES AND CORPORATE DISCLOSURE AND TRANSPARENCY: EMPIRICAL EVIDENCE FROM THAILAND

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A Dissertation Submitted in Partial Fulfillment of the Requirements
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ภัทรพร พงศาปรมัตถ์ : คุณลักษณะของรายการกำไรและระดับการเปิดเผยข้อมูลและความโปร่งใสของกิจการ: หลักฐานเชิงประจักษ์จากประเทศไทย. (EARNINGS ATTRIBUTES AND CORPORATE DISCLOSURE AND TRANSPARENCY: EMPIRICAL EVIDENCE FROM THAILAND). อ. ที่ปรึกษาวิทยานิพนธ์หลัก : อ. ดร. ประภาภรณ์ เกียรติกุลวัฒนา, 120 หน้า.

งานวิจัยนี้ได้ทำการศึกษาความสัมพันธ์ระหว่างระดับการเปิดเผยข้อมูลและความโปร่งใสของกิจการกับคุณลักษณะของรายการกำไรของบริษัทจดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทย โดยได้ทำการศึกษาจากบริษัทจดทะเบียน 100 อันดับแรกในระหว่างปี พ.ศ. 2548-2551 และวัดระดับการเปิดเผยข้อมูลและความโปร่งใสของกิจการโดยอ้างอิงตามเกณฑ์ของ Standard and Poor's (S&P:T&D) คุณลักษณะของรายการกำไรในงานวิจัยนี้ใช้ทั้งคุณลักษณะทางบัญชีและคุณลักษณะทางการตลาด

ผลการศึกษาพบว่าคุณลักษณะของรายการกำไรเฉพาะคุณภาพของรายการคงค้างและการใช้รายการตามเกณฑ์คงค้างเพื่อปรับแต่งตัวเลขกำไรมีความสัมพันธ์เชิงลบกับระดับการเปิดเผยข้อมูลและความโปร่งใสของกิจการที่วัดจากคะแนนโดยรวม ซึ่งแสดงให้เห็นว่ากิจการที่มีคุณลักษณะของกำไรที่ไม่ดีมีแนวโน้มที่จะเพิ่มระดับการเปิดเผยข้อมูลและความโปร่งใสของกิจการเพื่อเพิ่มความเชื่อมั่นในรายงานทางการเงินให้กับนักลงทุน นอกจากนั้น ผลการวิจัยยังพบว่าความสัมพันธ์ดังกล่าวอาจถูกผลักดันมาจากความแตกต่างในระดับการเปิดเผยข้อมูลและความโปร่งใสของกิจการทางด้านการเปิดเผยข้อมูลเกี่ยวกับโครงสร้างกิจการและสิทธิของนักลงทุน และการเปิดเผยข้อมูลเกี่ยวกับโครงสร้างและหน้าที่ของคณะกรรมการ ในขณะที่การเปิดเผยข้อมูลทางการเงินของบริษัทไม่ส่งผลต่อคุณลักษณะของกำไร เนื่องจากระดับความหลากหลายของการเปิดเผยข้อมูลมีไม่มากนัก ความสัมพันธ์เชิงลบระหว่างระดับการเปิดเผยข้อมูลและความโปร่งใสของกิจการกับคุณลักษณะของรายการกำไรที่พบในงานวิจัยนี้สอดคล้องกับความสัมพันธ์แบบทดแทน (Substitute Relationship) ที่ว่ากิจการที่มีคุณลักษณะของรายการกำไรหรือคุณภาพกำไรที่ไม่ดีจะมีการเปิดเผยข้อมูลมากขึ้น

ภาควิชา การบัญชี ลายมือชื่อนิสิต.....ภัทรพร พงศาปรมัตถ์.....

สาขาวิชา การบัญชี ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์หลัก.....

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KEYWORDS : EARNINGS ATTRIBUTES / TRANSPARENCY / DISCLOSURE / CORPORATE GOVERNANCE

PATTARAPORN PONGSAPORAMAT: EARNINGS ATTRIBUTES AND CORPORATE DISCLOSURE AND TRANSPARENCY: EMPIRICAL EVIDENCE FROM THAILAND. THESIS ADVISOR: PRAPAPORN KIATTIKULWATANA , Ph.D.,120 pp.

This study examines the association between the degree of corporate disclosure and transparency and earnings attributes of listed firms in The Stock Exchange of Thailand. The sample of this study consists of Thai listed firms in SET100 index during years 2005-2008. The disclosure and transparency level is measured using Standard and Poor's transparency and disclosure scoring methodology (S&P:T&D). Earnings attributes are defined in terms of both accounting-based and market-based earnings attributes.

The results show that accruals quality and smoothness are negatively associated with total scores of disclosure and transparency. This indicates that firms with poor earnings attributes tend to disclose more in order to enhance investor confidence in financial statements. In addition, the study provides significant results of total scores indicating that the total scores may be driven by different levels of disclosures in ownership structure and investor rights and in board and management structure and process. On the other hand, the financial information disclosure is not associated with earnings attributes because the variation in disclosing financial information among firms is quite low. The negative association between transparency and disclosure scores and earnings attributes of this study is consistent with the substitute relationship indicating that firms with poor earnings attributes usually issue more expansive disclosure.



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# CHAPTER I

# INTRODUCTION

## 1.1 Introduction

The Asian financial crisis in 1997 and the global financial scandals (Enron, WorldCom, Parmalat, AIG, etc.) have heightened awareness of the economic benefits of good corporate governance including corporate disclosure and transparency. Corporate disclosure is a critical function of an efficient capital market (Healy and Palepu, 2001). Accounting information disclosed by companies is one of the most important information sources for investors and analysts in evaluating a company (Breton and Taffler, 1995). The modern stakeholders require more sophisticated information. They ask for additional information which is not provided by the financial statements. The efficiency of the disclosure process depends on the needs of the stakeholders and of the interests of the management of the corporation. Hence, disclosure is a crucial element in ensuring the effective allocation of resources in the society and diminishing the information asymmetry between the company and its stakeholders.



Prior research commonly provides evidence about the advantages of corporate disclosure and transparency. It is also regarded as an important indicator of corporate governance quality. Beekes and Brown (2006) find that firms with higher corporate governance quality provide more informative disclosures. In this sense, good corporate disclosure and transparency mechanism is set in place to essentially protect

the rights of the shareholders, creditors and other outside decision makers who do not have firsthand knowledge about the firm. This, in turn, is expected to minimize information asymmetry and the probability of fraud, also enhancing its easier detection, leading to lower cost of capital and higher firm value. Good corporate disclosure and transparency practices increase awareness and trust of investors which will reduce the uncertainty of the returns to capital suppliers. It also is expected to reduce the firm's cost of external capital and increase firms value (Berglof and Pajuste, 2005). Moreover, compliance with good corporate disclosure and transparency practices mitigates the political costs of non-compliance and reduces the risk of higher taxes, litigation and too much regulation.

The usefulness of accounting information including earnings is also provided by prior research. Fekrat and Riahi-Belkaoui (2007) indicate that the accounting information is important factor for the existence of well functioning capital market. Graham, Harvey, and Rajgopal (2005) shows that a firm's earnings is one of the premier sources of accounting information which investors and managers consider as an important summary indicator of firm performance. Moreover, firm's earnings are a key input in most valuation models (Francis, Schipper, and Vincent, 2003). Furthermore, firm's earnings also influence information asymmetry and firm's cost of capital (Bhattacharya, Dasai, and Venkataraman, 2007).

According to the two streams of research, one identifies the relation between degree of disclosure and transparency and firm's cost of capital (Welker,1995; Lang and Lundholm, 1996; Botosan, 1997; Healy, Hutton, and Palepu, 1999; Botosan and Plumlee, 2000; Hail, 2002; Cheng, Collin, and Huang, 2006a). The other stream links

earnings attributes to firm's cost of capital. (Affleck-Graves, Callahan, and Chipalkatti, 2002; Cohen, 2003; Francis et.al, 2004; Francis, LaFond, et.al, 2005; Bhattacharya et.al, 2007; McInnis, 2010). However, studies on factors related to the degree of disclosure and transparency especially in Thailand are limited. These two lines of research yield the predictions about the association between degree of disclosure and transparency and earnings attributes.

The degree of disclosure and transparency could be related to earnings attributes in one of two competing ways: the complementary relationship or the substitutive relationship (Francis, Nanda, and Olsson, 2008). The complementary relationship between disclosure and transparency and earnings attributes indicates that firms with good (poor) earnings attributes will issue more (less) expansive disclosures. Under this view, the information quality is the precision of the information signal observed by the firm's manager. The equilibrium disclosure threshold decreases and the probability of disclosure increases as the precision of a manager's private information increases (Verrechia, 1990). The reason is that market participants know the precision of the manager's private information. If a firm with high quality information withholds information from the market, a rational expectations market will discount the value of the firm's assets. This force causes the firm's disclosure threshold to decrease and the probability of disclosure to increase, resulting in the prediction of more disclosures for firms with good earnings attributes. Therefore, managers have incentives to disclose more when their information quality increases. On the other hand, firms with poor information quality or poor earnings attributes have a tendency to disclose only information required by regulators because

investors will treat such expansive disclosures as less credible. (Waymire, 1985; Verrecchia, 1990; Lobo and Zhou, 2001; Francis et.al, 2008).

The substitutive relationship is based on the argument that the information asymmetry between managers and stakeholders creates a demand for disclosure and provides an incentive for firm to disclose more (Grossman and Hart, 1980; Verrecchia, 1983). This suggests that firms with poor earnings attributes will issue more expansive disclosures. Prior research indicates that the substitutive relation is consistent with the agency cost theory that firms with poor earnings attributes will issue more disclosure to reduce the information asymmetry problems (Lang and Lundholm, 1993; Shaw, 2003).

To investigate the association between the degree of corporate disclosure and transparency and earnings attributes, this study follows Standard and Poor's definition of transparency and disclosure (S&P:T&D): timely and adequate disclosure of the operating and financial performance of the firm and its corporate governance practices related to its ownership, board, and management structures and processes (See Appendix B). Moreover, this study adjusted S&P:T&D scores by excluding the items which all firms are required by regulator to disclose and the items which all firms are generally disclosed in order to capture only voluntary disclosure. The earnings attribute variables focus on both accounting-based and market-based attributes[1] which are considered by Francis et.al (2004).

[1] Follow prior research, Francis et.al (2004) characterized seven earnings attributes into two categories: accounting-based and market-based earnings attributes. Accounting-based earnings attributes are consisted of persistence, accrual quality, predictability and smoothness. On the other hand, the market-based earnings attributes consist of value relevance, timeliness and conservatism.

The empirical results of this study are consistent with the hypotheses. The degree of transparency and disclosure measured by S&P:T&D adjusted scoring is negatively associated with some earnings attributes. The results support the substitutive relationship. Moreover, the results indicate that different categories of transparency and disclosure associated with different earnings attributes. In addition, accounting-based earnings attributes are superior to market-based earnings attributes in explaining the variation in TDS adjusted scores. The negative significant relationship between earnings attributes and degree of corporate disclosure and transparency indicates that firms with poor earnings attributes will issue more expansive disclosure. Since firm's disclosure and earnings attributes are within the discretion of management (Verrecchia, 1990), and earnings attributes are innate information firm characteristics that managers cannot control in the short run. The negative relationship in this study shows that managers have incentive to disclose more information when firms' earnings attributes are poor in order to reduce the information asymmetry, reduces the cost of equity, and increases firms' value.

**1.2 Motivation**

The financial crisis of 1997 that swept through most of East Asia did not only affect the investor confidence, but also highlighted the need of financial and governance reforms in the region. Currently, most researchers generally agree that the main failure leading to the financial crisis stemmed directly from the lack of disclosure and obscure management practices. Over the last several years, most East Asian economies have been actively reviewing and improving their regulatory frameworks, in particular, corporate governance and disclosure and transparency. In addition, Organization for Economic Co-operation and Development [OECD] (1999)

suggests that corporate governance is an important step in building market confidence and encouraging more stable, long-term international investment flows.

However, in Thailand, Alba, Claessens, and Djankov (1998) analyze the structure of financing, the efficiency of investments, and the effectiveness of corporate governance mechanisms of firms listed in the Stock Exchange of Thailand (SET). The empirical results highlight the weakness in corporate governance and the risky corporate financing structures. They explain that Thai firms have five interrelated problems as follows: concentrated ownership, high level of diversification, weak incentive, poor minority protection, and weak information disclosure.

OECD (1999) notes that full disclosure and transparency of financial information is vital components of the corporate governance framework and is regarded as an important indicator of corporate governance quality. Diamond and Verrecchia (1991) suggest that the quality of disclosure is viewed as an important factor to an efficient function of capital markets. Healy and Palepu (2001) indicate that completed and transparent information could also minimize transactions and capital cost for investors by reducing the uncertainties regarding the risk and return from their investment. The degree of disclosure and transparency also fulfils the accountability role of managers towards shareholders. Moreover, Patel, Balic, and Bwakira (2002) document that higher disclosure and transparency not only reduces the information asymmetry between a firm's management and financial stakeholders' equity and bond holders, but also mitigates the agency problem in corporate governance.

Studies on the association between the degree of disclosure and transparency and earnings attributes especially in Thailand are limited. This study will examine whether earnings attributes (both accounting-based and market-based) associated with the degree of disclosure and transparency. It is imperative to investigate the two variables together as they are within the discretion of management (Robinson and Munter, 2004; Ball and Shivakumar, 2005). Prior research indicate that corporate disclosure and transparency is related to firm's cost of capital (Welker,1995; Lang and Lundholm, 1996; Botosan, 1997; Healy et.al, 1999; Botosan and Plumlee, 2000; Hail, 2002; Chen, Chen, and Wei, 2003; Cheng, et.al, 2006a). Another stream of prior research also demonstrates the relationship between earnings attributes and firm's cost of capital. (Affleck-Graves et.al, 2002; Cohen, 2003; Francis et.al, 2004; Francis, LaFond, et.al, 2005; Bhattacharya et.al, 2007; McInnis, 2010). Drawing upon the results of these two streams of research, this paper hypothesizes that the earnings attributes are associated with the degree of corporate disclosure and transparency.

**1.3 Research Objectives**

The objective of this study is to investigate the association between the degree of corporate disclosure and transparency and earnings attributes of listed Thai firms in SET100 index[2]. This study employs S&P transparency and disclosure scores which capture only voluntary disclosure items by excluding the items which all firms disclosed (hereafter; S&P:T&D adjusted or TDS adjusted) to measure the degree of

[2] The top 100 listed companies on the Stock Exchange of Thailand (SET) that have large market capitalization, high liquidity and compliance with requirements regarding the distribution of shares to minor shareholders.

corporate disclosure and transparency. Earnings attributes focuses on both accounting-based and market-based.

Prior research has mostly focused on examining the degree of corporate disclosure and transparency from a macro perspective. For example, Bushman, Piotroski, and Smith (2004) investigate corporate disclosure and transparency across 45 countries worldwide and conclude that corporate disclosure and transparency is a function of a country's legal/judicial regime and political economy. Khanna, Palepu, and Srinivasan (2004) examine disclosure practices of firms and find an association between disclosure and firm size, performance, and legal origin. Moreover, Cheung et.al (2006) examine the degrees of corporate disclosure and transparency of publicly listed companies in two emerging markets, Thailand and Hong Kong, and analyzes corporate disclosure practices as a function of specific firm characteristics. Although the literature has identified several cross-national variables that are associated with corporate disclosure and transparency, little has been done to determine the factors that are related to corporate disclosure and transparency within an economy.

This paper provides additional insights into the issue of corporate disclosure and transparency in an individual market by examining whether earnings attributes of firms are associated with the degree of corporate disclosure and transparency which are measured by S&P:T&D adjusted scores of listed Thai firms in SET100. In addition, this paper disaggregates the degree of corporate disclosure and transparency into three broad categories: Ownership structure and investor rights, Financial transparency and information disclosure, and Board and management structure and

process and examines the association between earnings attributes and each of the above categories.

This study selects S&P:T&D scoring system as a proxy for the degree of disclosure and transparency for the following reasons; First, this scoring system is one of the most popular devices which researchers have used. Second, S&P:T&D scoring system is developed from analysis of the latest available annual reports, and assess the level of transparency and disclosure of firms in emerging markets (Asia, Latin America, Central and Eastern Europe, and Africa) as well as developed markets (Europe, developed Asia, and the U.S.). Therefore, investors who trade on SET, including institutional and foreign investors should have a high level of trust in this international scoring system.

**1.4 Differentiation from Prior Research**

This study differs from prior research examining the relationship between the degree of corporate disclosure and transparency and earnings attributes. Prior research in this area mainly used abnormal accruals to proxy for earnings attributes. For example, Lobo and Zhou (2001) examine the relationship between disclosure and earnings attributes. They measure earnings attributes by using discretionary accruals from Modified Jones models. Moreover, Francis et.al (2008) investigates the relation between disclosure and financial information quality. They measure earnings attributes by accruals quality and absolute abnormal accruals.

Unlike prior research, this study adds other earnings attributes beyond accruals. This study focuses on both accounting-based and market-based earnings

attributes considered by Francis et.al (2004). The intuition is that earnings are one of the premier sources of public financial disclosures (Graham et.al, 2005). Moreover, investors and managers consider earnings as an important indicator of firms' performance. Additionally, earnings also serve as a key input in most valuation model (Francis et.al, 2003). The reason for adding other attributes beyond accruals is that accruals do not reflect the overall attributes of earnings of firms. Analysts and investors also employ other earnings attributes in order to make decisions. The reason to include the market-based earnings attributes is that prior research usually employs the accruals derived from accounting numbers, which are not affected by the volatility of the stock market. This study argues that management has an incentive to increase/decrease the degree of disclosure and transparency in order to signal firms' information to investors. On the other hand, investors do not use only accounting numbers or accounting information but they also use market information to judge the firms (Shaw, 2003; Cheng et.al, 2006). Thus, this study hypothesizes that market-based earnings attributes of firms are also associated with the degree of disclosure and transparency.

With respect to disclosure variable, the disclosure literature uses several proxies for firms' disclosure practices, including self constructed scores, analysts' rating of firms' disclosure quality, reported in the Association of Investment Management and Research Corporate Information Committee Reports (AIMR) scores and S&P:T&D scores. In the recent study, Francis et.al (2008) use a self-construct scores to investigate the relation between voluntary disclosure and earnings quality. However, Botosan (1997) documents the disadvantages of the self-construct scores. The study indicates that it is difficult to replicate due to the researchers' judgment

involved and the labor intensity of the coding process. Moreover, most of the details in Francis et.al (2008) self-construct scores captures only information regarding to financial measures such as cash flow forecast, sales forecast, unit selling price, growth in investment, and cost of capital. This study employs the transparency and disclosure scores, provided by the Standard and Poor's, as a proxy for the degree of disclosure and transparency of the firms since this scoring system is one of the most popular devices which are used by researchers. In addition, S&P:T&D scores capture both financial and non-financial information related to the three categories. Furthermore, S&P:T&D scores developed from analysis of the latest available annual reports, and assess the level of transparency and disclosure of firms in both emerging markets (Asia, Latin America, Central and Eastern Europe, and Africa) and developed markets (Europe, developed Asia, and the U.S.). Therefore, this scoring system is more appropriate and more generalize than the self-construct scores.

**1.5 Contributions**

This study contributes to the literature in the following ways. First, this study provides evidence about the degree of disclosure and transparency of Thai listed firms in SET100 which is measured by S&P:T&D adjusted scores. The evidence available on the degree of corporate disclosure and transparency in Thailand are limited. For example, Patel et.al (2002) shows that on average the disclosure scores for 25 Thai firms is about 48 from 98 as of year 2000. In addition, Standard and Poor's (S&P) and Corporate Governance and Financial Reporting Centre [CGFRC] (2004) also assess disclosure of corporate governance practices among SET50 firms in Thailand using annual reports as of 2002. The mean scores are about 37.56 from 140.0. The findings suggest that Thai firms must improve disclosure of their corporate governance

practices. According to the lack of studies with respect to the degree of disclosure and transparency in Thailand, the result of this study can be implemented as a benchmark for future comparative studies. Additionally, the results will provide incentives for all firms to improve their disclosure and transparency practices.

Second, the evidence also provides an insight on the relationship between earnings attributes and the degree of disclosure and transparency. Prior research has documented that firms with good earnings attributes have better performance, higher stock returns and lower cost of equity. For example, Francis et.al (2004) find that firms with the most favorable value of earnings attributes experience lower cost of equity. Chan et.al (2006) note that the low quality of earnings is associated with poor future returns. Additionally, Sivaramakrishnan and Yu (2008) find that earnings attributes such as accrual quality, earnings persistence, and earnings predictability are higher for firms that have consistently outperformed. Therefore, the investors can discriminate firms by using their earnings attributes. However, earnings attributes are in theory rather than practices and are too difficult for investors to evaluate, while the degree of disclosure and transparency is clear and uncomplicated. This study hypothesizes that difference in earning attributes across firms are related with different level of disclosure. Moreover, managers have incentive to disclose more information when firms' earnings attributes are poor in order to reduce the information asymmetry and reduce firm's cost of capital. The result of this paper shows that earnings attributes are negatively associated with the degree of disclosure and transparency; it will help the investors to understand the nature of firms and make an appropriate investment decision. Finally, the negative association between earnings attributes and the degree of disclosure and transparency has implications for

regulators to set minimum disclosure requirements for firms in order to improve the quality of disclosures and transparency in Thailand.

### 1.6 Structure of the Dissertation

The dissertation is divided into six chapters organized as follows. Chapter I introduces the research and its objectives. Chapter II discusses the related literature about disclosure and transparency and earnings attributes. Chapter III presents theory and hypotheses development. Chapter IV presents the research design, sample selection, data, model specifications, and variables measurement. Empirical results of the analysis are presented in chapter V. This is followed by a conclusions and limitations in chapter VI.

# CHAPTER II

# LITERATURE REVIEW

At present, an efficient capital market needs a transparent financial reporting system to encourage investors' confidence in making decisions (Shaw, 2003). Therefore, measuring quality of financial reporting should consider, not only information disclosed in financial statements but also other information disclosed in other sections of the annual report.

There are a number of studies that investigate the quality of financial reporting, especially in the developed countries. Prior research clarifies the quality of reporting in various ways. For example, Singhvi and Desai (1971) suggest that the quality of reporting is based on reports that are complete, accurate and reliable, and prepared in a timely manner which leads to quality decision making. Naser and Nuseibeh (2003) note that quality of financial reporting should be gauged based on the compliance of accounting standards of a particular country. Robinson and Munter (2004) refer quality of financial reporting as an overall financial reporting, including disclosures, which results in a fair presentation of a company's operation (including both earnings and cash flow) and financial position. These definitions highlight the usefulness of the accounting information and disclosure as it helps in explaining the companies' operation and financial position.

Accounting information which provided by firms (both the number in financial statement and other disclosure information) is meaningful to various parties.

Investors and stakeholders use aggregate earnings and its components (operating cash flow and accruals) including information disclosure to predict firm's future cash flow. If the information provided by firms is precise, the prediction of future cash flows will be more accuracy (Cohen, 2003). Prior research documents that firm's information quality creates several types of capital market consequences. For example, high-quality information can mitigate the adverse selection problem, increase market liquidity, reduce the uncertainty or estimation risk, lower cost of equity capital, and enhance firm value (Healy and Palepu, 2001; Cohen, 2003; Leuz and Wysocki, 2008).

## 2.1 Capital Market Consequence of Information Quality

As mentioned above, the information quality provided by firms affects capital market in various ways. However, most of the literature frequently examines the association between quality of information and firm's cost of capital (Verrecchia, 1990; Easley and O'Hara, 2004; Lambert, Luez and Verrecchia, 2007).

Cost of capital is the expected rate of return that the firm's investors require. Prior research suggests several alternative approaches for calculating the cost of equity capital (Easton, 2004; Ohlson and Juettner-Nauroth, 2005). However, these approaches contain a similar basic idea. They use price and analysts' forecasts in the valuation equation. Then, they derive the cost of equity capital as the internal rate of return which is calculated from the current stock price and the sequence of expected earnings derived from analysts' forecast (Francis, Khurana, and Pereira, 2005).

Economic theory suggests that, ceteris paribus, increasing the quality of financial information lowers cost of capital of firm. Easley and O'Hara (2004)

demonstrate analytically that the cost of capital decreases in the quantity and quality of both public and private information. In empirical research, the quantity of information is always proxy by the level of disclosure that is provided by the firm (Botosan, 1997; Botosan and Plumlee, 2002; Hail, 2002; Chen et.al, 2003; Cheng et.al, 2006a; Chen, Dhaliwal, and Xie, 2010) while the quality of information is always proxy by firm's earnings quality or earnings attributes (Bhattacharya, Daouk, and Welker, 2003; Cohen, 2003; Francis et.al, 2004; Francis, LaFond, et.al, 2005; McInnis, 2010)

### 2.1.1 Capital Market Consequence of Corporate Disclosure

Studies on the relationship between corporate disclosure and cost of capital typically rely on two streams of theoretical research: a stock market liquidity and an estimation risk perspective. The first stream suggests that corporate disclosure lowers the cost of equity capital by reducing the information asymmetry, and in turn, enhancing the stock market liquidity (Glosten and Milgrom, 1985; Amihud and Mendelson, 1986; Diamond and Verrecchia, 1991). The second stream of research suggests that corporate disclosure lowers the cost of equity capital by reducing the estimation risk. The estimation risk or information risk arises when investors estimate the parameters of an asset's return or payoff distribution based on available information about the firm. If estimation risk is nondiversifiable, investors will demand an incremental return for bearing this risk (Barry and Brown, 1985; Handa and Linn, 1993; Clarkson, Guedes, and Thompson, 1996).

Analytical research suggests that corporate disclosure reduces cost of equity capital. Easley and O'Hara (2004) investigate the role of information in affecting a

firm's cost of capital. They demonstrate analytically that the cost of capital increases in the fraction of private information in the information set about the firm value (that is, information asymmetry among investors). In addition, the cost of capital decreases in the quantity and quality of both public and private information. Lambert et.al (2007) develop a framework that links the disclosure of accounting information to the cost of capital. They illustrate that the information disclosure directly influence the cost of capital by affecting the market participants' assessment of the distribution of future cash flow. Moreover, the information disclosure also indirectly influences the cost of capital by affecting a firm's real decisions, which likely changes its expected value and covariances of firm cash flow.

Empirical research also documents the negative relationship between corporate disclosure and cost of capital. For example, Botosan (1997) creates a self-construct index of voluntary disclosures in annual reports[1] and examines the association between disclosure levels and the cost of equity capital for 122 firms in machinery industry. The relationship between disclosure levels and cost of equity capital is weak in the overall sample. However, the study finds a strong negative association between disclosure levels and cost of equity capital for firms with a low analyst following. Botosan and Plumlee (2002) explore the association between expected cost of equity capital and disclosure levels by using AIMR disclosure ranking[2]. The result suggests that cost of equity capital decreases in the annual report

[1] Botosan (1997) notes that the items included in a self-constructed score reflect five categories of voluntary information identified by investors and financial analysts as useful in investment decision making: (1) Background information, (2) Summary of historical results, (3) Key non-financial statistics, (4) Projected information, and (5) Management discussion and analysis.

[2] The Association of Investment Management and Research Corporate Information Committee (AIMR) reports contain industry-specific analyst evaluations of disclosure quality in three dimensions: (1) Annual and required published information, (2) Quarterly stockholder reports and other non required published information, and (3) Investor relations and related aspects.

disclosure levels. Moreover, Cheng et.al (2006a) examine the association between disclosure levels, shareholder rights, and the cost of equity capital. The disclosure levels are measured by a transformation of the S&P:T&D rankings of financial-related disclosures. The result shows that greater financial disclosure and stronger rights regimes interact in reducing firms' cost of equity capital. In addition, Chen et.al (2010) focus on the effect of regulation fair disclosure on cost of equity capital. They document that the cost of equity capital decreases significantly for US firms in the post- regulation fair disclosure relative to the pre- regulation fair disclosure period.

Prior research linking corporate disclosure with cost of capital has mainly been undertaken in the context of the United States. However, some research focus on data outside the United States. For example, Hail (2002) examines the impact of voluntary disclosure on the cost of capital by using data from Swiss companies. The study uses disclosure index developed by the Swiss Banking Institute at the University of Zurich to proxy for firm's voluntary disclosure. The result shows a negative and highly significant association between disclosure and cost of capital. In addition, Chen et.al (2003) investigate the effects of disclosure and other governance mechanisms on the cost of equity capital in Asia's emerging markets. They use the rating criteria in CLSA[3] surveys to proxy for disclosure and governance mechanisms. The result suggests that corporate governance including disclosure enhances firm value by reducing the cost of equity capital, not just by improving the expected cash

[3] Credit Lyonnais Securities Asia (CLSA) Emerging Markets, a provider of brokerage and investment banking services in the emerging markets of Asia, Latin America and Europe, released a comprehensive report on corporate governance in April 2001 and updated survey in February 2002. Chen, Chen, and Wei (2003) reproduce the rating criteria used in CLSA's two surveys to proxy for the disclosure and other governance mechanisms. The rating criteria are divided into seven major categories: (1) Transparency, (2) Management discipline, (3) Independence, (4) Accountability, (5) Responsibility, (6) Fairness, and (7) Social awareness. They characterized the seven categories into three groups, disclosure (including transparency category only), non-disclosure corporate governance mechanisms (including categories 2 to 6), and social awareness (including category 7 only).

flows that can be distributed to shareholders. Furthermore, Francis, Khurana et.al (2005) examine the disclosure consequences on cost of capital from 34 countries outside the United States. The finding supports that a higher disclosure levels will lead to a lower cost of equity capital.

Several studies document the role of corporate disclosure in reducing information asymmetry problems (Welker,1995; Lang and Lundholm, 1996; Healy et.al, 1999; Leuz and Verrecchia, 2000; Brown, Hillegeist, and Lo, 2004; Heflin, Shaw, and Wild, 2005; Cheng, Courtenay, and Krishnamurti, 2006; Brown and Hillegeist, 2007; Chen et.al, 2007; Chang et.al, 2008) that provide indirect effect on cost of capital. For instance, Healy et.al (1999) investigate firms benefit from voluntary disclosure. The result shows that expanded voluntary disclosure improve stock performance and capital market intermediation by leading investors to revise upward valuations of the firms' stocks, increases stock liquidity, and creates additional institutional and analyst interest in the stocks. Similarly, Chen et.al (2007) examine the effect of corporate governance on equity liquidity. They use S&P:T&D rankings as a proxy for corporate governance[4] because transparency and disclosure is extremely important elements of good corporate governance. Moreover, they document that firms with higher S&P:T&D scores will have better disclosure practices, accompanied by lower information asymmetry and better corporate governance. They expect that companies with poor transparency and disclosure practices face more serious asymmetry of information. The result reveals a strongly negative relation between the S&P:T&D rankings and the equity liquidity which proxy for information asymmetry. Finally, Chang et.al (2008) explores the association

[4] Durnev and Kim (2003) found a significant correlation between the CLSA composite index and S&P:T&D aggregate score.

between disclosure and information asymmetry. They find that firms with higher disclosure quality through their investor-relation activities[5] have lower information asymmetry (higher analysts following, more institutional shareholders, more active trading, larger market capitalization and lower bid-ask spread).

### 2.1.2 Capital Market Consequence of earnings attributes

Theoretical research suggests that earnings attributes (that is earnings quality) can affect cost of capital in several channels. First, on the framework of Amihud and Mendelson (1986), information asymmetry induced by poor earnings attributes can increase the adverse selection risk for liquidity component of the bid-ask spread, which can lead to a higher cost of equity. Second, Easley and O'Hara (2004) develop the link between accounting information and cost of capital by using multi-asset rational expectation equilibrium model which includes public and private information, and informed and uninformed investors. They demonstrate that required returns are affected by information risk, captured both by the amount of private information (disclosure levels) and by the precision of public and private information (earnings quality). Moreover, they explicitly note an important role for precise accounting information in reducing the cost of capital by decreasing the systematic risk of shares to uninformed investors. In addition to the impact through the information asymmetry as mention above, Lambert et.al (2007) suggest that accounting information quality can also influence the cost of capital without affecting information asymmetry, both directly and indirectly. In their framework, the quality of accounting information has a direct effect on firm's cost of capital by affecting market participants' perceptions

[5] Chang et.al (2008) creates a checklist of investor-relation activities to formulate a disclosure index. The checklist contained 28 items with a total of 44 components which developed by incorporating items used in other internet-based studies such as Deller, Stubenrath, and Weber (1999) and Hedlin (1999), and the best practice guidelines of The Australasian Investor Relation Association (AIRA).

about the distribution of future cash flows, and indirect effect by affecting real decisions that alter the distribution of future cash flows.

In terms of empirical study, the most direct evidence that provides the relationship between cost of capital and earnings attributes comes from Francis et.al (2004). They document the link between seven earnings attributes and information risk and hypothesize that an unfavorable earnings attributes will be associated with a higher cost of equity capital to the extent that attributes capture one or more aspects of uncertainty about future free cash flows. The result shows a statistically reliable association between each earnings attributes, considered individually, and cost of equity capital. However, only four earnings attributes (accruals quality, smoothness, persistence, and value relevance) are strongly significantly associated with the cost of equity capital when they include all seven attributes jointly in their model. They conclude that firms with the least favorable values of each earnings attributes have higher cost of equity capital than firms with the most favorable values. Moreover, they also conclude that accounting-based earnings attributes have more pronounced cost of equity capital effects than do market-based earnings attributes.



Besides Francis et.al (2004), other studies document the negative association between earnings attributes and firm's cost of capital by using one or more earnings attributes (not all attributes). For example, Francis, LaFond et.al (2005) investigates the relation between accruals quality and the cost of equity capital and cost of debt. Accruals quality is measured by the standard deviation of residuals from regressions relating current accruals to cash flows from modified Dechow and Dichev (2002) model. The finding shows that firms with poor accruals quality have higher cost of

capital than do firms with good accruals quality. In addition, Bhattacharya et.al (2007) examine the impact of earnings quality on information asymmetry and trading costs. Similar to Francis, LaFond et.al (2005), they use accruals quality from modified Dechow and Dichev (2002) to proxy for earnings quality. The result shows that poor accruals quality has significant incremental impact on information asymmetry in financial markets and increases the cost of liquidity. They also suggest that poor earnings quality can increase the firm's cost of capital through its impact on trading costs. Cohen (2003) examines the relationship between earnings quality and its capital market consequences. They use four proxies for capital market consequences as follow; the firm's cost of equity capital, the firm's bid-ask spread, the dispersion in analysts' earnings forecasts, and the number of analysts following the firm. The study develop the measurement for earnings quality by focusing on the residuals obtained from a regression of future operating cash flows on previous period earnings component (cash flow from operation and accruals). The evidence exhibits the negative association between earnings quality and firm's bid-ask spread (a proxy for the level of information asymmetry). The result also shows that earnings quality is negatively associated with analyst forecast dispersion and positively associated with the number of analysts following the firm. From these results, firms with higher earnings quality have lower information asymmetry. However, the study does not find association between firms' cost of equity capital and earnings quality, after controlling for known risk factors.

The research also documents the association between other earnings attributes beyond accruals quality and firm's cost of capital. For example, Affleck-Graves et.al (2002) examine the relationship between earnings predictability and the behavior of

the adverse selection cost of the bid-ask spread. The result shows that firms with less predictable earnings have higher total bid-ask spreads across time than firms with more predictable earnings. They also suggest that a firm with less earnings predictability will have a higher cost of equity capital than a comparable firm with more earnings predictability. In addition, Bhattacharya et.al (2003) investigate the impact of earnings opacity on the return shareholders demand for holding equity or cost of equity capital. The overall earnings opacity consist of three attributes of earnings; earnings aggressiveness, loss avoidance, and earnings smoothing. The result documents the association between earnings opacity and cost of equity capital, that an increase in overall earnings opacity is linked to an increase in cost of equity capital and a decrease in trading in the stock market. Furthermore, McInnis (2010) demonstrates the relationship between earnings smoothness and the implied cost of equity capital. Although, the study finds no relation between earnings smoothness and average stock returns, the result documents that the negative relation between earnings smoothness and implied cost of equity capital is driven by optimism in analysts' long-term earnings forecasts.

## 2.2 Corporate Disclosure and Earnings Attributes

The degree of corporate disclosure could be related to earnings attributes in one of two competing ways: the complementary relationship or the substitutive relationship (Francis et.al, 2008).

Several theoretical studies provide the complementary relationship between disclosure and earnings attributes (Dye, 1985; Jung and Kwon, 1988; Verrecchia, 1990). Under this view, the information quality is the precision of the information

signal observed by the firm's manager. The equilibrium disclosure threshold decreases and the probability of disclosure increases as the precision of a manager's private information increases (Verrecchia, 1990). The reason is that market participants know the precision of the manager's private information, if a firm with high quality information withholds information from the market, a rational expectations market will discount the value of the firm's assets. This force causes the firm's disclosure threshold to decrease and the probability of disclosure to increase, resulting in the prediction of more disclosures for firms with good earnings quality.

Empirical research provides the positive relationship between the degree of corporate disclosure and earnings attributes. Cox (1985) examines the association between earnings variability and public disclosure of management's forecasts. The study uses the coefficient of variation in earnings (the standard deviation of earnings over the mean earnings value) as a proxy for earnings variability. The finding indicates that a firm with low earnings variability (that is high earnings quality) tends to voluntarily disclose management's forecasts information. Moreover, Waymire (1985) finds a negative association between firms' voluntary disclosure, which measured by frequency of management earnings forecast and firm's earnings volatility, which measured by the variance of changes in annual earnings per share. Similarly, Yhim, Karim, and Rutledge (2003) investigate the association between information quality and disclosure-level choice in the management earnings forecasts. The information quality is earnings volatility measured by the coefficient of variation of change in earnings per share. Disclosure in the management earnings forecasts is classified into four levels; point estimates, range estimates, qualitative disclosure, and no forecast. The result is consistent with Cox (1985) and Waymire (1985) that

managers are likely to select low-level disclosure as the magnitude of earnings volatility increases. In addition, Lobo and Zhou (2001) examine the relationship between disclosure quality and earnings management. They state that managers manage earnings and disclosure to reduce information asymmetry between managers and owners. Disclosure quality was measured by AIMR disclosure ratings and earnings management was measured by discretionary accruals from Modified Jones model. Result of their analysis reveals a negative relationship between the disclosure quality and earnings management as predicted. In other words, firms that engage more earnings management (poor earnings attributes) tend to have lower disclosure. Furthermore, Francis et.al (2008) investigate the relation between voluntary disclosure and financial information quality. They use a self-constructed score of voluntary disclosures of financial information included in firms' annual fillings[6] and four different measure of earnings quality (accruals quality, earnings variability, absolute abnormal accruals and a combined measure based on the common factor score). The result indicates that the relation between disclosure and earnings quality is complementary, thus firms with good (poor) earnings quality issue more (fewer) disclosures.

On the other hand, the substitutive relationship is based on the argument that the information asymmetry between managers and stakeholders creates a demand for disclosure and provides an incentive for firm to disclose more (Grossman and Hart, 1980; Verrecchia, 1983; Penno, 1997). The intuition is that information asymmetry between firm and investor is higher in a firm with poor earnings attributes (Ecker

[6] Francis et.al (2008) use a self-constructed score of voluntary disclosures of financial information included in firms' annual fillings. The scores are divided into four categories; (1) Summary to historical results, (2) Other financial measures, (3) Non-financial measures, and (4) Projected information.

et.al, 2006; Bhattacharya et.al, 2007; Brown et.al, 2009). Therefore, managers in such firm will have an incentive to disclose more information in order to reduce the information asymmetry because the value of additional information is greater in these settings (Grossman and Hart, 1980; Verrecchia, 1983). This suggests that firms with poor earnings attributes will issue more expansive disclosures.

Empirical research documents the negative relationship between the degree of corporate disclosure and earnings attributes. For example, Tasker (1998) documents a negative relation between voluntary disclosure and earnings attributes. The study considers the likelihood a firm uses conference calls to proxy for voluntary disclosure and the informativeness of the financial statements to proxy for the earnings attributes. Lang and Lundholm (1993) examine the cross-sectional determinants of firm's disclosures. They use the AIMR scores to proxy for disclosure. They consider six determinants of firm's disclosures including the correlation between annual returns and annual earnings. The result indicates that firms with low returns-earnings correlations, which is similar to value-relevance, have higher AIMR scores. In addition, Shaw (2003) studies the relationship between corporate disclosure and transparency quality, earnings smoothing activities, and timeliness of earnings' recognition. The initial finding shows that the quality of disclosure, which is measured by AIMR scores, is negatively related with discretionary accruals. However, additional analysis shows that higher disclosure quality firms, that are experiencing good news (experiencing positive share return and positive cash from operation), adopts more income-decreasing accruals compared to firms that have lower quality of reporting. The study concludes that higher disclosure quality firms smooth income more aggressively than firms with low quality of disclosure.

Therefore, the disclosure quality is negatively associated with the earnings quality. The study concludes that higher disclosure quality is not always synonymous with less earnings management. Furthermore, Fekrat and Riahi-Belkaoui (2002) examine the relationship between earnings timeliness and disclosure informativeness. The study relies on a composite index of three aspects of earnings timeliness; slope coefficient from regression between earnings and stock returns from Basu (1997) model, R-square from Basu (1997) model, and R-square from regression between return and earnings and change in earnings. The disclosure informativeness measured by the AIMR disclosure scores. The result shows a negative relation between the timeliness metrics and disclosure after controlling for other firm characteristics. They interpret this finding by stating that firms whose earnings do not explain well the effects of firm's current activities and outcomes on equity value will institute better disclosure systems and improve their disclosure informativeness. Using data from Malaysian firms, Jaffar, Jamaludi, and Rahman (2007) investigate whether earnings quality and ownership structure influence the disclosure quality. They hypothesize that disclosure quality[7] is negatively associated with the earnings quality which proxy by discretionary accruals. Moreover, they also hypothesize a positive relation between disclosure quality and government ownership of firms. Results are consistent with the predictions.



[7] Jaffar, Jamaludi, and Rahman (2007) use a modified disclosure theme suggested by Beattie,McInnes and Fearnley (2004). The disclosure quality contains 79 items with 9 themes as follows; (1) Business description, (2) Financial information, (3) Management analysis, (4) Management and shareholder information, (5) Operating data, (6) Forward-looking information, (7) Not Jenkins (e.g. employee, customer, environmental), (8) Board objectives and strategy, and (9) Industry structure.

# CHAPTER III

# THEORY AND HYPOTHESES DEVELOPMENT

## 3.1 Theory and Hypotheses Development

Agency theory identifies the agency relationship between manager and shareholders (Jensen and Meckling 1976). The implication from agency theory is that in any firm, there is an agency problem caused by the conflicts of interest and the information asymmetry between outside shareholders and corporate managers. The information asymmetry denotes that market participants have unequal information sets. It occurs when some investors know more about a firm's value because they have private information. This creates an adverse selection problem in the market when uninformed investors cannot accurately evaluate the true economic value of the firm. Consequently, managers are stimulated to disclose more information because disclosure can directly lower the amount of private information relative to publicly available information, and it indirectly reduces private information search incentives (Diamond, 1985; Verrecchia, 2001).

Prior research suggests that corporate disclosure can mitigate agency costs and information asymmetry. For example, Prabowo and Angkoso (2006) suggest that financial statements, including disclosure, are one main device to reduce the agency problem. Healy and Palepu (2001) note that complete and transparent financial and non-financial information can reduce information asymmetry and agency cost between internal and external stakeholder of firms. Study by Diamond and Verrecchia (1991), and Kim and Verrecchia (1994) suggest that increased voluntary disclosure

reduces information asymmetries between management and outside investors, and among different types of investors. This, in turn, improves liquidity in a firm's stock, making it more attractive to institutional investors. Moreover, disclosure can affect information asymmetry by changing the trading behavior of uninformed investors because those uninformed investors will have greater access to information about the firms' activities when firms provide more disclosure. (Chang et.al, 2008). The "Investor Recognition Hypothesis" (Merton, 1987) indicates that such investors are more likely to invest and trade in firms that are well known or that they judge favorably. If higher disclosure quality increases a firm's visibility and/or reduces the costs of processing firm specific public information, then higher disclosure quality[1] will induce more trading in the firm's stock by uninformed investors. Moreover, corporate disclosure also helps investors to evaluated firm value. Verrecchia (1990) demonstrates that even if disclosure is costly because of product market consequences, managers may voluntarily expand disclosure to correct undervaluation by the capital market. Lang, Lins, and Maffett (2009) note that expanded disclosure is an important factor that reduces transaction costs, increases stock liquidity, decreases cost of capital and increases firm value. In sum, corporate disclosure has a positive impact on the efficient functioning of capital markets in many ways. Research indicates that disclosure increases firm value by improved stock liquidity (Welker, 1995; Healy et.al, 1999; Gelb and Zarowin, 2002), increased information intermediation (Lang and Lundholm, 1993; Healy et.al, 1999), and lower cost of capital (Botosan, 1997; Botosan and Plumlee, 2000; Hail, 2002).

[1] Cheng, Collins, and Huang (2006a) stated that the disclosure measured by S&P:T&D scores are relative quantity of information disclosed. This potentially limits the usefulness of the scores as a proxy for disclosure quality. However, Botosan, Plumlee, and Xie (2004) point out that disclosure quantity and quality are not separable information attributes thus, prior empirical research frequently used the quantity of disclosure as a proxy for quality of disclosure.

While several researches suggest that corporate disclosure affects firm value by reducing cost of capital, the other stream of literature illustrates that a firm's earnings attributes such as earnings volatility and accruals quality also influence firm's cost of capital. Leuz and Verrecchia (2005) document that higher information quality increase expected cash flow, which in turn reduces the firm's cost of capital. Therefore, poor information quality leads to misaligned capital investment by the firm, which rational investors anticipate and price in equilibrium by discounting firms' expected cash flow at a higher rate of return. Empirical research indicates negative association between earnings attributes and cost of capital (Affleck-Graves et.al, 2002; Cohen, 2003; Francis et.al, 2004; Francis, LaFond et.al, 2005; Bhattacharya et.al, 2007; McInnis, 2010). The basic idea of this linkage is that if firm's information lack quality, there are greater information risk being imposed on investors. Consequently, the rational investors will price-protect against this problem, raising the firm cost of capital.

Two streams of research mentioned above provide the underlying rationale for the hypothesis. The first identifies the relation between degree of disclosure and transparency and firm's cost of capital, while the second links earnings attributes to firm's cost of capital. Moreover, Easley and O'Hara (2004) document that the precision and quantity of information affects firm's cost of capital. In sum, these two lines of research yield the predictions about the association between degree of disclosure and transparency and earnings attributes.

The degree of disclosure could be related to earnings attributes in one of two competing ways: the complementary relationship or the substitutive relationship

(Francis et.al, 2008). The complementary view indicates that firms with good (poor) earnings attributes will issue more (less) expansive disclosures. That is the degree of disclosure and earnings attributes are positively associated (Dye, 1985; Jung and Kwon, 1988; Verrecchia, 1990). However, the substitutive view indicates that firm with good (poor) earnings attributes will issue less (more) expansive disclosures. That is the degree of disclosure and earnings attributes are negatively associated (Grossman and Hart, 1980; Verrecchia, 1983; Penno, 1997). In addition to introducing the two competing relationship, Francis et.al (2008) also exhibit the complementary relation between earnings quality and disclosure. They state that firm with poor (more) earnings quality issue fewer (more) disclosure. However, other empirical studies find positive relations as well as negative relations between disclosure and earnings attributes, depending on the measures of disclosure and earnings attributes examined.

Contrary to Francis et.al (2008), this study argues that the association between earnings attributes and corporate disclosure is substitute rather than complementary relationship. The intuition is that managers have incentive to make voluntary disclosure when market participants find the disclosure useful in assessing firm value (Dye, 1985). Moreover, the voluntary disclosure is more useful for investors in assessing firm value when current earnings are less informativeness, or when future earnings are more uncertain. In these settings, investors are likely to demand additional disclosures to supplement the information contained in earnings (Chen, Defond, and Park, 2002). In addition, Jaffar et.al (2007) document that the agency cost in firms with poor earnings quality is high when information asymmetry is high. Therefore, poor earnings quality firms increase the voluntary disclosure in their report

to reduce the information asymmetry and conceal the poor earnings quality. Furthermore, since firm's disclosure and earnings attributes are within the discretion of management (Verrecchia, 1990), and earnings attributes are innate information firm characteristics that managers cannot control in short run this study argues that managers have incentive to disclose more information when firms' earnings attributes are poor in order to reduce the information asymmetry, reduce the cost of equity, and increase firms' value. Thus, the prediction about the relationship between earnings attributes and corporate disclosure stated in alternative form is as follow:

H1: The earnings attributes are negatively associated with the degree of corporate disclosure and transparency.

In order to tests whether earnings attributes associated with firm's transparency and disclosure. This study measures transparency and disclosure by using Standard and Poor's transparency and disclosure criteria (S&P: T&D). Moreover, the S&P:T&D scores are classify into three broad categories: Ownership structure and investor rights, Financial transparency and information disclosure, and Board and management structure and process. Therefore, this study also examines the relationship between firms' earnings attributes and the three categories of S&P: T&D.



Prior research employs various mechanisms to measure firms' disclosure such as self-construct scores (Botosan, 1997; Francis et.al, 2008), AIMR rating criteria (Lang and Lundholm, 1996; Sengupta, 1998; Healy et.al, 1999; Lobo and Zhou, 2001; Gelb and Zarowin, 2002; Shaw, 2003), and the S&P:T&D scores (Cheng, Collins, and Huang, 2003; Khanna et.al; 2004; Chen et.al, 2007). The recent study by; Francis et.al (2008) use a self-construct scores to investigate the relation between voluntary

disclosure and earnings quality. Although, the scores are divided into four categories including summary to historical results, other financial measures, non-financial measures, and projected information. Most details in each category captures only information regarding to financial measures such as cash flow forecast, sales forecast, unit selling price, growth in investment, and cost of capital. While the three categories of S&P:T&D scores capture both financial measures (Financial transparency and information disclosure category) and non-financial measures. (Ownership structure and investor rights category and Board and management structure and process category).

The hypotheses between firms' earnings attributes and the three categories of S&P: T&D are based on the reason that firms issue more disclosure in order to reduce the information asymmetry, enhance investor's confidence, reduce the cost of equity, and increase firms' value (Diamond and Verrecchia, 1991; Botosan and Plumlee, 2002; Chen et.al, 2003; Lambert et.al, 2007). However, firms whose earnings do not explain well the effects of firm's current activities and outcomes on equity value will institute better disclosure systems and improve their disclosure informativeness (Fekrat and Riahi-Belkaoui, 2002). Therefore, this paper predicts that when firms' earnings are not informativeness, management will try to compensate for the poor earnings attributes by issuing more disclosure to their stakeholders both financial and non-financial measures. Moreover, prior research indicates that firms with better corporate governance will have better stock returns and higher market valuation (Drobetz, Schillhofer, and Zimmermann, 2004; Larcker, Richardson, and Tuna, 2004; Klein, Shapiro, and Young, 2005; Black, Jang, and Kim, 2006). This study also predicts that management tends to disclose information regarding the corporate

governance including ownership structure and investor rights and board and management structure, in order to enhance their stock liquidity and firm value. According to the reasons above, the hypotheses, stated in its alternative form, are as follows:

H2: The earnings attributes are negatively associated with the degree of corporate disclosure and transparency in ownership structure and investor rights category.

H3: The earnings attributes are negatively associated with the degree of corporate disclosure and transparency in financial transparency and information disclosure category.

H4: The earnings attributes are negatively associated with the degree of corporate disclosure and transparency in board and management structure and process category.

# CHAPTER IV

# RESEARCH DESIGN

## 4.1 Sample

The sample used in this study consists of listed Thai firms in SET100 index. In order to be included in the study, a firm must have a full set of financial information covering the entire 1994-2009 fiscal year. From the samples, incomplete or missing data firms and restatement firms were removed.

This study focuses on the listed Thai firms in SET100 index which is the representative of Thai listed firms based on statistical information in January and February 2005. The criteria for including listed firms in SET100 index determined by The Stock Exchange of Thailand (SET) are firm size, firm liquidity and free float of shareholders. The details are as follows. The first step, SET selects 200 stocks in The Stock Exchange of Thailand during the evaluation period which have the largest average daily market capitalization for the last 12 months and have a trading period for a minimum of 6 months. Suspended or delisted stocks and stocks which might be delisted or suspended in the near future are excluded. Next, SET selects only stocks which have a monthly turnover value of the stock on the main board more than 50 percent of the total average monthly turnover per stock, and these stocks must be continuous for at least 9 of 12 months. Then, SET chooses stocks which maintain a share distribution or a percentage of free float not less than 20 percent of the paid-up

capital of the listed firms. Finally, SET identifies the 100 largest stocks by average daily market capitalization.

According to the SET criteria mentioned above, SET100 firms are acceptable as a benchmark of Thai listed firms because of their firm size and liquidity. Based on statistical information in January and February 2005, the market value of equity of SET100 firms is 81% while the trade volume of equity is 73% of all listed firms in SET. In addition, SET100 firms are likely to be the greatest interest to individual and institutional investors, particularly international investors. Moreover, these firms are expected to practice relatively higher standards of corporate governance, including corporate transparency and disclosure compared to other listed firms. Furthermore, SET100 firms are ready to respond with new rules or new regulations regarding corporate transparency and disclosure. Thus, these SET100 firms can be the role models for others.

The data regarding disclosure and transparency are hand collected from the annual registration statements[1] (Form 56-1), SET Market Analysis and Reporting Tool (SETSMART) database, company website, and annual report for the years 2005 to 2008. In order to calculate earnings attributes, the financial and accounting data are collected from the SETSMART on-line services, form 56-1, annual reports, and on DATASTREAM database for the years 1994 to 2009.

[1] The Office of the Securities and Exchange Commission (SEC) requires all companies listed on the Stock Exchange of Thailand to fill in the annual registration statement (From 56-1). They need to provide accurate and clear information for investors to understand the operation, significant change of the corporation and possible risk.

**4.2 Corporate disclosure and transparency variables**

The focus of the degree of disclosure and transparency (or disclosure quality) of listed firms has increased in recent times (Healy and Palepu, 2001). Beretta and Bozzolan (2008) mention that the failure of large firms has placed the pressure on standard setters and listed firms to increase the quality of corporate reporting and disclosure.

Several studies exploit a number of mechanisms to measure firms' disclosure and transparency. For example, Botosan (1997) constructs a disclosure index based on the amount of voluntary disclosure in annual reports that are provided by listed firms. The index reflects five categories of voluntary information including background information, summary of historical results, key non-financial statistics, projected information and management discussion and analysis. Francis et.al (2008) use self-constructed scores by modifying the Botosan (1997) disclosure index. They argue that self-construct measures dominate externally generated scores where there are additional questions with respect to what disclosures are captured. Moreover, a self-constructed metric can be calculated for any firm then, selection biases are less severe for samples based on this method. However, they also indicate the disadvantage of self-construct scores such as being difficult to replicate due to the researchers' judgment involved and the labor intensity of the coding process.

Instead of using self-construct scores, various studies of disclosure and transparency have used analysts' rating of firms' disclosure quality, reported in the Association of Investment Management and Research Corporate Information Committee Reports (AIMR) (Lang and Lundholm, 1993; Welker, 1995; Lang and

Lundholm, 1996; Sengupta, 1998; Healy et.al, 1999; Lobo and Zhou, 2001; Gelb and Zarowin, 2002; Lundholm and Myers, 2002; Shaw, 2003; Brown and Hillegeist, 2007). For example, Healy et.al (1999) investigate the benefits of expanded voluntary disclosures by using AIMR ratings. They describe that this rating method provides a comprehensive measure of disclosure, reflecting the quality of both formal disclosures and informal disclosures. Moreover, the AIMR ratings also reflect the expertise and experience of top financial analysts. In addition, Shaw (2003) explains that AIMR ratings contain industry-specific analyst evaluations of disclosure quality on three dimensions: annual published information, quarterly and other published information, and analyst relations and related aspects. Within these categories, each industry-specific analyst group prepares a list of important disclosure aspects, weighted to reflect industry information requirements, and assigns a score to each firm.

Recently, the transparency and disclosure score criteria of Standard and Poor's are used as a measure of firms' disclosure quality. Patel et.al (2002) measure the S&P transparency and disclosure scores (S&P:T&D) in 19 emerging markets (354 firms followed by the S&P/IFCI Index). They find that, on average, firms with higher S&P:T&D scores have higher price-to-book ratios. Using only US data, Patel and Dallas (2002) document significant correlations between S&P:T&D rankings scores and determinants of expected returns. The result reveals that firms with high S&P:T&D scores have lower market risk (beta), higher price to book equity ratio, and larger size. Cheng et.al (2003) find that stronger S&P:T&D reduces the firm's market beta and leads to increased risk-adjusted abnormal returns and earnings response coefficients around the release of the S&P:T&D scores. They also find that the three different S&P:T&D dimensions have different effects on these market metrics.

Moreover, Khanna et.al (2004) use the S&P:T&D scores in 24 Asia Pacific and European countries to unveil a positive relationship between transparency and disclosure scores and cross-border economic interactions after controlling for firm size, performance, and legal origin. Another study that utilizes the T&D database of S&P is Cheng, Collins, and Huang (2006b). They investigate whether S&P:T&D scores provide new information to financial markets and find the relationship between composite scores and abnormal returns. Furthermore, Chen et.al (2007) use S&P:T&D as a proxy for corporate governance and find that the economic cost of equity liquidity are greater for firms with poor information disclosure and transparency practices. Focusing on Thai data, Jiamsakul (2007) investigates the effect of disclosure and transparency (proxy by S&P:T&D) and board of directors on firms performance of SET100 firms. The result reveals that firms with high level of disclosure and transparency can reduce asymmetry of information and improve firm performance.

In addition, Cheng et.al (2006a) find evidence that greater financial disclosure and stronger shareholder rights regimes interact in reducing firms' costs of equity capital. Their study also provide the implication of S&P:T&D approach. They stated that the difference across firms measured by S&P:T&D scores are relative quantity of information disclosed. This potentially limits the usefulness of the scores as a proxy for disclosure quality. However, Botosan, Plumlee, and Xie (2004) point out that, while prior empirical research has used the quantity of disclosure as a proxy for quality of disclosure, in many cases disclosure quantity and quality are not separable information attributes.

There are studies that employ other tools for measuring degree of disclosure and transparency. For example, Trueman (1986) uses voluntary publication of earnings forecast to proxy for disclosure quality of firms. Cheung et.al (2006) use a survey instrument for measuring corporate disclosure quality developed by Thai Institute of Directors Association (IOD) with Technical Assistance from McKinsey and Company in 1999 to examine the determinant of disclosure and transparency in Hong Kong and Thailand. Chen and Jian (2007) use the Information Disclosure and Transparency Rankings System (IDTRs) established by Taiwan Securities Futures Institute to examine the impact of disclosure quality on interest cost of debt.

As mentioned above, the disclosure literature uses several proxies for firms' disclosure practices, including self constructed scores, AIMR scores and S&P:T&D scores. This study selects the transparency and disclosure scores, provided by the Standard and Poor's, as a proxy for the degree of disclosure and transparency of the firms since this scoring system is one of the most popular devices which researchers have used. Moreover, S&P:T&D scores is developed from analysis of the latest available annual reports, and assess the level of transparency and disclosure of firms in emerging markets (Asia, Latin America, Central and Eastern Europe, and Africa) as well as developed markets (Europe, developed Asia, and the U.S.). The investors who trade on SET, including institutional and foreign investors have a high level of trust in this international scoring system. Therefore, this scoring system is appropriate for the sample firms in this study.

Standard and Poor's developed their study of disclosure as part of an initiative to provide corporate governance information and analytical services to market

participants. The study's methodology was developed from S&P's previous work in the area of corporate governance scoring (Patel and Dallas, 2002).[2] S&P:T&D scores are measured by 98 possible attributes divided into the three broad categories: Ownership structure and investor rights (28 attributes), Financial transparency and information disclosure (35 attributes), and Board and management structure and process (35 attributes). The listings of each attribute are provided in Appendix B.

This study acquires transparency and disclosure scores (S&P:T&D scores) from Form 56-1, SETSMART database and annual reports for the years 2005-2008 in order to mitigate the fluctuation of firms' disclosure. The inclusion of each attribute is scored on a binary basis as "yes" (included) or "no" (not included). Each "yes" answer is equal to one point, "no" is equal to 0 point. The overall S&P:T&D score (TDS) for each firm is calculated as:

$$TDS = \sum_{j} \sum_{k} S_{jk} \qquad (1)$$

Where;

*TDS* = S&P transparency and disclosure scores

*j* = the attribute category subscript, *j*=1, 2, 3

*k* = the attribute subscript, *k* = 1, . . . , 98

S*jk* = the number of info items disclosed (answered as "yes") by the firm in each category.

[2] In September 2005, S&P announced that it would cease offering its corporate governance scoring services to market participants (Plitch 2005).

Einhorn and Hogarth (1975) note that the equal weighting system is superior to the different weighting systems. In their paper, the predictive ability of equal weighting system and different weighting system is compared. The result shows that equal weighting is a viable alternative to standard regression methods because equal weighting system is not estimated from the data and therefore does not consume degrees of freedom. Moreover, equal weighting system is estimated without error so they have no standard errors. Finally, a weighting system cannot reverse the true relative weights of the variables. On the other hand, an unweighted score is more appropriate than the weighted score in terms of less subjective and easier method for a users' interpretation. The unweighted score assumes that each question is equally important. This can obviate the necessity of making judgment as to the relative importace of each question. Therefore, this study uses total unweighted TDS to proxy for firms' disclosure and transparency. Moreover, this paper focuses for voluntary disclosure by excluding the disclosure items used by all firms. The reason is that there are some disclosure items which all firms are required by regulator and some disclosure items which all firms are generally disclosed. In order to normalize data, this paper also undiscretizes TDS adjusted scores by transforming the unweighted TDS to a percentage form. Thus, TDS adjusted scores are ranked by continuation from 0-100.

In this paper, TDS adjusted is defined as four groups for testing the hypotheses. The first is for testing hypothesis 1, TDS adjusted is define as the total S&P:T&D scores ($TDS\_TOTAL$). Moreover, TDS adjusted can be disaggregated into three categories: disclosure and transparency in ownership structure and investor

rights ($TDS\_OWN$), financial transparency and information disclosure ($TDS\_FIN$), and disclosure and transparency in board and management structure and process ($TDS\_BOARD$) in order to test for hypothesis 2, 3, and 4.

## 4.3 Earnings Attributes Variables

The measure of earnings attributes variables focuses on the seven earnings attributes considered by Francis et.al (2004) procedures and estimates each attribute over rolling ten-year windows.

### 4.3.1 Accruals Quality

Accruals quality refers to the extent to which accruals map into the related cash flow realization. Boonlert-U-Thai, Meek and Nabar (2006) notes that when accruals shift or adjust the recognition of cash flows over time, the adjusted earnings better measures firm performance and better predicts the future earnings and cash flows. Dechow and Dichev (2002) document that accruals are the product of judgments, estimates, and allocations. The quality of accruals and earnings is decreasing in the magnitude of estimation error in accruals. They also develop a measure of accruals quality and define that accruals quality is the standard deviation of residuals from firm-specific regression of current working capital accruals on last year, present, and next year cash flows from operations.

However, McNichols (2002) argues that the changes in sales revenue and property, plant, and equipment are important in forming expectations about current accruals, over and above the effects of operating cash flows. The research shows that

applying variables from the Modified Jones model into the cross-sectional Dechow and Dichev (2002) model significantly increases its explanatory power and thus reduces measurement error. The accruals quality is measured as the following:

$$\frac{TCA_{i,t}}{Asset_{i,t}} = \beta_{0.i} + \beta_{1,i}\frac{CFO_{i,t-1}}{Asset_{i,t}} + \beta_{2,i}\frac{CFO_{i,t}}{Asset_{i,t}} + \beta_{3,i}\frac{CFO_{i,t+1}}{Asset_{i,t}} + \beta_{4,i}\frac{\Delta Sales_{i,t}}{Asset_{i,t}} + \beta_{5,i}\frac{PPE_{i,t}}{Asset_{i,t}} + v_{i,t} \quad (2)$$

Where;

$TCA_{i,t}$ = firm *i*'s total current accruals in year *t*. ($\Delta CA_{i,t} - \Delta CL_{i,t}$)

$Asset_{i,t}$ = the average total assets of firm *i* year *t* and *t-1*.

$CFO_{i,t-1}$ = cash flow from operations of firm *i* year *t-1*.

$CFO_{i,t}$ = cash flow from operations of firm *i* year *t*.

$CFO_{i,t+1}$ = cash flow from operations of firm *i* year *t+1*.

$\Delta Sales_{i,t}$ = change in sales of firm *i* year *t*.

$PPE_{i,t}$ = property, plant, and equipment of firm *i* year *t*.

$CA_{i,t}$ = firm *i*'s current assets in year *t*.

$CL_{i,t}$ = firm *i*'s current liabilities in year *t*.

$Cash_{i,t}$ = firm *i*'s cash in year *t*.

$v_{i,t}$ = error terms of firm *i* year *t*.

This study estimated equation (2) using rolling ten-year windows. These estimations yield a series of firm- and year-specific residuals, which form the basis for the accruals quality. Cash flow from operations of firms is from cash flow approach.

Accruals quality (*Accruals*) is the negative value of the standard deviation of firm i's estimated residuals, $Accruals = -\sigma(\hat{v}_{i,t})$. A low negative value for *Accruals* indicates good accruals quality.

### 4.3.2 Earnings Persistence

Earnings persistence captures earning sustainability or recurring earnings. Francis et.al (2004) indicate that persistence have a direct link to information risk. Moreover, prior studies in capital market find that earnings persistence is positively related to stock prices (Kormendi and Lipe, 1987; Collins and Kothari, 1989). Following previous studies (Lev, 1983; Ali and Zarowin, 1992a; Ali and Zarowin, 1992b), earnings persistence can be measured as the slope coefficient from a regression of current earnings on lagged earnings.

$$X_{i,t} = \beta_{0,i} + \beta_{1,i} X_{i,t-1} + \nu_{i,t} \qquad (3)$$

Where;

$X_{i,t}$ = firms *i*'s net income before extraordinary items in year *t*, divided by the average total assets of year *t*.

$X_{i,t-1}$ = firms *i*'s net income before extraordinary items in year *t-1*, divided by the average total assets of year *t-1*.

The autoregressive model of order one (AR1) is used. Following Francis et.al (2004), this study estimated equation (3) by rolling ten-year windows. The value of the coefficient $\beta_{1.i}$ is used for measuring the earnings persistence (*Persist*). A greater *Persist* value indicates more earnings persistence.

### 4.3.3 Earnings Predictability

Lipe (1990) provides a measure of earnings predictability as it is reflected in the variance of the earnings shocks (as variance increases, the predictability decreases). Francis et al. (2004) follow Lipe's study by measuring earnings predictability using the square root of the estimated error-variance from the firm-specific AR1 models of earnings like earnings persistence. In this study, earnings predictability is equal the negative value of the standard deviation of the error from equation (3). $Predict = -\sigma(\tilde{v}_{i,t})$. The interpretation is that, a low negative value of *Predict* indicates more predictable earnings. More predictable earnings are viewed as higher quality, while less predictable earnings are viewed as lower quality.

Although both predictability and persistence are measured by earnings and lag earnings, the difference between predictability and persistence is that the predictability of earnings is a function of the average absolute magnitude of the annual earnings shocks, whereas the time-series persistence of earnings reflects the autocorrelation in earnings.

### 4.3.4 Smoothness

Francis et.al (2004) measure smoothness as the ratio of the standard deviation of earnings to the standard deviation of cash flow.

$$Smooth_{i,t} = \frac{\sigma(NIBE_{i,t} / Asset_{i,t})}{\sigma(CFO_{i,t} / Asset_{i,t})} \quad (4)$$

Where;

$\sigma_i$ = firm *i*'s standard deviation.

$NIBE_{i,t}$ = firm *i*'s net income before extraordinary items at year *t*.

$CFO_{i,t}$ = firm *i*'s operating cash flow at year *t*.

$Asset_{i,t}$ = firm *i*'s average total assets.

Smoothness is calculated over rolling ten-year windows. Larger value of *Smooth* indicates less earnings smoothness.

Prior research provides conflicting views about earnings smoothness. On one hand, earnings smoothness is a desirable attribute (Demski, 1998). In this view, smoothness reflects the idea that managers use their private information about future income to smooth out transitory fluctuations and thereby achieve a more representative reported earnings number (Francis, Olsson, and Schipper, 2006). Thus, smoother earnings indicate higher earnings quality that imply favorable attribute. On the other hand, some researchers view earnings smoothness as an undesirable earnings attribute. For example, Leuz, Nanda, and Wysocki (2003) note that smoothness reflects the extent to which accounting standards allow managers to artificially reduce variability in earnings, presumably to obtain some capital market benefits associated with a smooth earnings stream. Under this view, smoother earnings indicate poorer earnings quality that imply unfavorable attribute.

### 4.3.5 Value Relevance

Value relevance is based on the idea that accounting numbers should explain the information that is impounded in returns (Francis et.al, 2006). Therefore, value

relevance is the ability of one or more accountings numbers to explain variation in stock returns. Following Francis and Schipper (1999), Collins, Maydew, and Weiss (1997), and Francis et.al (2004), this paper measures value relevance as the value of the explained variability of a regression of annual returns on the level and change in earnings per share.

$$RET_{i,t} = \beta_{0,i} + \beta_{1,i} EARN_{i,t} + \beta_{2,i} \Delta EARN_{i,t} + \nu_{i,t} \quad (5)$$

Where;

$RET_{i,t}$ = firm *i*'s 12 month return ending two months after the end of fiscal year *t*.

$EARN_{i,t}$ = firm *i*'s income before extraordinary items (*NIBE*) in year *t* scaled by market value at the end of year *t-1*.

$\Delta EARN_{i,t}$ = change in firm *i*'s income before extraordinary items (*NIBE*) in year *t* scaled by market value at the end of year *t-1*.

This paper estimate equation (5) for each firm over rolling ten-year windows. Value relevance equal the adjusted $R^2$ from equation (5); $Relevance = R^2_{i.t.eq5}$. Large value of *Relevance* indicates more value relevance earnings.

### 4.3.6 Conservatism

Conservatism is derived from BASU (1997) reverse regressions which use earnings as the dependent variable and returns measures as dependent variables.

$$EARN_{i,t} = \alpha_{0,i} + \alpha_{1,i} NEG_{i,t} + \beta_{1,i} RET_{i,t} + \beta_{2,i} NEG_{i,t} * RET_{i,t} + \upsilon_{i,t} \quad (6)$$

Where;

$EARN_{i,t}$ = firm *i*'s income before extraordinary items in year *t* (*NIBE*) scaled by market value at the end of year *t-1*.

$NEG_{i,t}$ = 1 if $RET_{i,t} < 0$ and 0 otherwise.

$RET_{i,t}$ = firm *i*'s 12 month return ending two months after the end of fiscal year *t*.

Similar to other earnings attributes, equation (6) is estimated on a firm-year specific basis, using rolling ten-year windows. Following Basu (1997) and Francis et.al (2004), the measure of conservatism is the ratio of the coefficient on bad news to the coefficient on good news. $Conservatism = \frac{(\beta_{1,i} + \beta_{2,i})}{\beta_{1,i}}$; Large value of $Conservatism$ indicates more conservative earnings.

### 4.3.7 Timeliness

Agency theory suggests that financial statements including disclosure are one main device to reduce the agency problem. Therefore, investors should expect to receive timely information for making decision. However, timely information is costly. Thus, managers should trade off between degree of information in disclosure and timeliness.

Earnings timeliness means the extent to which current-period accounting earnings incorporate current-period economic value or income (Ball, Kothari, and

Robin, 2000). From the definition above, the timeliness in this study measures as the value of the explained variability from earnings on returns controlling for the sign of those returns derived from BASU (1997) reverse regression in equation (6) by using rolling ten year windows (Ball, Kothari, and Robin, 2000; and Francis et.al, 2004). Similar to relevance, $Timeliness = R^2_{i,t,eq6}$. Large value of *Timeliness* indicates more timely earnings.

## 4.4 Control Variables

### 4.4.1 Firm Size

According to political cost theory, Watts and Zimmerman (1986) suggest that companies that are politically visible and subject to high political costs (which are highly dependent on firm size) are likely to disclose more information. Many empirical studies have associated disclosure quantity and quality, measured by a disclosure index with firm size and many have investigated the relationship between firm characteristics and agency problems. For example, Lang and Lundholm (1993) find that analyst ratings of disclosure are higher for firms that perform well, for larger firms, firms with a weaker relation between annual stock returns and earnings, and firms that issue securities. Black et.al (2006) investigates the cross-sectional differences in Korean firms' corporate governance practices and finds that firm size, risk and long-term profitability and need for equity capital are positively related to better corporate governance.

Moreover, Hope (2003) observes a positive correlation between firm size and the CIFAR index for annual report disclosure. Similarly, Hossain, Ahmad, and

Godfrey (2005) find that voluntary disclosure of prospective information is related to firm size. Finally, Veronina, Morris, and Gray (2005) measure the disclosure and transparency practices of 102 listed Russian firms in 2001. They also investigate the cross-sectional differences in their disclosure and transparency scores. Using a checklist of 441 items from International Accounting Standards (IAS), they find that the use of a Big-5 auditor, foreign listing, size, government shareholdings and independence of CEO and board chair are associated with disclosure and transparency.

This study expects larger firms to have higher disclosures and transparency scores (TDS adjusted) because they are closely followed by financial intermediaries, have more comprehensive disclosure standards in place to minimize the political costs of noncompliance with generally accepted accounting principles (GAAP), and can better afford the cost of voluntary disclosure (Aksu and Kosedag, 2006). In this paper, size measured as the natural log of the firm's market value of equity as of the end of the firm's fiscal year. $Size = \ln(MVE)$. The expected sign is positive because larger firms are expected to have higher degree of disclosure and transparency because the benefits are expected to be higher while the costs are expected to be lower.



### 4.4.2 Firm Growth

Market to book ratios (*MTB*) has been used in the literature as a proxy for risk and growth potential. Core (2001) notes that a low ratio is associated with low growth potential and high free cash flows under the discretion of insiders. Moreover, such firms have little need for external finance and, thus, voluntary disclosure.

According to agency theory, prior research should expect to see a positive relationship between MTB and transparency and disclosure scores (TDS).[3] For example, Berglof and Pajuste (2005) report that more information is publicly available in larger firms, firms with lower leverage, higher financial performance, higher market to book ratios and more concentrated ownership.

Contrary to the predictions of agency theory, there is an argument that suggests a negative relationship between MTB and TDS because a low MTB can also be considered a sign of undervaluation by the market. The equity's market value might be low relative to its book value not because of the firm's low growth potential but simply because future prospects of the firm are not properly communicated to the public or there is a general undervaluation in the market due to local economic uncertainties. In such cases, management may take actions to increase disclosure and transparency and put better CG practices in action to remedy this unwanted perception and its negative effect on firm value (Aksu and Kosedag, 2006).

In this paper, market to book ratio is proxy for *Growth*. The sign is not predicted due to the mixed results of prior research as mentioned above.



### 4.4.3 Leverage

Agency theory also suggests a strong link between leverage and disclosure (Jensen and Meckling, 1976). In highly leverage firms, there is a higher demand for

[3] Size and market to book ratio are also important variables that explain excess returns both in developed and many emerging markets (Fama and French 1993). As such, these two variables may also act as controls for this omitted variable.

and supply of information and creditors themselves produce information about the borrower. Furthermore, Jensen (1986) documents that as a result of monitoring by informed creditors and strict debt covenants, the debtor firm have to commit itself to the discipline of debt payments and cannot as freely expropriate the free cash flows. Empirical studies have provided conflicting results about relationship between disclosure and leverage. For example, Hossain, Tan, and Adams (1994) find a positive relationship between disclosure and leverage. Hope (2003) finds a weakly negative relationship between these two variables while Ho and Wong (2001) find no relationship.

In this paper, leverage is measured as the total liabilities to total assets ratios. $Leverage = TL_{i,t} / TA_{i,t}$. The sign of leverage is not predicted due to the mixed results of prior research as mentioned above.

### 4.5 Model for Testing Hypotheses

To test whether earnings attributes are negatively associated with the level of corporate disclosure and transparency, the S&P:T&D adjusted scores are regressed on the earnings attributes variables and control variables. The following models are used for hypothesis testing. Model 1 is used to test for the negative association between earnings attributes and total transparency and disclosure score (Hypothesis 1). Then, model 2 is used to test for the negative association between earnings attributes and three categories of S&P:T&D adjusted score (Hypotheses 2, 3, and 4).

**Model 1:**

$$TDS\_TOTAL_{i,t} = \beta_0 + \beta_1 Accruals_{i,t} + \beta_2 Persist_{i,t} + \beta_3 Predict_{i,t} + \beta_4 Smooth_{i,t} + \beta_5 Relevance_{i,t} + \beta_6 Conservatism_{i,t} + \beta_7 Timeliness_{i,t} + \beta_8 Size_{i,t} + \beta_9 Growth_{i,t} + \beta_{10} Leverage_{i,t} + d_{05} + d_{06} + d_{07} + \varepsilon_{i,t}$$

**Model 2:**

$$TDS\_OWN_{i,t} = \beta_0 + \beta_1 Accruals_{i,t} + \beta_2 Persist_{i,t} + \beta_3 Predict_{i,t} + \beta_4 Smooth_{i,t} + \beta_5 Relevance_{i,t} + \beta_6 Conservatism_{i,t} + \beta_7 Timeliness_{i,t} + \beta_8 Size_{i,t} + \beta_9 Growth_{i,t} + \beta_{10} Leverage_{i,t} + d_{05} + d_{06} + d_{07} + \varepsilon_{i,t}$$

$$TDS\_FIN_{i,t} = \beta_0 + \beta_1 Accruals_{i,t} + \beta_2 Persist_{i,t} + \beta_3 Predict_{i,t} + \beta_4 Smooth_{i,t} + \beta_5 Relevance_{i,t} + \beta_6 Conservatism_{i,t} + \beta_7 Timeliness_{i,t} + \beta_8 Size_{i,t} + \beta_9 Growth_{i,t} + \beta_{10} Leverage_{i,t} + d_{05} + d_{06} + d_{07} + \varepsilon_{i,t}$$

$$TDS\_BOARD_{i,t} = \beta_0 + \beta_1 Accruals_{i,t} + \beta_2 Persist_{i,t} + \beta_3 Predict_{i,t} + \beta_4 Smooth_{i,t} + \beta_5 Relevance_{i,t} + \beta_6 Conservatism_{i,t} + \beta_7 Timeliness_{i,t} + \beta_8 Size_{i,t} + \beta_9 Growth_{i,t} + \beta_{10} Leverage_{i,t} + d_{05} + d_{06} + d_{07} + \varepsilon_{i,t}$$

Where;

$TDS\_TOTAL_{i,t}$ = Total S&P:T&D adjusted scores.

$TDS\_OWN_{i,t}$ = S&P:T&D adjusted scores in ownership structure and investor rights category.

$TDS\_FIN_{i,t}$ = S&P:T&D adjusted scores in financial and information disclosure category.

$TDS\_BOARD_{i,t}$ = S&P:T&D adjusted scores in board and management structure and process category.

$Accruals_{i,t}$ = Accruals quality of firm *i* year *t*.

$Persist_{i,t}$ = Earnings persistent of firm *i* year *t*.

$Predict_{i,t}$ = Earnings predictability of firm *i* year *t*.

$Smooth_{i,t}$ = Earnings smoothness of firm *i* year *t*.

$Relevance_{i,t}$ = Value relevance of firm *i* year *t*.

$Conservatism_{i,t}$ = Conservatism of firm *i* year *t*.

$Timeliness_{i,t}$ = Timeliness of firm *i* year *t*.

$Size_{i,t}$ = Size of firms ( $Size = \ln(MVE)$ ).

$Growth_{i,t}$ = Firms' growth measure as market to book ratio

$Leverage_{i,t}$ = Firms' leverage measured as the total liabilities to total assets.

$d_{05}$ = the indicator for year 2005
$d_{06}$ = the indicator for year 2006
$d_{07}$ = the indicator for year 2007
$d_{08}$ = the indicator for year 2008

# CHAPTER V

# EMPIRICAL RESULTS

The purpose of this study is to examine whether earnings attributes are negatively associated with the degree of corporate disclosure and transparency of listed Thai firms in SET100 index. The degree of corporate disclosure and transparency is measured by the S&P transparency and disclosure scoring system. Earnings attributes focus on both accounting-based and market-based. This chapter presents the details of empirical results.

## 5.1 Descriptive Statistics

Table 1 Panel A presents a summary of how the final sample was obtained. This study use SET100 companies over 4 years (2005-2008) for the empirical analysis. In order to calculated firm's earnings attributes, 130 firm-years are eliminated because their data are not available or incomplete data in the Datastream database, SETSMART database, and the company's annual registration statements or annual report. The final sample is 270 firm-years observations which is equivalent to 67.50% of all sample.

Table 1, Panel B presents the sample firms classified by industry. Industries are defined in accordance with the Stock Exchange of Thailand definition, and consist of agriculture and food, consumer products, financials, industrials, property and construction, resources, services, and technology. The majority of sample firms are

property and construction (31.11%) while the consumer products industry has only one firm (0.37%) in samples.

Table 2, Panel A presents the descriptive statistics of S&P:T&D adjusted scores (TDS adjusted)[1] of overall sample (years 2005-2008). The highest possible TDS adjusted score is 100, which is equivalent to 100% of 71 items (after deleting the item which all firms get one point). The average degree of TDS_TOTAL is 43.032%. The three categories of TDS score have 22, 21, and 28 attributes, respectively. The average score of TDS_OWN, TDS_FIN, and TDS_BOARD are 11.903%, 9.975%, and 21.154%, respectively. Table 2, Panel B to E presents the descriptive statistics of TDS adjusted score of each year. The average TDS adjusted score in each year are slightly different. It is interesting to note that SET100 firms have low dispersion.

Table 3 presents transparency and disclosure scores classified by industry and disclosure categories. The standard deviation of TDS adjusted scores is presented in the parenthesis. The TDS adjusted scores among industry have a slight difference. The average total scores are from 36.854 to 51.549. The financial firms have the highest score because this industry has more regulations than others while the minimum score is industrials firms. The standard deviation of TDS_FIN scores in each industry is quite low compared with TDS_OWN and TDS_BOARD. This means that the disclosure score of financial information categories of SET100 firms in each industry is not diverse.

[1] In order to focus only on voluntary disclosure, the following question numbers of 3, 11, 12, 13, 14, 15, 30, 32, 39, 40, 44, 45, 47, 53, 54, 55, 58, 59, 60, 61, 64, 65, 66, 67, 72, 74, and 76 are excluded from TDS scores since all firms get one point from each question.

Using yearly data from 2005-2008, Table 4 presents descriptive statistics of earnings attributes and control variables. In terms of accounting-based earnings attributes, the average value is slightly different across the years. The absolute values of the means (medians) of accruals, persistence, predictability, and smoothness are 0.115 (0.082), 0.379 (0.448), 0.063 (0.056), and 1.156 (0.910), respectively. The absolute values of the means (medians) of market based earnings attributes; value relevance, conservatism, and timeliness are 0.125 (0.060), 0.920 (0.058), and 0.093 (0.007), respectively. Unlike value relevance and timeliness, earnings conservatism is not consistent across the year. The conservatism of SET100 firms decreases from year 2005-2007 and increases in year 2008. With respect to control variables, the sample firms have a mean (median) size (*ln(MVE)*) equal to 10.976 (9.795). The mean (median) of firms' growth or market to book ratio is equal to 1.632 (1.196). The firms' leverage or total liabilities to total assets ratio is equal to 0.539 (0.535). The size and leverage of SET100 firms in each year are not much different, whereas firms' growth begins to decrease in year 2008.

**5.2 Correlations**

Table 5 reports the correlation matrix for the variables. This study focuses on the Pearson correlations because the Spearman-rank correlations are generally consistent with the Pearson correlations. Regarding to transparency and disclosure scores, the correlation coefficients indicate that three categories of TDS adjusted scores are significantly positively related to each other. The positive correlation between total TDS adjusted scores and firm size (0.556) is consistent with positive cost theory which indicates that larger firms disclose more information. The correlation between TDS adjusted scores and firms' growth is negative (-0.026).

Moreover, the positive correlation between TDS adjusted scores and firms' leverage (0.176) is consistent with Jensen and Meckling (1976) that there is a higher demand for and supply of information in highly leverage firms.

With respect to earnings attributes, *Accruals* exhibits a significantly positive correlation with *Predict*, and *Size* and a significantly negative correlation with *Smooth* and *Growth*. Overall, earnings attributes variables are significantly positively related to each other except *Smooth*. However, their correlation coefficients are less than 0.50 except correlation between *Accruals* and *Predict*. They are significantly positively correlated with Pearson coefficient 0.671. The variance inflation factor (hereafter, VIF) is tested to detect multicollinearity. As a rule of thumb, A VIF greater than ten suggests that regressor variables are highly correlated. This study finds that the VIFs of the regressor variables in each model do not exceed the cut-off point (ten), suggesting that there should be no serious multicollinearity on the following analysis of regressions.

**5.3 Regression Analysis**

The purpose of this study is to test whether there is the negative association between the degree of disclosure and transparency and firms' earnings attributes. Prior to conducting the hypothesis testing, the assumptions of linear regression are tested. The results show that the data sets do not violate the assumptions. First, the Durbin-Watson coefficient value confirms that there is no autocorrelation problem. Second, the mean value of residuals is zero. Third, this study employs White's test and Breusch-Pagan test to ensure that the heteroscadasticity problem does not exist.

Moreover, the variance inflation factors (VIF) are lower than 10, suggesting that there is no multicollinearity problem. Finally, the assumption of normal distribution of residuals is justified based on the Central Limit Theorem.

### 5.3.1 The Relationship Between TDS Scores and Earnings Attributes.

The regression of transparency and disclosure scores on earnings attributes are performed and shown in Table 6. The first column reports the model of total scores of S&P: T&D adjusted scores (*TDS_TOTAL*). The adjusted $R^2$ equals 43.4% (F=15.984 p-value=0.000). The model shows that accruals quality (*Accruals*) and earnings smoothness (*Smooth*) are negatively significantly related to *TDS_TOTAL*. As a consequence, this result supports hypothesis1 that the earnings attributes are negatively associated with corporate disclosure and transparency measured by total scores of S&P: T&D adjusted scores. This negative significant relationship indicates that firms with low accruals quality and high earnings smoothness have a tendency to disclose more information. The negative relation between *Accruals* and *TDS_TOTAL* suggest that firms with low accruals quality provide more corporate disclosure. The intuition behind this relation is the nature of accruals that the accruals are frequently based on assumptions and estimations. The increasing of working capital accruals indicates more estimation and errors of estimation, and therefore lower accruals quality (Dechow and Dichev, 2002). Vander and Marleen (2008) indicate that the level of disclosure increases when the level of working capital accruals increases. Therefore, the negative relation means that firms with low accruals quality have to disclose more information in order to improve investor confidence in the reported accounting information. The negative relation between *Smooth* and *TDS_TOTAL* is consistent with Shaw (2003) who notes that firms with higher disclosure smooth

income more aggressively compared to firms with low disclosure. Turning to the control variables, the evidence shows that firms' size (*Size*) and firms' leverage (*Leverage*) are positive significant in explaining the variation in *TDS_TOTAL* while firms' growth (*Growth*) is not. As expected, the positive association between *TDS_TOTAL* and *Size* implies that larger firms with higher following by investors and higher political costs of non-compliance or litigation will disclose more information which is consistent with prior studies. In addition, the positive relationship between *TDS_TOTAL* and *Leverage* implies that firms with higher leverage have to produce more information disclosure for creditors (Hossain et.al, 1994).

In order to test Hypothesis 2, 3, and 4, this study disaggregated disclosure scores into three broad categories following the S&P/T&D scoring system; Ownership structure and investor rights (*TDS_OWN*), Financial transparency and information disclosure (*TDS_FIN*), and Board and management structure and process (*TDS_BOARD*). The results of each category are shown in Table 6 Column 2 to 4. The adjusted $R^2$ of *TDS_OWN*, *TDS_FIN*, and *TDS_BOARD* models are 35.3% (F=11.649 p-value=0.000), 23.1% (F=6.881 p-value=0.000), and 29.3% (F=9.080 p-value=0.000), respectively. The adjusted $R^2$ of *TDS_FIN* model is the lowest. The result indicates that earnings attributes can explain only 23.1% of the variation in *TDS_FIN*. This is probably due to the fact that some financial information disclosure is already in financial statement. Moreover, the degree of disclosure in the financial information category of SET100 firms has low dispersion. Thus, managers turn to disclose more information in other categories instead. The result shows that only *Accruals* has a negative significant correlation with *TDS_OWN* while size, growth, and leverage are positively significantly related with *TDS_OWN*. These findings

support hypothesis2. The negative coefficient of *Accruals* means that firms with low accruals quality provide more information disclosure about ownership structure and investor rights. Moreover, larger, high growth, and high leverage firms disclose more information in this category.

Table 6 also presents the regression of the S&P:T&D adjusted scores in financial and information disclosure (*TDS_FIN*) on earnings attributes. The result is consistent with hypothesis 3. The finding shows the negative association between earnings predictability (*Predict*) and *TDS_FIN*. The plausible explanation is that firms with less earnings predictability will have a higher cost of equity capital than a comparable firm with more earnings predictability (Affleck-Graves et.al, 2002). Therefore, low earnings predictability firms have a tendency to offer more financial information to investors and stakeholders in order to enhance their confidence. In sum, this model provides little evidence on the negative relationship between *TDS_FIN* and earnings attributes because *Predict* has a weak negatively significantly associated with *TDS_FIN* while other earnings attributes are not significant at all. The plausible explanation is that managers of firms with poor earnings attributes have incentive to disclose more information whereas some financial information disclosure in *TDS_FIN* category is already in the financial statement. Thus, managers turn to consider non-financial information disclosure instead. For control variables, *Size* is positive significant while *Growth* is negative significant in *TDS_FIN* model. This means that low growth firms or undervalued firms will disclose more financial information to signal their quality to market.

The last column in table 6 reports the association between S&P:T&D adjusted scores in board and management structure and process (*TDS_BOARD*) and firm's earnings attributes. *TDS_BOARD* is negatively significantly related to accruals quality (*Accruals*) and earnings smoothness (*Smooth*) like the results of *TDS_TOTAL* model. *Size* and *Leverage* are positively significant while *Growth* is negatively significant. Overall, the results show that different forms of transparency and disclosure are associated with different earnings attributes.

The negative association between transparency and disclosure score and earnings attributes in Table 6 is consistent with the substitutive relationship that firms with poor earnings attributes will issue more expansive disclosure. In addition, the analysis from table 6 also reveals that the significant results of *TDS_TOTAL* may be driven by categories of *TDS_OWN* and *TDS_BOARD*. The variation in terms of disclosure in *TDS_FIN* is low since the standard deviation of *TDS_FIN* in table 2 Panel A is lowest. It is probable that both firms having good and poor earnings attributes equally provide the financial information to stakeholders. Thus, *TDS_FIN* is not the main category that drives the significant results of *TDS_TOTAL*. On the other hand, SET100 firms are required to report other information (non-financial disclosure) including disclosure about ownership and board in order to conform to corporate governance principle. For example, SET issues "the circulars regarding to the shareholder disclosure of listed firms in form 56-1 and annual report"[2] in September 2005. This recommendation is made in order to follow the OECD CG baseline. Moreover, SET also mandates "the corporate governance principles for

[2] Source of information: The Stock Exchange of Thailand (SET), September 2005.

listed company"[3] in year 2006. These principles are revised from corporate governance practices in year 2002 in order to be in line with OECD principles of corporate governance year 2004 and World Bank's recommendations from the corporate governance-reports on the observance of standard and codes (CG-ROSC). As a result, listed firms tend to provide more information especially, non-financial information such as ownership structure, investor rights, and board responsibility and process, to the stakeholders in order to comply with CG principles and improve investors confidence. From the reasons above, it is plausible that non-financial disclosures are more considered in SET100 firms. Therefore, the association between earnings attributes and disclosure in ownership structure and investor rights (*TDS_OWN*) and the association between earnings attributes and disclosure in board and management structure and process (*TDS_BOARD*) are dominate in the association between earnings attributes and disclosure in financial information (*TDS_FIN*) in SET100 firms.

In sum, the finding in Table 6 demonstrates the substitute relationship between the degree of corporate disclosure and firm's earnings attributes. This negative relationship is consistent with Chen et.al (2002) that investors demand additional disclosures to supplement the information contained in earnings when current earnings are less informativeness, or when future earnings are more uncertain. Another explanation for this negative relationship comes from the two lines of prior research which indicate both corporate disclosure and earnings attributes can lower cost of equity capital. Moreover, these two variables are within the discretion of

[3] Source of information: The Stock Exchange of Thailand (SET), 2006.

management (Verrecchia, 1990) while earnings attributes are a function of the firm's fundamental characteristics that managers cannot control in short run. Therefore, firms with poor earnings attributes have a tendency to issue more disclosure to reduce the information risk which arises from their poor earnings attributes (Francis et.al, 2004) then, lower their cost of capital.

Furthermore, the finding of this study indicates that accruals quality *(Accruals)* is the most outstanding earnings attributes which is negatively related to TDS adjusted scores. The plausible reason is that accruals quality *(Accruals)* is priced by markets and investors recognize it as the determinant of firms' cost of capital (Francis et.al, 2005). Moreover, the accruals component of earnings are the product of judgments, estimates, and allocations, thus it is subject to greater uncertainty than the cash flow component (Dechow, 1994). In addition, accruals quality *(Accruals)* is a more primitive construct for information risk concerning cash flows than are other earnings attributes because it captures variation in the mapping of earnings into operating cash flows which is a key element of the pay-off structure that investors are interested in (Francis et.al, 2004). Therefore, firms supplement their poor accruals quality *(Accruals)* by disclosing more information in order to maintain their cost of capital and strengthen investors' confidence.

From the results, it is interesting to note that only some accounting-based earnings attributes are significantly associated with TDS adjusted whereas the market-base earnings attributes are not significant in all models.

### 5.3.2 Accounting-based Earnings Attributes versus Market-based Earnings Attributes.

Similar to Francis et.al (2004), this study characterizes the earnings attributes into two categories; accounting-based earnings attributes and market-based earnings attributes. The accounting-based earnings attributes consist of persistence, accruals quality, predictability and smoothness while the market-based earnings attributes consist of value relevance, timeliness and conservatism. The implicit assumption of accounting-based earnings attributes is that the function of earnings is the effective allocation of cash flows to reporting periods via the accruals process. Thus, the measurements of accounting-based earnings attributes are typically based on accounting information such as cash or earnings only. On the other hand, the market-based earnings attributes derive from the implicit assumption that the function of earnings is to reflect economic income as represented by stock returns. Therefore, the measurements of market-based earnings attributes are based on the estimated relation between accounting earnings and market price or returns.

The evidence from Table 6 shows that only accounting-based earnings attributes which are accruals quality *(Accruals),* earnings predictability *(Predict),* and earnings smoothness *(Smooth)* are significantly associated with TDS adjusted scores in some model while market-based earnings attributes are not. However, Cheng et.al (2006) found the association between the difference in disclosure scores and abnormal returns and indicated that the market was aware of firm's disclosure level. Moreover, the market-based earnings attributes usually take the returns or price as a reference construct. Therefore, it is possible that market-based earnings attributes are correlated with the disclosure scores. This raises the question about why market-based earnings

attributes are not associated with the degree of disclosure measured by TDS adjusted scores (Table 6).

The regression results in Table 6 came from the models that regress TDS adjusted scores on the earnings attributes which include accounting-based earnings attributes and market-based earnings attributes simultaneously. Since the accounting-based earnings attributes and the market-based earnings attributes are based on different assumption, the influences of market-based earnings attributes on TDS adjusted scores may be subsumed by the ones of accounting-based earnings attributes. Therefore, this study distinguishes the simultaneous models into only accounting-based earnings attributes models and market-based earnings attributes models.

In order to examine whether market based earnings attributes related to the degree of disclosure of SET100 firms. This study provides the results of only accounting-based earnings attributes and the results of only market-based earnings attributes. Table 7 Panel A reports the regression results between TDS adjusted scores and accounting-based earnings attributes with control variables. Overall, the evidence in panel A is consistent with results from Table 6. The adjusted $R^2$ are 42.7%, 33.2%, 21.9%, and 29.2%, respectively. Hypotheses 1, 2, 3, and 4 are supported. It shows that *Accruals* and *Smooth* are negatively significantly related to *TDS_TOTAL*. Moreover, *Accruals* is negatively significantly associated with *TDS_OWN*. In *TDS_FIN* model, only *Predict* is negatively significant. Finally, *Accruals* and *Smooth* are negatively significantly related to *TDS_BOARD*. Panel B provides the regression results between TDS scores and market-based earnings attributes with control variables. The models provide the adjusted $R^2$ of 40.3%, 30.6%, 22.9%, and 26.1%, respectively. The

findings show that the market-based earnings attributes are not significantly related to TDS adjusted scores in all models, except in *TDS_FIN* model. *Relevance* is weakly negatively related to *TDS_FIN* at significant level of 0.10. This result weakly supports hypothesis 3. In sum, the accruals quality is the most outstanding earnings attributes which is negatively related to TDS adjusted scores and the adjusted $R^2$ of *TDS_FIN* is lowest in both models. The plausible explanations are as discussed in section 5.3.1. Lastly, the evidence from Table 7 suggests that the association between accounting-based earnings attributes and the transparency and disclosure scores are predominant relative to the association between market-based earnings attributes and the transparency and disclosure scores.

## 5.4 Additional Tests

### 5.4.1 Corporate disclosure and transparency control for industry

As mentioned above, TDS adjusted is calculated from firms' total scores of S&P:T&D scores and transform into percentage form. In addition, the descriptive statistics in Table 3 shows the variation in TDS scores of each industry. In order to control for the differences of industry, this study divides the firms into industry groups. Then, the average score of each industry is calculated. Firms having TDS score above industry's mean score will be used for testing the hypothesis. Therefore, TDS adjusted score of each firm which is used for examining the association between the degree of disclosure and transparency and earnings attributes; *TDS (IND*) equals the difference between TDS adjusted score and average value of industry.

The association between disclosure and transparency and earnings attributes examined by using *TDS (IND)* is provided in Table 8. The adjusted $R^2$ of all model

are quite low (4.4%, 15.5%, 8.9%, and 20.5%, respectively). For *TDS_TOTAL (IND),* only *Smooth* is weakly negatively significant, while other earnings attributes and control variables are not. In the second column, *Accruals* is negatively significantly related to *TDS_OWN (IND). Smooth* is weakly negatively significant while *Timeliness* is positively related. Control variables indicate that big firms and firms with higher leverage are disclosing more information in ownership structure and investor rights category. Moreover, *Accruals* and *Predict* are negatively significantly related *TDS_FIN (IND)* whereas *Smooth* is weakly negatively significant. The control variables are not significant in this model. The result from *TDS_BOARD (IND)* model indicates the negative significant relation between *Accruals* and *TDS_BOARD (IND)* and the positive significant relation between *Persist* and *TDS_BOARD (IND).*

Again, the findings suggest that transparency and disclosure scores are associated with some earnings attributes when controlled for industry. In addition, different categories of TDS adjusted scores are related to different earnings attributes. Unlike the regression results in Table 6, the *Accruals* in this model are not negatively significantly associated with *TDS_TOTAL (IND)* but negatively significantly associated with *TDS_FIN (IND)* instead. This means the difference in *TDS_FIN* disclosure level is used by the firms when firms are compared to industry disclosure level. However, The overall results in this section are similar to previous section that *Accruals* is outstanding in explaining the variation in the degree of transparency and disclosure measured by S&P:T&D adjusted scores.

### 5.4.2 Repeated measures consideration

The data of this study are consisting of the degree of corporate disclosure and transparency of listed firms in SET100 index for years 2005 to 2008. In this setting, the repeated measures problem in dependent variables might be occurring due to the same sample in multiple time periods. In the econometrics view, these repeated measures create the autocorrelation problem which affects the independence of variables and causes the invalid hypothesis testing.

In order to mitigate autocorrelation problems which arises from the repeated measure method, this study uses the change value in TDS adjusted scores, earnings attributes, and control variables, to examine the relation between the degree of disclosure and earnings attributes. The changes model is as follow;

$$\begin{aligned} TDS(Chg)_i = \; & \beta_0 + \beta_1 ChgAccruals_i + \beta_2 ChgPersist_i + \beta_3 ChgPredict_i \\ & + \beta_4 ChgSmooth_i + \beta_5 ChgRelevance_i + \beta_6 ChgConservatism_i \\ & + \beta_7 ChgTimeliness_i + \beta_8 ChgSize_i + \beta_9 ChgGrowth_i \\ & + \beta_{10} ChgLeverage_i + \varepsilon_i \end{aligned}$$

The change in TDS adjusted scores, change in earnings attributes, and change in control variables are calculated by using the data in year 2008 minus the data in year 2005. The evidence of changes model is shown in Table 9. The change in earnings persistence is negatively associated with change in TDS adjusted scores in this model. Results in the first column shows that change in total TDS adjusted scores increase when firms' accruals quality and earnings persistence are getting worse. The plausible explanation is that accruals quality and earnings persistence have a direct link to information risk (Francis et.al, 2004). Poor accruals quality indicates less mapping of earnings into operation cash flows while less earnings persistence is

associated with less sustainable earnings. Therefore, firms' disclosure is better when their accruals quality and earnings persistence are worse in order to reduce the uncertainty and enhance the investors' confidence

The result in Table 9, column 2 is similar to Table 6 showing that firms' disclosure in ownership structure and investor rights (*TDS_OWN*) is better when firms' accruals quality is worse. The result in Table 9, column 3 shows the negative association between changes in financial information disclosure (*TDS_FIN*) and change in earnings persistence and change in earnings predictability. Based on the result, change in firms' financial information disclosure increases when firms' earnings persistence and earnings predictability are worse. The last column shows that disclosure in board and management structure and process (*TDS_BOARD*) increases when accruals quality and earnings persistence are worse. Overall, the negative association between changes in TDS adjusted scores and change in earnings attributes confirms the substitute relationship. The results from the changes model which are generally similar to the regression results in Table 6 suggest that there are no autocorrelation problems in this sample set. Therefore, the parameters estimation shown in Table 6 of this study is unbiased.

# CHAPTER VI

## CONCLUSIONS

This study examines whether the degree of corporate disclosure and transparency is negatively associated with earnings attributes of listed Thai firms. The S&P transparency and disclosure scores (S&P:T&D) are used to measure the degree of corporate disclosure and transparency. Firms' earnings attributes focus on both accounting-based earnings attributes and market-based earnings attributes.

The two research streams provide the underlying rationale for the hypotheses in this study. The first identifies the relation between degree of disclosure and transparency and firm's cost of capital, while the second links earnings attributes to firm's cost of capital. Moreover, Verrecchia (1990) demonstrates that managers voluntarily expand disclosure to correct undervaluation by the capital market. This study argues that managers have incentive to disclose more information when firms' earnings attributes are poor in order to reduce the information asymmetry, reduce the cost of equity, and increase firms' value. Thus, this study hypothesize that the earnings attributes are negatively associated with corporate disclosure and transparency.

In addition, this paper also disaggregates the degree of corporate disclosure and transparency into three broad categories adapted from the S&P:T&D classification: Ownership structure and investor rights, Financial transparency and information disclosure, and Board and management structure and process and

examines the association between earnings attributes and each above mentioned categories.

The empirical results show that, on average, the degree of transparency and disclosures of SET100 firms, especially financial transparency and information disclosure *(TDS_FIN)* are slightly different. This suggests that SET100 firms have low dispersion. The results are consistent with the hypotheses. The degree of disclosure and transparency measured by S&P:T&D adjusted scores are negatively associated with some earnings attributes of SET100 firms. Total transparency and disclosure scores are negatively associated with accruals quality and earnings smoothness. Moreover, the results indicate that different categories of transparency and disclosure associated with different earnings attributes. The accruals quality *(Accruals)* is the most outstanding earnings attributes which negatively related to TDS adjusted scores. In addition, accounting-based earnings attributes are superior to market-based earnings attributes in explaining the variation in TDS adjusted scores.

Overall, the results support the substitute relationship that there the TDS adjusted score and earnings attributes are negatively associated. These negative relationships indicate that firms with poor earnings attributes issue more expansive disclosure. The finding of this paper is consistent with Chen et.al (2002) that the disclosure is more useful for investors in assessing firm value when current earnings are less informativeness, or when future earnings are more uncertain. In these settings, investors are likely to demand additional disclosures to supplement the information contained in earnings. Therefore, poor earnings quality firms might increase the disclosure in their report to reduce the information asymmetry and conceal the poor

earnings quality. In addition, the findings also confirm Shaw (2003) and Lang and Lundholm (1993)'s studies which stated that firms with low earnings quality have higher quality of disclosure.

The results are useful in various ways such as it can be a benchmark for future comparative studies and will provide incentives for all firms to improve their disclosure and transparency practices. Moreover, the association of earnings attributes and the degree of disclosure and transparency will help investors to understand the nature of firms and make an appropriate investment decision. Finally, the evidence has implications for regulators to set minimum disclosure requirements for firms in order to improve the quality of disclosures and transparency in Thailand.

This study examines only the association between corporate disclosure and transparency and earnings attributes of listed Thai firms. The consequences of this negative association such as information asymmetry, cost of capital or firm value are not examined. Future research might consider this issue.

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# APPENDICES

# Appendix A

## S&P's Transparency and Disclosure Scorings Methodology

S&P:T&D scorings are developed from analysis of the latest available annual reports, and assess the level of transparency and disclosure of companies in emerging markets (Asia, Latin America, Central and Eastern Europe, and Africa) as well as developed markets (Europe, developed Asia, and the U.S.).

S&P:T&D is evaluated by searching company annual reports (both English and local language) for the 98 possible attributes broadly divided into the following three broad categories:

- Ownership structure and investor rights (28 attributes)
- Financial transparency and information disclosure (35 attributes)
- Board and management structure and process (35 attributes)

The S&P:T&D scorings will eventually cover about 1,500 companies from the S&P Global 1200 Index and an additional 300 leading companies in the S&P/IFCI emerging markets index. The S&P Global 1200 represents leading global companies and includes the S&P 500, 150 companies in Japan, and 350 companies in Europe. These 1,500 companies cover more than 40 markets and represent about 75% of the world's tradable market capitalization.



## Categories in S&P:T&D Scoring System

*Total Transparency and Disclosure*

*Three Categories of Transparency and Disclosure*

1. Transparency and disclosure in ownership structure and investors rights.
2. Financial transparency and information disclosure.

**Appendix A** *(Continued)*

3. Transparency and disclosure in board and management structure and process.

*Twelve Subcategories of Transparency and Disclosure*

1. Transparency of ownership
2. Concentration of ownership
3. Voting and shareholder meeting procedures
4. Business focus
5. Accounting policy review
6. Accounting policy detail
7. Related party structure and transactions
8. Information on auditors
9. Board structure and composition
10. Role of the board
11. Director training and compensation
12. Compensation & evaluation of executive

# Appendix B

**Criteria in S&P:T&D Scoring System (98 questions)**

**Ownership Structure and Investor Rights**

*Transparency of ownership*

1. Provide a description of share classes?
2. Provide a review of shareholders by type?
3. Provide the number of issued and authorized ordinary shares?
4. Provide the number of authorized but non-issued ordinary shares?
5. Provide the par value of issued and authorized ordinary shares?
6. Provide the par value of authorized but non-issued ordinary shares?
7. Provide the number of issued and authorized of preferred, nonvoting, and other classes?
8. Provide the number of authorized but non-issued shares of preferred, nonvoting, and other classes?
9. Provide the par value of issued and authorized of preferred, non-voting, and other classes?
10. Provide the par value of authorized but non-issued shares of preferred, non-voting, and other classes?
11. Does the company disclose the voting rights for each class of shares?

*Concentration of ownership*

12. Top 1 shareholder disclosed?
13. Top 3 shareholders disclosed?
14. Top 5 shareholders disclosed?
15. Top 10 shareholders disclosed?

**Appendix B** *(Continued)*

16. Shareholders owning more than 10 percent are disclosed?
17. Shareholders owning more than 5 percent are disclosed?
18. Shareholders owning more than 3 percent are disclosed?
19. Does the company disclose percentage of cross-ownership?

*Voting and shareholder meeting procedures*

20. Is there a calendar of important shareholder dates?
21. Review of shareholder meetings (could be minutes)?
22. Describe procedure for proposals at shareholder meetings?
23. How shareholders convene an extraordinary general meeting?
24. How shareholders nominate directors to board?
25. Describe the process of putting inquiry to board?
26. Does the annual report refer to or publish Corporate Governance Charter?
27. Does the annual report refer to or publish Code of Best Practice?
28. Are the Articles of Association or Charter Articles of Incorporation published?

**Financial Transparency and Information Disclosure**

*Business focus*

29. Is there a discussion of corporate strategy?
30. Report details of the kind of business it is in?
31. Does the company give an overview of trends in its industry?
32. Report details of the products or services produced/provided?
33. Provide a segment analysis, broken down by business line?
34. Does the company disclose its market share for any or all of its businesses?

**Appendix B** *(Continued)*

35. Does the company report basic earnings forecast of any kind?
36. Does the company report basic earnings forecast of any kind in detail?
37. Disclose output in physical terms?
38. Does the company give an output forecast of any kind?
39. Does the company give characteristics of assets employed?
40. Does the company provide efficiency indicators (ROA, ROE, etc.)?
41. Does the company provide any industry-specific ratios?
42. Does the company disclose its plans for investment in the coming years?
43. Does the company disclose details of its investment plans in the coming years?

*Accounting policy review*

44. Provide financial information on a quarterly basis?
45. Does the company discuss its accounting policy?
46. Does the company disclose accounting standards it uses for its accounts?
47. Does the company provide accounts according to the local accounting standards?
48. Does the company provide accounts in alternate internationally recognized accounting method?
49. Does the company provide each of the balance sheets by internationally recognized methods?
50. Does the company provide each of the income statement by internationally recognized methods?

**Appendix B** *(Continued)*

51. Does the company provide each of the cash flow statement by internationally recognized methods?
52. Does the company provide a reconciliation of its domestic accounts to internationally recognized methods?

*Accounting policy details*

53. Does the company disclose methods of asset valuation?
54. Does the company disclose information on method of fixed assets depreciation?
55. Does the company produce consolidated financial statements?

*Related party structure and transactions*

56. Provide a list of affiliates in which it holds a minority stake?
57. Does the company disclose the ownership structure of affiliates?
58. Is there a list/register of related party transactions?
59. Is there a list/register of group transactions?

*Information on auditors*

60. Does the company disclose the name of its auditing firm?
61. Does the company reproduce the auditors' report?
62. Disclose how much it pays in audit fees to the auditor?
63. Disclose any non-audit fees paid to auditor?

**Board Structure and Process**

*Board structure and composition*

64. Is there a chairman listed?
65. Detail about the chairman (other than name/title)?

**Appendix B** *(Continued)*

66. Is there a list of board members (names)?

67. Are there details about directors (other than name/title)?

68. Details about current employment/position of directors provided?

69. Are details about previous employment/positions provided?

70. Disclose when each of the directors joined the board?

71. Classifies directors as an executive or an outside director?

*Role of the Board*

72. Details about role of the board of directors at the company?

73. Is there disclosed a list of matters reserved for the board?

74. Is there a list of board committees?

75. Review last board meeting (could be minutes)?

76. Is there an audit committee?

77. Disclosure of names on audit committee?

78. Is there a remuneration/compensation committee?

79. Names on remuneration/compensation committee)?

80. Is there a nomination committee?

81. Disclosure of names on nomination committee?

82. Other internal audit- functions besides audit committee?

83. Is there a strategy/investment/finance committee?

*Director training and compensation*

84. Disclose whether they provide director training?

85. Disclose the number of shares in the company held by directors?

86. Discuss decision-making process of directors' pay?

**Appendix B** *(Continued)*

87. Are specifics of directors' salaries disclosed (numbers)?

88. Form of directors' salaries disclosed (cash, shares, etc.)?

89. Specifics disclosed on performance-related pay for directors?

*Executive compensation and evaluation*

90. List of the senior managers (not on the board of directors)?

91. Backgrounds of senior managers disclosed?

92. Number of shares held by the senior managers disclosed?

93. Disclose the number of shares held in other affiliated companies by managers?

94. Discuss the decision-making of managers' (not board) pay?

95. Numbers of managers' (not on board) salaries disclosed?

96. Form of managers' (not on board) salaries disclosed?

97. Specifics disclosed on performance-related pay for managers?

98. Details of the CEO's contract disclosed?

## Appendix C

## Summary of Variables Definition and Measurement

| Variables | Definition | Measurement |
|---|---|---|
| *TDS_TOTAL* | Total transparency and disclosure scores | Sum of S&P:T&D information items disclosed in 3 categories excluding the scores that equal 1 for all firms. The three categories including information of ownership structure and investor rights, financial information, and board and management process. |
| *TDS_OWN* | S&P transparency and disclosure scores in ownership structure and investor rights | Sum of S&P:T&D information items disclosed in ownership structure and investor rights category excluding the scores that equal 1 for all firms. |
| *TDS_FIN* | S&P transparency and disclosure scores in financial and information disclosure | Sum of S&P:T&D information items disclosed in financial and information disclosure category excluding the scores that equal 1 for all firms. |
| *TDS_BOARD* | S&P transparency and disclosure scores in board and management structure and process | Sum of S&P:T&D information items disclosed in board and management structure and process category excluding the scores that equal 1 for all firms. |
| *Accruals* | Accruals quality | The negative value of the standard deviation of firm i's estimated residuals from modified Dechow and Dichev (2002) model. |
| *Persist* | Earnings persistent | The slope coefficient from a regression of current earnings on lagged earnings. |
| *Predict* | Earnings predictability | The negative value of the standard deviation of the error from a regression of current earnings on lagged earnings. |
| *Smooth* | Earnings smoothness | The ratio of the standard deviation of earnings to the standard deviation of cash flow. |
| *Relevance* | Value relevance | The explained variability of a regression of annual returns on the level and change in earnings per share. |
| *Conservatism* | Conservatism of firm | The ratio of the coefficient on bad news to the coefficient on good news from BASU (1997) model. |

**Appendix C** *(Continued)*

| Variables | Definition | Measurement |
|---|---|---|
| *Timeliness* | Timeliness of firm | The explained variability from BASU (1997) model. |
| *Size* | Size of firm | The natural log of the firm's market value of equity as of the end of the firm's fiscal year. $Size = \ln(MVE)$. |
| *Growth* | Firms' growth | Market to book ratio. |
| *Leverage* | Firms' leverage | The total liabilities to total assets ratio. |

# TABLES

**Table 1**
*Sample Description*

**Panel A: Sample selection of SET 100 firms from 2005-2008**

| | *N* | *%* |
|---|---|---|
| Number of firm years in the SET100 (2005-2008) | 400 | 100.00 |
| Data are not available (including incomplete data) | (130) | (32.50) |
| Final sample | 270 | 67.50 |

**Panel B: Sample firm years by Industry**

| *Industry* | *N* | *%* |
|---|---|---|
| Agro & Food Industry | 15 | 5.56 |
| Consumer Products | 1 | 0.37 |
| Financials | 57 | 21.11 |
| Industrials | 12 | 4.44 |
| Property & Construction | 84 | 31.11 |
| Resources | 22 | 8.15 |
| Services | 43 | 15.93 |
| Technology | 36 | 13.33 |
| Total | 270 | 100.00 |

**Table 2**

*Descriptive statistics for transparency and disclosure score*

| | Full sample | | 2008 | | 2007 | | 2006 | | 2005 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | S.D. | Mean | S.D. | Mean | S.D. | Mean | S.D. | Mean | S.D. |
| TDS_TOTAL | 43.032 | 7.602 | 43.548 | 7.878 | 42.830 | 7.714 | 44.014 | 7.339 | 41.739 | 7.454 |
| TDS_OWN | 11.903 | 3.195 | 12.131 | 3.270 | 11.951 | 3.127 | 12.148 | 3.248 | 11.379 | 3.152 |
| TDS_FIN | 9.975 | 2.442 | 9.814 | 2.650 | 9.881 | 2.585 | 10.233 | 2.148 | 9.971 | 2.391 |
| TDS_BOARD | 21.154 | 4.581 | 21.604 | 4.771 | 20.998 | 4.802 | 21.633 | 4.320 | 20.389 | 4.402 |
| No. of obs. | 255 | | 62 | | 66 | | 64 | | 63 | |

- *TDS_TOTAL* is total S&P:T&D scores.
- *TDS_OWN* is S&P:T&D scores in ownership structure and investor rights category.
- *TDS_FIN* is S&P:T&D scores in financial and information disclosure category.
- *TDS_BOARD* is S&P:T&D scores in board and management structure and process category.

**Table 3**

*Average disclosure scores with type of industry and disclosure categories*

| Industry | Agro & Food | Consumer Products | Financials | Industrials | Property & Construction | Resources | Services | Technology |
|---|---|---|---|---|---|---|---|---|
| TDS_TOTAL | 37.183 | 46.479 | 51.549 | 36.854 | 39.668 | 45.582 | 41.435 | 43.363 |
| | (8.744) | - | (5.804) | (9.261) | (5.720) | (3.625) | (5.768) | (5.664) |
| TDS_OWN | 11.925 | 11.268 | 14.085 | 10.329 | 11.410 | 12.099 | 11.235 | 11.096 |
| | (4.962) | - | (3.244) | (4.427) | (2.393) | (2.446) | (3.050) | (2.653) |
| TDS_FIN | 7.136 | 12.676 | 12.028 | 9.272 | 9.894 | 10.307 | 8.418 | 10.329 |
| | (2.348) | - | (1.484) | (3.203) | (2.141) | (1.813) | (1.640) | (1.521) |
| TDS_BOARD | 18.122 | 22.535 | 25.437 | 17.253 | 18.363 | 23.175 | 21.782 | 21.937 |
| | (3.361) | - | (2.837) | (4.539) | (3.935) | (2.971) | (4.479) | (3.227) |
| No. of firms | 15 | 1 | 57 | 12 | 84 | 22 | 43 | 36 |

**Note:** Standard deviation of TDS scores is presents in a parenthesis.

- *TDS_TOTAL* is total S&P:T&D scores.
- *TDS_OWN* is S&P:T&D scores in ownership structure and investor rights
- *TDS_FIN* is S&P:T&D scores in financial and information disclosure.
- *TDS_BOARD* is S&P:T&D scores in board and management structure and process.

**Table 4**

*Descriptive statistics of earnings attributes and control variables*

| Variables | Full sample | | Year 2008 | | Year 2007 | | Year 2006 | | Year 2005 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | Median | Mean | Median | Mean | Median | Mean | Median | Mean | Median |
| **Earnings Attributes:** | | | | | | | | | | |
| *Accruals* | -0.115 | -0.082 | -0.102 | -0.068 | -0.115 | -0.086 | -0.112 | -0.087 | -0.129 | -0.085 |
| *Persist* | 0.379 | 0.448 | 0.400 | 0.474 | 0.395 | 0.461 | 0.366 | 0.445 | 0.353 | 0.380 |
| *Predict* | -0.063 | -0.056 | -0.056 | -0.047 | -0.064 | -0.051 | -0.058 | -0.054 | -0.075 | -0.065 |
| *Smooth* | 1.156 | 0.910 | 1.183 | 0.927 | 1.274 | 0.941 | 1.064 | 0.847 | 1.100 | 0.888 |
| *Relevance* | 0.125 | 0.060 | 0.144 | 0.064 | 0.104 | 0.064 | 0.119 | 0.065 | 0.134 | 0.039 |
| *Conservatism* | 0.920 | 0.058 | 2.063 | 0.031 | 0.229 | 0.030 | 0.411 | 0.075 | 1.036 | 0.075 |
| *Timeliness* | 0.093 | 0.007 | 0.070 | 0.024 | 0.129 | 0.018 | 0.104 | 0.017 | 0.067 | -0.009 |
| **Control Variables:** | | | | | | | | | | |
| *Size* | 10.976 | 9.795 | 10.492 | 9.312 | 11.151 | 9.891 | 11.266 | 10.038 | 10.974 | 9.712 |
| *Growth* | 1.632 | 1.196 | 0.966 | 0.729 | 1.943 | 1.580 | 1.854 | 1.423 | 1.738 | 1.214 |
| *Leverage* | 0.539 | 0.535 | 0.532 | 0.535 | 0.522 | 0.534 | 0.565 | 0.549 | 0.536 | 0.525 |

- *Accruals* is the negative value of the standard deviation of firm i's estimated residuals from modified Dechow and Dichev (2002) model.
- *Persist* is the slope coefficient from a regression of current earnings on lagged earnings.
- *Predict* is the negative value of the standard deviation of the error from a regression of current earnings on lagged earnings.
- *Smooth* is the ratio of the standard deviation of earnings to the standard deviation of cash flow.
- *Relevance* is the explained variability of a regression of annual returns on the level and change in earnings per share.
- *Conservatism* is the ratio of the coefficient on bad news to the coefficient on good news from BASU (1997) model.
- *Timeliness* is the explained variability from BASU (1997) model.
- *Size* is the natural log of the firm's market value of equity as of the end of the firm's fiscal year.
- *Growth* is equal to market to book ratio.
- *Leverage* is equal to the total liabilities to total assets ratio

**Table 5**

*Correlation of Transparency and disclosure scores, Earnings attributes and Control variables*

| | TDS_ TOTAL | TDS_ OWN | TDS_ FIN | TDS_ BOARD | Accruals | Persist | Predict | Smooth | Rele-vance | Conser-vatism | Timeli-ness | Size | Growth | Leverage |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TDS_TOTAL** | | 0.644** | 0.494** | 0.785** | -0.162* | -0.048 | 0.048 | -0.172** | -0.067 | 0.028 | 0.039 | 0.556** | -0.026 | 0.176** |
| **TDS_OWN** | | | 0.155* | 0.198** | -0.184** | 0.011 | 0.050 | -0.055 | 0.013 | 0.057 | 0.011 | 0.396** | 0.290 | 0.236 |
| **TDS_FIN** | | | | 0.076 | 0.019 | -0.078 | -0.119 | -0.045 | -0.098 | 0.061 | -0.072 | 0.438** | -0.184** | -0.029 |
| **TDS_BOARD** | | | | | -0.129* | -0.035 | 0.104 | -0.196** | 0.054 | -0.031 | 0.092 | 0.401** | -0.140* | 0.118 |
| **Accruals** | | | | | | -0.109 | 0.671** | -0.199** | -0.009 | -0.099 | 0.013 | 0.196** | -0.147* | -0.019 |
| **Persist** | | | | | | | 0.062 | -0.164** | 0.006 | 0.007 | -0.035 | 0.016 | 0.103 | 0.076 |
| **Predict** | | | | | | | | -0.115* | 0.076 | 0.113* | -0.031 | 0.044 | 0.168** | 0.164** |
| **Smooth** | | | | | | | | | -0.224** | 0.004 | 0.070 | 0.065 | -0.104 | 0.065 |
| **Relevance** | | | | | | | | | | 0.059 | 0.536** | 0.023 | -0.111 | -0.027 |
| **Conservatism** | | | | | | | | | | | -0.035 | 0.050 | -0.074 | -0.047 |
| **Timeliness** | | | | | | | | | | | | 0.048 | 0.021 | 0.051 |
| **Size** | | | | | | | | | | | | | 0.109 | 0.202** |
| **Growth** | | | | | | | | | | | | | | -0.294** |
| **Leverage** | | | | | | | | | | | | | | |

**Note:** *, and ** represent significance at level 5% and 1%, respectively.

**Table 5** *(Continued)*

- *TDS_TOTAL* is total S&P:T&D scores.
- *TDS_OWN* is S&P:T&D scores in ownership structure and investor rights
- *TDS_FIN* is S&P:T&D scores in financial and information disclosure.
- *TDS_BOARD* is S&P:T&D scores in board and management structure and process.
- *Accruals* is the negative value of the standard deviation of firm i's estimated residuals from modified Dechow and Dichev (2002) model.
- *Persist* is the slope coefficient from a regression of current earnings on lagged earnings.
- *Predict* is the negative value of the standard deviation of the error from a regression of current earnings on lagged earnings.
- *Smooth* is the ratio of the standard deviation of earnings to the standard deviation of cash flow.
- *Relevance* is the explained variability of a regression of annual returns on the level and change in earnings per share.
- *Conservatism* is the ratio of the coefficient on bad news to the coefficient on good news from BASU (1997) model.
- *Timeliness* is the explained variability from BASU (1997) model.
- *Size* is the natural log of the firm's market value of equity as of the end of the firm's fiscal year.
- *Growth* is equal to market to book ratio.
- *Leverage* is equal to the total liabilities to total assets ratio.

**Table 6**

*Regression of the transparency and disclosure scores on earnings attributes control year*

| | TDS_TOTAL | | | TDS_OWN | | | TDS_FIN | | | TDS_BOARD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Parameter estimates** | **p-value** | | **Parameter estimates** | **p-value** | | **Parameter estimates** | **p-value** | | **Parameter estimates** | **p-value** | |
| Intercept | 26.205 | 0.000 | *** | 4.629 | 0.000 | *** | 6.437 | 0.000 | *** | 15.140 | 0.000 | *** |
| Accruals | -11.922 | 0.011 | ** | -6.059 | 0.004 | *** | 0.443 | 0.800 | | -6.306 | 0.046 | ** |
| Persist | -1.087 | 0.330 | | -0.076 | 0.880 | | -0.478 | 0.253 | | -0.534 | 0.478 | |
| Predict | 4.074 | 0.695 | | 1.250 | 0.789 | | -6.831 | 0.079 | * | 9.655 | 0.168 | |
| Smooth | -1.082 | 0.005 | *** | -0.184 | 0.280 | | -0.087 | 0.541 | | -0.812 | 0.002 | *** |
| Relevance | -1.357 | 0.337 | | 0.123 | 0.846 | | -0.760 | 0.152 | | -0.721 | 0.449 | |
| Conservatism | 0.014 | 0.712 | | 0.013 | 0.448 | | 0.014 | 0.313 | | -0.013 | 0.604 | |
| Timeliness | 0.695 | 0.553 | | 0.121 | 0.818 | | -0.523 | 0.233 | | 1.098 | 0.165 | |
| Size | 1.432 | 0.000 | *** | 0.428 | 0.000 | *** | 0.381 | 0.000 | *** | 0.623 | 0.000 | *** |
| Growth | 0.079 | 0.787 | | 0.733 | 0.000 | *** | -0.317 | 0.004 | *** | -0.337 | 0.089 | * |
| Leverage | 5.797 | 0.004 | *** | 3.661 | 0.000 | *** | -0.454 | 0.540 | | 2.590 | 0.053 | * |
| d05 | -2.968 | 0.006 | *** | -1.683 | 0.001 | *** | 0.082 | 0.838 | | -1.367 | 0.059 | * |
| d06 | -1.215 | 0.255 | | -1.148 | 0.017 | ** | 0.412 | 0.302 | | -0.479 | 0.505 | |
| d07 | -1.780 | 0.095 | * | -1.172 | 0.015 | ** | 0.109 | 0.784 | | -0.717 | 0.317 | |
| Adj. R-square | 0.434 | | | 0.353 | | | 0.231 | | | 0.293 | | |

**Note:** ***, **, and * represent significance at the 1%, 5% and 10%, respectively (one-tailed test).

**Table 6** *(Continued)*

The regression being estimated is

$$TDS_{i,t} = \beta_0 + \beta_1 Accruals_{i,t} + \beta_2 Persist_{i,t} + \beta_3 Predict_{i,t} + \beta_4 Smooth_{i,t} + \beta_5 Relevance_{i,t} + \beta_6 Conservatism_{i,t} + \beta_7 Timeliness_{i,t} + \beta_8 Size_{i,t} + \beta_9 Growth_{i,t} + \beta_{10} Leverage_{i,t} + d_{05} + d_{06} + d_{07} + \varepsilon_{i,t}$$

*TDS i,t* is dividing into four groups *TDS_TOTAL, TDS_OWN, TDS_FIN,* and *TDS_BOARD*

Where;

**Transparency and Disclosure Variables**:

- *TDS_TOTAL* is total S&P:T&D scores.
- *TDS_OWN* is S&P:T&D scores in ownership structure and investor rights.
- *TDS_FIN* is S&P:T&D scores in financial and information disclosure.
- *TDS_BOARD* is S&P:T&D scores in board and management structure and process.

**Earnings Attributes Variables:**

- *Accruals* is the negative value of the standard deviation of firm i's estimated residuals from modified Dechow and Dichev (2002) model.
- *Persist* is the slope coefficient from a regression of current earnings on lagged earnings.
- *Predict* is the negative value of the standard deviation of the error from a regression of current earnings on lagged earnings.
- *Smooth* is the ratio of the standard deviation of earnings to the standard deviation of cash flow.
- *Relevance* is the explained variability of a regression of annual returns on the level and change in earnings per share.
- *Conservatism* is the ratio of the coefficient on bad news to the coefficient on good news from BASU (1997) model.
- *Timeliness* is the explained variability from BASU (1997) model.

**Control Variables:**

- *Size* is the natural log of the firm's market value of equity as of the end of the firm's fiscal year.
- *Growth* is equal to market to book ratio.
- *Leverage* is equal to the total liabilities to total assets ratio.

**Table 6** *(Continued)*

- $d_{05}$ is the indicator for year 2005
- $d_{06}$ is the indicator for year 2006
- $d_{07}$ is the indicator for year 2007



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**Table 7**

*Regression of the transparency and disclosure scores on accounting-based and market-based earnings attributes*

| | TDS_TOTAL | | | TDS_OWN | | | TDS_FIN | | | TDS_BOARD | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Parameter estimates** | **p-value** | | **Parameter estimates** | **p-value** | | **Parameter estimates** | **p-value** | | **Parameter estimates** | **p-value** | |
| **Panel A: Accounting-based attributes:** | | | | | | | | | | | | |
| Intercept | 25.183 | 0.000 | *** | 4.193 | 0.000 | *** | 6.256 | 0.000 | *** | 14.735 | 0.000 | *** |
| Accruals | -12.489 | 0.008 | *** | -6.456 | 0.002 | *** | 0.241 | 0.890 | | -6.273 | 0.045 | ** |
| Persist | -0.859 | 0.441 | | 0.090 | 0.859 | | -0.486 | 0.245 | | -0.463 | 0.535 | |
| Predict | 8.144 | 0.425 | | 4.242 | 0.360 | | -7.315 | 0.057 | * | 11.217 | 0.102 | |
| Smooth | -0.942 | 0.011 | ** | -0.159 | 0.341 | | -0.024 | 0.865 | | -0.759 | 0.002 | *** |
| **Control variables:** | | | | | | | | | | | | |
| Size | 1.414 | 0.000 | *** | 0.417 | 0.000 | *** | 0.386 | 0.000 | *** | 0.612 | 0.000 | *** |
| Growth | -0.087 | 0.757 | | 0.597 | 0.000 | *** | -0.286 | 0.007 | *** | -0.398 | 0.035 | |
| Leverage | 5.499 | 0.006 | *** | 3.402 | 0.000 | *** | -0.498 | 0.501 | | 2.595 | 0.051 | ** |
| Adj. R-square | 0.427 | | | 0.332 | | | 0.219 | | | 0.292 | | |
| **Panel B: Market-based attributes:** | | | | | | | | | | | | |
| Intercept | 25.156 | 0.000 | *** | 4.945 | 0.000 | *** | 7.140 | 0.000 | *** | 13.071 | 0.000 | *** |
| Relevance | -0.832 | 0.547 | | 0.009 | 0.989 | | -0.956 | 0.059 | * | 0.116 | 0.901 | |
| Conservatism | 0.025 | 0.519 | | 0.020 | 0.248 | | 0.012 | 0.404 | | -0.007 | 0.783 | |
| Timeliness | 0.554 | 0.642 | | 0.083 | 0.878 | | -0.471 | 0.280 | | 0.942 | 0.239 | |
| **Control variables:** | | | | | | | | | | | | |
| Size | 1.356 | 0.000 | *** | 0.365 | 0.000 | *** | 0.364 | 0.000 | *** | 0.628 | 0.000 | *** |
| Growth | 0.062 | 0.821 | | 0.678 | 0.000 | *** | -0.348 | 0.001 | *** | -0.268 | 0.146 | |
| Leverage | 5.413 | 0.006 | *** | 3.383 | 0.000 | *** | -0.810 | 0.259 | | 2.840 | 0.032 | ** |
| Adj. R-square | 0.403 | | | 0.306 | | | 0.229 | | | 0.261 | | |

**Note:** ***, **, and * represent significance at the 1%, 5% and 10%, respectively (one-tailed test).

**Table 7** *(Continued)*

The regression being estimated are:

Accounting-based earnings attributes;

$$TDS_{i,t} = \beta_0 + \beta_1 Accruals_{i,t} + \beta_2 Persist_{i,t} + \beta_3 Predict_{i,t} + \beta_4 Smooth_{i,t} + \beta_5 Size_{i,t} + \beta_6 Growth_{i,t} + \beta_7 Leverage_{i,t} + \varepsilon_{i,t}$$

Market-based earnings attributes;

$$TDS_{i,t} = \beta_0 + \beta_1 Relevance_{i,t} + \beta_2 Conservatism_{i,t} + \beta_3 Timeliness_{i,t} + \beta_4 Size_{i,t} + \beta_5 Growth_{i,t} + \beta_6 Leverage_{i,t} + \varepsilon_{i,t}$$

*TDS i,t* is dividing into four groups *TDS_TOTAL*, *TDS_OWN*, *TDS_FIN*, and *TDS_BOARD*

Where;

**Transparency and Disclosure Variables**:

- *TDS_TOTAL* is total S&P:T&D scores.
- *TDS_OWN* is S&P:T&D scores in ownership structure and investor rights.
- *TDS_FIN* is S&P:T&D scores in financial and information disclosure.
- *TDS_BOARD* is S&P:T&D scores in board and management structure and process.

**Earnings Attributes Variables:**

- *Accruals* is the negative value of the standard deviation of firm i's estimated residuals from modified Dechow and Dichev (2002) model.
- *Persist* is the slope coefficient from a regression of current earnings on lagged earnings.
- *Predict* is the negative value of the standard deviation of the error from a regression of current earnings on lagged earnings.
- *Smooth* is the ratio of the standard deviation of earnings to the standard deviation of cash flow.
- *Relevance* is the explained variability of a regression of annual returns on the level and change in earnings per share.
- *Conservatism* is the ratio of the coefficient on bad news to the coefficient on good news from BASU (1997) model.
- *Timeliness* is the explained variability from BASU (1997) model.

**Table 7** *(Continued)*

**Control Variables:**

- *Size* is the natural log of the firm's market value of equity as of the end of the firm's fiscal year.
- *Growth* is equal to market to book ratio.
- *Leverage* is equal to the total liabilities to total assets ratio.



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**Table 8**

*Regression of the transparency and disclosure scores (Above Mean of Industry) on earnings attributes*

| | TDS_TOTAL(IND) | | | TDS_OWN(IND) | | | TDS_FIN(IND) | | | TDS_BOARD(IND) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Parameter estimates** | **p-value** | | **Parameter estimates** | **p-value** | | **Parameter estimates** | **p-value** | | **Parameter estimates** | **p-value** | |
| Intercept | 3.390 | 0.023 | ** | 1.543 | 0.027 | ** | 1.015 | 0.014 | ** | 3.083 | 0.000 | *** |
| **Earnings attributes variables:** | | | | | | | | | | | | |
| Accruals | -4.804 | 0.183 | | -4.496 | 0.020 | ** | -2.161 | 0.045 | ** | -5.512 | 0.000 | *** |
| Persist | -0.462 | 0.612 | | -0.408 | 0.364 | | 0.177 | 0.426 | | 0.695 | 0.053 | * |
| Predict | 2.150 | 0.800 | | 6.598 | 0.130 | | -8.678 | 0.000 | *** | 3.012 | 0.304 | |
| Smooth | -0.832 | 0.080 | * | -0.417 | 0.054 | * | -0.235 | 0.050 | * | -0.308 | 0.122 | |
| Relevance | 0.091 | 0.943 | | -0.023 | 0.968 | | -0.303 | 0.417 | | 0.070 | 0.875 | |
| Conservatism | -0.001 | 0.975 | | -0.012 | 0.279 | | 0.005 | 0.381 | | -0.005 | 0.546 | |
| Timeliness | 0.204 | 0.840 | | 0.988 | 0.033 | ** | 0.074 | 0.813 | | 0.259 | 0.487 | |
| **Control variables:** | | | | | | | | | | | | |
| Size | 0.075 | 0.539 | | -0.055 | 0.384 | | -0.029 | 0.320 | | 0.099 | 0.021 | ** |
| Growth | -0.041 | 0.840 | | 0.210 | 0.030 | ** | 0.000 | 0.997 | | -0.184 | 0.029 | ** |
| Leverage | 0.256 | 0.900 | | 2.103 | 0.021 | ** | 0.579 | 0.180 | | 0.235 | 0.735 | |
| Adj. R-square | 0.044 | | | 0.155 | | | 0.089 | | | 0.205 | | |
| N | 118 | | | 117 | | | 130 | | | 123 | | |

**Note:** ***, **, and * represent significance at the 1%, 5% and 10%, respectively (one-tailed test).

**Table 8** *(Continued)*

The regression being estimated is:

$$TDS(AIND)_{i,t} = \beta_0 + \beta_1 Accruals_{i,t} + \beta_2 Persist_{i,t} + \beta_3 Predict_{i,t} + \beta_4 Smooth_{i,t} + \beta_5 Relevance_{i,t} + \beta_6 Conservatism_{i,t} + \beta_7 Timeliness_{i,t} + \beta_8 Size_{i,t} + \beta_9 Growth_{i,t} + \beta_{10} Leverage_{i,t} + \varepsilon_{i,t}$$

*TDS(IND) i,t* is TDS scores which is exceed average value dividing into four groups *TDS_TOTAL(IND), TDS_OWN(IND), TDS_FIN(IND), and TDS_BOARD(IND)*

Where;

**Transparency and Disclosure Variables**:

- *TDS_TOTAL(IND)* is total S&P:T&D scores which is exceed average value of industry.
- *TDS_OWN (IND)* is S&P:T&D scores in ownership structure and investor rights which is exceed average value of industry.
- *TDS_FIN (IND)* is S&P:T&D scores in financial and information disclosure which is exceed average value of industry.
- *TDS_BOARD (IND)* is S&P:T&D scores in board and management structure and process which is exceed average value of industry.

**Earnings Attributes Variables:**

- *Accruals* is the negative value of the standard deviation of firm i's estimated residuals from modified Dechow and Dichev (2002) model.
- *Persist* is the slope coefficient from a regression of current earnings on lagged earnings.
- *Predict* is the negative value of the standard deviation of the error from a regression of current earnings on lagged earnings.
- *Smooth* is the ratio of the standard deviation of earnings to the standard deviation of cash flow.
- *Relevance* is the explained variability of a regression of annual returns on the level and change in earnings per share.
- *Conservatism* is the ratio of the coefficient on bad news to the coefficient on good news from BASU (1997) model.\
- *Timeliness* is the explained variability from BASU (1997) model.

**Table 8** *(Continued)*

**Control Variables:**

- *Size* is the natural log of the firm's market value of equity as of the end of the firm's fiscal year.
- *Growth* is equal to market to book ratio.
- *Leverage* is equal to the total liabilities to total assets ratio.



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**Table 9**

*Regression of change in transparency and disclosure scores on change in earnings attributes*

| | TDS_TOTAL (Chg) | | | TDS_OWN (Chg) | | | TDS_FIN (Chg) | | | TDS_BOARD (Chg) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Parameter estimates** | **p-value** | | **Parameter estimates** | **p-value** | | **Parameter estimates** | **p-value** | | **Parameter estimates** | **p-value** | |
| Intercept | 0.676 | 0.364 | | 0.153 | 0.493 | | 0.170 | 0.523 | | 0.353 | 0.460 | |
| **Earnings attributes variables:** | | | | | | | | | | | | |
| ChgAccruals | -24.028 | 0.007 | *** | -8.031 | 0.003 | *** | -1.422 | 0.645 | | -14.576 | 0.011 | ** |
| ChgPersist | -8.593 | 0.004 | *** | -0.301 | 0.729 | | -3.820 | 0.001 | *** | -4.472 | 0.019 | ** |
| ChgPredict | 6.395 | 0.672 | | 1.422 | 0.754 | | -9.767 | 0.075 | * | 14.740 | 0.133 | |
| ChgSmooth | 0.145 | 0.747 | | 0.175 | 0.201 | | -0.048 | 0.763 | | 0.019 | 0.948 | |
| ChgRelevance | -4.626 | 0.154 | | -0.819 | 0.399 | | -1.649 | 0.155 | | -2.158 | 0.299 | |
| ChgConservatism | 0.042 | 0.701 | | -0.006 | 0.862 | | 0.025 | 0.523 | | 0.023 | 0.746 | |
| ChgTimeliness | -0.719 | 0.727 | | 0.188 | 0.761 | | -1.006 | 0.175 | | 0.099 | 0.940 | |
| **Control variables:** | | | | | | | | | | | | |
| ChgSize | 4.086 | 0.000 | *** | 0.825 | 0.000 | *** | 1.283 | 0.000 | *** | 1.978 | 0.000 | *** |
| ChgGrowth | -0.762 | 0.153 | | 0.283 | 0.079 | * | -0.470 | 0.015 | ** | -0.575 | 0.094 | * |
| ChgLeverage | 9.594 | 0.025 | ** | 0.626 | 0.618 | | 2.646 | 0.080 | * | 6.322 | 0.021 | ** |
| Adj. R-square | 0.507 | | | 0.496 | | | 0.448 | | | 0.465 | | |
| N=62 | | | | | | | | | | | | |

**Note:** ***, **, and * represent significance at the 1%, 5% and 10%, respectively (one-tailed test).

**Table 9** *(Continued)*

The regression being estimated is:

$$TDS(Chg)_i = \beta_0 + \beta_1 ChgAccruals_i + \beta_2 ChgPersist_i + \beta_3 ChgPredict_i + \beta_4 ChgSmooth_i + \beta_5 ChgRelevance_i + \beta_6 ChgConservatism_i + \beta_7 ChgTimeliness_i + \beta_8 ChgSize_i + \beta_9 ChgGrowth_i + \beta_{10} ChgLeverage_i + \varepsilon_i$$

$TDS(Chg)_i$ is change in TDS scores (year 2008 and year 2005) dividing into four groups *TDS_TOTAL(Chg), TDS_OWN(Chg), TDS_FIN(Chg), and TDS_BOARD(Chg)*

Where;

**Transparency and Disclosure Variables**:

- *TDS_TOTAL(Chg)* is change in total S&P:T&D scores.
- *TDS_OWN (Chg)* is change in S&P:T&D scores in ownership structure and investor rights.
- *TDS_FIN (Chg)* is change in S&P:T&D scores in financial and information disclosure.
- *TDS_BOARD (Chg)* is change in S&P:T&D scores in board and management structure and process.

**Earnings Attributes Variables:**

- *ChgAccruals* is change in firm i's accruals quality which estimated from modified Dechow and Dichev (2002) model.
- *ChgPersist* is change in firm i's persistence.
- *ChgPredict* is change in firm i's predictability.
- *ChgSmooth* is t change in firm i's smoothness.
- *ChgRelevance* is change in firm i's relevance.
- *ChgConservatism* is change in firm i's conservatism.
- *ChgTimeliness* is change in firm i's timeliness.

**Table 9** *(Continued)*

**Control Variables:**

- *ChgSize* is change in firm i's size.
- *ChgGrowth* is change in firm i's growth.
- *ChgLeverage* is change in firm i's leverage.



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**Table 10**

*Summary results of hypothesis testing*

| Variables | Hypothesis 1 (TDS_TOTAL) | | | Hypothesis 2 (TDS_OWN) | | | Hypothesis 3 (TDS_FIN) | | | Hypothesis 4 (TDS_BOARD) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Test Sign** | **Results** | **Sig** | **Test Sign** | **Results** | **Sig** | **Test Sign** | **Results** | **Sig** | **Test Sign** | **Results** | **Sig** |
| *Accruals* | - | Support | ** | - | Support | *** | + | Not support | | - | Support | ** |
| *Persist* | - | Not support | | + | Not support | | - | Not support | | - | Not support | |
| *Predict* | + | Not support | | + | Not support | | - | Support | *** | + | Not support | |
| *Smooth* | - | Support | *** | - | Not support | | - | Not support | | - | Support | *** |
| *Relevance* | - | Not support | | + | Not support | | - | Not support | | - | Not support | |
| *Conservatism* | + | Not support | | + | Not support | | + | Not support | | - | Not support | |
| *Timeliness* | + | Not support | | + | Not support | | - | Not support | | + | Not support | |
| *Size* | + | Support | *** | + | Support | *** | + | Support | *** | + | Support | *** |
| *Growth* | - | Not support | | + | Support | *** | - | Support | *** | - | Support | ** |
| *Leverage* | + | Support | *** | + | Support | *** | - | Not support | | + | Support | * |

**Note:** ***, **, and * represent significance at the 1%, 5% and 10%, respectively (one-tailed test).

# BIOGRAPHY

Pattaraporn Pongsaporamat was born on August 22, 1979 in Bangkok. She received her bachelor's degree in business administration majoring in accounting from Chiangmai University, Thailand, in 2000. She received her master's degree in accounting from Chulalongkorn University in 2004.

She has worked at Kasikornbank Public Company Limited as the compliance officer in the Securities service department in 2004. After that, she worked as a lecturer at Uttaradit Rajabhat University for 1 year. Since 2006 until now, she is a lecturer at Naresuan University, Phitsanulok, Thailand.