Abstract

I conduct an analysis of the earning management through discretionary accruals in Stock Exchange of Thailand in relation to Surplus Free Cash Flow and External Monitoring (independent auditor and institutional investors). Using 840 company year observations between 2001 and 2005, the result shows that companies with high free cash flow together with low growth opportunities have used discretionary accrual significantly. External monitoring by high quality auditors and institutional investors are not significantly observed. However, I find that the interaction between surplus free cash flow and tenor of auditors is significant to support discretionary accrual. This means that auditors with long term relationship with firms tend to help managers manage discretionary accrual when it appears surplus free cash flow. Moreover, I found that interaction between surplus free cash flow and institutional investors are significantly decrease discretionary accrual in selected observations.

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Chapter 1
Introduction

Earning management is the classic method that managers use to convey the performance of the firms that they supervise or to send signal about the firm future opportunities. McKee (2005) claims that "Earning management is reasonable and legal management decision making and reporting intended to achieve stable and predictable financial results." This is different from illegal activities (fraud) to manipulate financial statements and report results that do not reflect economic reality. There are many researches suggest that earnings is a pervasive phenomenon. Both private firms and public firms have their own incentive to manage earnings.

Burgstahler and Dechev (1997) find that firms manage reported earnings to avoid earnings decreases and earnings losses. The evidence suggests that 8-12% of the firms with small pre-managed earnings decreases manage earnings to report increase in earnings. 30-44% of the firms with small negative pre-managed earnings increases manage earnings to report increase in earnings. Cash flow from operations and changes in working capital have been used to manage earnings in this study.

DeFond and Park (1997) find that, on the one hand, when current earnings are "poor" and expected future earnings are "good", managers borrow earnings from the future for use in the current period. On the other hand, when current earnings are "good" and expected future earnings are "poor" managers "save" current earnings for possible use in the future. This is called "smoothing income". However, they cannot exclude selection bias in explanation their findings.

Lakshmanan (2000) finds evidence of earnings management around the seasoned equity offerings in United States. His results indicate that earnings management may not be intended to mislead investors, but it may reflect the issures' rational response to market behavior at offering announcements.

Coppens and Peek (2005) study private firms in 8 European countries (Belgium, Denmark, Frnace, Germany, Italy, The Netherlands, Spain, and U.K.). They find that private firms without capital market stress have incentives to manage earnings. Private firms avoid reporting small losses. Private firms in some countries (Belgium and Italy) involve in earnings smoothing than public firms for tax incentives.

According to Thomas E McKee, There are 2 ways of managing earnings. First is the use of accounting choices. Firms may use alternative accounting choices such as depreciation methods. The second is the use of operating decisions such as sale promotion, discount. In this study, I concentrate in accounting decision by using discretionary accruals.

Managers usually manage earnings in the period of reporting. Some firms use earning management to convey what managements have done. If the firms have invested in new projects and succeed, managements will show the results in their report. However, if the projects or expenditure is failed to increase shareholders' wealth, managements have incentives to conceal the bad performance. Investors concern about what managements do especially during the time when firms have abundance of cash. I examine earning management through discretionary accruals to test whether there exists earning management in firms with exceed cash flow together with low growth opportunities using Surplus Free Cash Flow and external monitoring as independent variables. Specifically, free cash flow combine with low-growth opportunities have

been viewed as a cause of agency problem where managers make expenditures or invest in negative net present value (NPV) project that reduce shareholder wealth. For this purpose, managers use accounting manipulation to distort earning (ie. Increase profit to hide the effects of the non-wealth maximizing investments.) However, this manipulating behavior is restricted if there is an effective external monitoring by independent outside stakeholder. I detect whether high-quality auditors are more effective in limiting managers' ability to make opportunistic accounting choices than low-quality auditors. I also test whether financial institutions with substantial equity stakes in a company have the incentive, time and expertise to monitor the opportunistic actions and earnings management of corporate executives.

This paper tries to examine the surplus free cash flow (SFCF) agency problem in the context of managers' opportunistic accounting choices and shows the interaction between incentive effects and monitoring effects on managers' discretionary accruals (DAC).

The role of external monitor is the important issue in Thailand and other countries. Because investors and regulation agencies want to ensure that managements will run the firms to maximize shareholders' wealth with reasonable cost. Auditors are viewed as independent parties who audit firm's financial data and express an opinion whether the financial statement is fairly present firm performance. Institutional investors are also viewed as parties who use their efforts in monitoring managements. I raise this study to find out the role of external monitors in firms in Thailand. I scope down my study to firms with excess cash flow and low growth opportunities.

Research question:

How surplus free cash flows and external monitoring affect discretionary accrual?

Objective of study:

1. To investigate whether managers of low-growth companies with high free cash flows have incentives to boost reported earnings by choosing income-increasing discretionary accruals (DAC).
2. To examine whether external monitoring by high-quality auditors and institutional investors with substantial shareholdings are effective in deterring opportunistic earnings management.
3. To investigate whether and how the interaction effect of surplus free cash flow (SFCF) on discretionary accruals (DAC) is constrained or moderated by external monitoring by high-quality auditors and substantial institutional shareholders.

Scope of study:

This study consists of yearly listed company data in Stock Exchange of Thailand (SET) from 2001 to 2005. The data exclude bank, finance, and insurance sectors in which nature of financial data are significantly different from other sectors.

Contribution:

I suppose that this study gives the alternative model in detecting earnings management by using surplus free cash flows which are defined as companies with retained cash flow together with low growth opportunity. This study also shows how external monitors affect managers' choice in using discretionary accruals. I hope that the findings will be helpful for regulation agencies to set rules to monitor earnings management and use the external auditors as a hint to extend the scope of their examinations.

Limitations:

In this study, I exclude finance sector, banking sector and insurance sector, because of the nature of business that is quite different to other sectors in Stock Thai market.

This study does not survey the private company in Thailand. The reason is that the Federation of Accounting Professions allow private firm not to apply some accounting principal standards which include preparing statement of cash flow. It is quite difficult for researchers to prepare statement of cash flow by themselves for each sample. In some case, they can not find adequate information to make these statements.

Chapter 2
Literature Reviews

Quality of Earnings

The roles of accounting have effect to the correct valuation. According to McKee (2005) , there are 3 financial measures used to estimate stock value:-

1. Book value
2. Operating cash flow
3. Net income (earnings)

All these measures are based on standards for recording accounting transactions. As such accounting principles play a primary role in corporate valuation.

Valuation based on book value firm assets and liabilities. This type of valuation is primarily useful for firms that have no growth prospects or that expect to be liquidated. Earnings do not play a significant role.

Operating cash flow valuation model is based on estimating future cash flows and then discounting them to the present using an appropriate cost of capital. This would be the preferred model because it is supported by an extensive amount of economic theory, however, the cash flow model is not as practical as the net income model, which is based on current earnings.

The operating cash flow model and the net income model are very similar. They differ only in the timing and nature of the underlying flow they use. Because net income model is based on accrual accounting principles, it is more forward looking than the operating cash flow model. This net income model is used in examining earnings management.

The forward looking nature of accrual accounting can be illustrated by thinking about how accrual and cash basis accounting would differ in the following situation.

Dechow, Sloan and Sweeney (1995) classifies 5 competing models that are used to detect earnings management. All models are competing discretionary accruals:-

1. The Healy Model

This model developed by Healy (1985), compares mean total accruals (scaled by lagged total assets) across the earnings management partitioning variable. Healy predicts that systematic earnings management occurs in every period. The partitioning variable divides the sample into 3 groups, with earnings predicted to be managed upwards in one of the groups and downward in the other two groups. Inferences are made through pair-wise comparison of the mean total accruals for each of the groups where earnings are predicted to be managed downwards. This approach is equivalent to treating the set of observation for which earnings are predicted to be managed upwards ass the estimation period and the set of observations and the set of observations for which earnings are predicted to be managed downwards as the event period. The mean total accruals from the estimation period then represent the measure of nondiscretionary accruals.

2. The DeAngelo Model

This model developed by DeAngelo (1986), computes first differences in total accruals, and assumes that the first differences have an expected value of zero under the null hypothesis of no earnings management. This model uses last period’s total accruals (scaled by lagged total assets) as the measure of nondiscretionary accruals. Viewed as a special case of the Healy model, this model uses previous year observation as estimation period for nondiscretionary accruals.

Both models have similar in that they use total accruals expected nondiscretionary accruals. Both models will get the same result if nondiscretionary is constant and mean of discretionary is zero. However, empirical study found that nondiscretionary accruals are not constant and change in response to economic circumstances. Statistical use for both models depends on the nature of time series. If it follow white noise process (due to error term only), Healy model is appropriate and vice versa. Due to the fact that nondiscretionary accruals are not constant, and the effect of changes in firms' economic circumstance exists, the following models are developed.

3. The Jones Model

This model developed by Jones (1991), relaxes the assumption that nondiscretionary accrual is constant. The model tries to control for the effect of changes in firm's economic circumstance on nondiscretionary accruals. However, there is a disadvantage. By assuming that revenue is nondiscretionary, the model ignores the fact that revenue itself can be managed. So the model will extract the discretionary accruals and causes the estimate of earnings to be biased toward zero.

4. The Modified Jones Model

This model tries to eliminate the forecast error of the Jones model in measure discretionary accruals when there's exist discretion in revenue (a partitioning variable). The revenue is adjusted for change in receivables in the event period. By assuming that all changes in credit sales in the event period result from earnings management,

5. The Industry Model

This model is developed by Dechow and Sloan (1991). The model is similar to the Jones model in that it relaxes the assumption that nondiscretionary accruals are constant over time. The difference is that instead of attempting to directly model the determinants of nondiscretionary accruals, the Industry model assumes that variation in the determinants of nondiscretionary accruals are common across firms in the same industry. The model uses median of total accruals scaled by lagged assets, instead of total accrual by firm, to determine discretionary accrual.

The effectiveness of the model hinges on two factors. First, industry model only removes variation in non discretionary accruals that is common across firms in the same industry. If change in nondiscretionary accrual mostly reflects to change of firm specific situation, the model cannot extract the correct nondiscretionary accrual from discretionary accrual. Second, because the model removes the variation in discretionary accruals that is correlated across firms in the same industry, the model will face with unintentionally extracting earnings management problem that is the conclusion will biases due to the opposite correlation sign to the true coefficient between main variable (non discretionary) and control variable.

Among the competing model, Healy model and DeAngelo model are disadvantage in that both assume that non discretionary accrual (NDAC) is constant overtime and do not take in to account the effect of changes in firm's economic circumstance on non discretionary accrual.

Industry model is limited by the factors described above. The Jones model is weak in that it assumes that revenue are non discretionary which is not true. And Modified Jones model has corrected this weakness.

Burgstahler and Dichev (1997) provide evidence that firms manage reported earnings to avoid earnings decreases and losses. Especially, in cross-sectional distributions of earnings changes and earnings, they find unusually low frequencies of small decreases in earnings and small losses and unusually high frequencies of small

increases in earnings and small positive income. They find that cash flow from operations and changes in working capital are used to achieve increases in earnings. They introduce two theories; the information-processing heuristics theory and prospect theory about the incentive for avoidance of earnings decreases and losses.

Burgstahler and Eames (1998) find that executives manage earning to meet analysts' forecasts. Earnings were managed upwards to avoid falling short of analysts expectations. However, in Thailand, data about analysts' consensus is not available.

Caneghem (2002) finds that managers of UK-listed companies tend to round-up reported pre-tax income, in a way that increases the first digit by one, when they are faced with a nine in the second-from-the-left position for this particular earnings measure. The major contribution of the current study is that it introduces discretionary accruals in this line of research. Discretionary accruals were estimated using both the Jones model (1991) and the modified Jones model as proposed by Dechow et al. (1995). The results clearly suggest that discretionary accruals are used in order to round-up reported earnings figures. However there is no evidence about surplus free cash flow.

Bauwhede, Willekens and Gaeremynck (2003) find that Belgian both private and public companies engaged in earnings management and income smoothing. The study also find less constraint by auditors on the earnings management process for companies whose earnings were below target levels. It was hypothesized that the low level of litigation in Belgium influenced the auditors' actions. This study confirms earnings management exists outside the United State, but that the environment within a country influences how and what is done. Chung, Firth and Kim (2005) find that managements engage in earnings management. Low-growth companies with high free cash flow will use income-increasing discretionary accruals to offset the low or negative earnings that inevitably accompany investments with negative net present values. This paper suggests the external monitoring by big 6 auditors and institutional investors with substantial shareholdings is effective in deterring managers' opportunistic earnings management.

Chung, Firth and Kim (2005) find that managers engage in earnings management. Low-growth companies with high free cash flow will use income-increasing discretionary accruals to offset the low or negative earnings that inevitably accompany investments with negative net present values. This paper suggests the external monitoring by big 6 auditors and institutional investors with substantial shareholdings is effective in deterring managers' opportunistic earnings management. Free cash flow allied to low-growth opportunities has been identified as a major agency problem where managers make expenditures that reduce shareholder wealth.

Piriyaniti (2006) finds that IPO firms manipulate earnings during period before IPO and year of IPO. He studies using data from Stock Exchange of Thailand during 2001-2003. At that time Thai government promoted private firm to raise capital through Stock market. Stock Exchange Commission (SEC) had propagated new regulations to protect investors and enforced the use of new accounting standards to ensure that financial reports are more reliable. In his paper, he use modified Jones model, which considers discretionary current accruals of IPO firms comparing to matched firms (not IPO firms). He finds that discretionary current accruals of IPO firms are positive and higher than those of matched firms in the year of IPO. However, his paper does not investigate the effect of surplus free cash flow (SFCF) and discretionary accruals (DAC) and external monitoring. Moreover, his paper concentrates only on IPO firms.

Although, there are mix results about the benefit of earnings management, the earnings managements give investor about firm performance. The literatures above concentrate on earnings management in various aspects. However there is one belief that is firms have incentives to manage earnings. If the information is inconsistent, investigation will be done.

McKee (2005) introduces 2 incentive views for earnings management. First, on the benefit of owners, managers manage earnings to benefit the owner and firms. From this view, manager mange earnings to maximize share price and company value, minimize the probability of bankruptcy, meet debt covenants and minimize intervention from state agency.

Second, on the benefit of managers, they manage earnings basically for their own benefit for increasing their compensation, maintaining their job, getting a promotion.

By the second view, there exists an conflict between owner and manager which is called “Principal-agent theory or agency problem.”

Agency Cost Hypothesis

Generally, principal-agent relationship is the relationship between owner and management. Owners hire management to take actions on their behalf. Agency problem arises from conflicting interests of agents and principals. There are 2 major components of an agency problem: uncertainty that agent cannot control and lack of information on the part of principal. If principal can observe agents’ action and no free-rider problem, there would be no incentive problem.

Jensen (1986) has defined the agency cost of free cash flow as cash flows that are invested in negative net present value (NPV) projects. Firms with low-growth opportunities are more likely to invest free cash flow in unprofitable projects. In the absence of effective monitoring or disciplinary actions by outside stakeholders and their agents, some managers may chose to invest in marginal or negative NPV projects and activities. These projects and activities may be self-gratifying to the managers and may bring pecuniary benefits or other personal rewards. In many cases, these managers may believe the investments will at least ‘break even’ for investors, although the fact that they ‘hide’ or give little disclosure to the activities suggests that they do not believe that the activities will withstand scrutiny by investors.

Identifying the agency cost of free cash flow (investments in negative NPV projects) is very difficult. Managers do not disclose to investors an investment’s cash flow projections and the assumptions behind them. Appealing to commercial secrecy provides a cloak for bad investment decisions. Managers may not even internally project cash flows for some investments: the biases managers have for some ‘pet’ activities or personal perquisites may make them ignore cash and profit planning. Poor investments, however, will reveal themselves in the future profits of the company. Non-value-maximizing investments eventually reduce earnings. This will result in lower stock prices and may trigger shareholder actions to remove directors and senior executives. To camouflage the impact of negative or marginal NPV investments on earnings, managers may employ accounting procedures that increase reported income. These ‘inflated’ profit numbers may help assuage investors and lead to higher market valuation than would otherwise have been the case (assumes that investors cannot completely unravel the earnings management). This situation lead to my first hypothesis that :

H1: companies with high SFCF are more likely to choose income-increasing DAC than otherwise.

Chung, Firth, and Kim (2005) assume that auditors and institutional shareholders will reduce the SFCF-DAC relation. The existence of the external independent auditor can affirm the firms' financial statements. This verification gives assurance to shareholders, potential investors and creditors that the income statement and balance sheet accurately or conservatively reflect the state of the clients' activities and net assets. The audit function reduces agency costs created by information asymmetry and reduces the control problems caused by the separation of ownership and management. The auditor examines and express the opinion whether the firms accounting procedures are appropriate. If the procedures are considered inappropriate, then the auditor will try to persuade the client to reverse the financial statements, and if they do not do so, the audit report can be qualified.

Becker, Defond, Jiambalvo, and Subramanyam (1998) find that Big Six audit firms act as a constraint on both increasing and decreasing income earnings management. Krishnan and Krishnan (1997) and Francis and Krishman (1999) provide evidence suggests that auditors are more likely to issue a qualified audit opinion when they believe that failure to do so increases litigation risk beyond an acceptable level. Basu et al., (1998) found that auditors tend to be conservative, and so they may not agree with aggressive income-increasing DAC.

DeAngelo (1981), Simunic and Stein (1987), and Francis et al., (1999) found that it is now widely accepted that there are quality differences among audit firms. Becker et al., (1998), Kim et al., (2003) and Francis et al., (1999) found that high-quality auditors are more likely to restrict income-increasing DAC. High-quality auditors want to avoid shareholder litigation and bad publicity associated with a client company that aggressively uses inappropriate positive DAC. Traditionally, Big 6 firms (currently big 4 exclude Arthur Anderson and Cooper & Lyband) have been used as a proxy for high-quality auditors.

These auditing firms have a major market share of listed company clients in America and around the world as well as in Thailand. They provide consulting, computer, and tax departments that use the same brand name. To protect their reputations, the high-quality auditors deploy significant attempt to auditing such as recruitment, training, and systems, and they have the independence to insist that clients make necessary changes to their financial statements or else they will issue qualified audit reports.

St. Pierre and Anderson (1984) and Palmrose (1988) show that auditors are more likely to be sued if reported profits are proved to exceed the 'true' earnings. In contrast, there is little or no evidence of auditors being sued if reported profits are less than the 'true' earnings. They report a lower level of litigation among Big 6 auditors.

Chung, Firth, and Kim (2005) assume that a Big 6 auditors will be even more cautious when a client company's agency costs are high. So, when SFCF is high, Big 6 auditors will restrict the use of DAC more than when SFCF is low.

This leads to my second hypothesis.

H2: Big 4 auditors moderate the SFCF-DAC relationship.

Sainty et al., (2002) , Davis et al., (2003), Geiger and Raghunandan (2002), Myers et al., (2003) and Johnson et al., (2002) find that long tenure do not reduce independence and normally, improve quality of their audit work. However, in United States, and some countries in Europe call for mandatory auditor (Arrunada and Paz-Ares, 1997). However, Davis et al. (2003) reach an opposite conclusion. They find a positive relation between tenure and absolute discretionary accruals and a negative relation between tenure and absolute analyst forecast errors. Chung, Firth, and Kim (2005) include audit tenure as a main effect and as and interaction term in their regression models. Due to the mix conclusions on the effect of audit firm tenure on independency , they do not determine the direction sign on the tenure variable.

Institutional shareholders have the expertise to analyze company performance. The implication is that if the institutions own a large percentage of company's shares, then they have incentive to monitor management's actions, and they have the power to affect or change corporate actions and decisions. When institutional investors have substantial shareholdings, it is difficult for them to sell shares immediately at the prevailing price. This lack of liquidity means investment institutions have incentives to closely monitor companies with high SFCF. Supposing other things being equal, companies with substantial institutional shareholders become less able to engage in opportunistic earnings management. Chung, Firth, and Kim (2005) assume that the monitoring activities of institutional shareholders will obscure management from using income-increasing DAC. The way of inhibiting the actions of management is the threat of legal action against managers taken by institutional investors. Institutional investors have the ability to remove managers if they believe the managements are using DAC to hide the earnings impact of their opportunistic actions. Institutional shareholders will more closely monitor management and management's accounting choices if there are high agency costs. Institutional shareholders will therefore impose more monitoring when free cash flow is high, which leads to the third hypothesis.

H3: Large institutional shareholders moderate the SFCF-DAC relationship.

Chapter 3
Methodology

1. DATA

In this paper, the data consists of firms traded in Stock Exchange of Thailand between 2001 and 2005. I use 3 sources of data. The first source of data in financial statement is based on database called “Data-stream” in which financial figures are grouped in such a way that user can use for cross-sectional comparison.

The second source is business on line web site (www.bol.co.th) which provides the list of auditors who express the opinion whether financial statements are correct and fair represent the financial status of the companies.

The third source is Securities Exchange Commission web site (www.sec.or.th) which provides us the auditors who are granted to sign in financial statement of listed companies. In this source, there also provides us the audit firm where granted auditors are members. Due to the financial fraud of Enron and the merger between 2 big 6, there are now only big 4 auditors that survive beyond 2005 (PricewaterhouseCoopers, Ernst & Young, Deloitte Touche Tohmatsu, and KPMG).

Data from Datastream consists of main board and foreign board. In this paper, I select data from main board because it represents the market as a hole. However, there are some missing data from the database, the table 1 below shows detail of all data.

Table 1 Detail of data from 2001-2005

SECTOR	# OF COMPANY	LISTED B/F 2001	FIN /INSUR /BANK	DATA MISSING	OUTLIER/ ERROR DATA	DATA USED
VEHIC	17	10	-	4	-	6
TRNS	12	9	-	3	-	6
TEXT	27	27	-	5	1	21
PULP	3	2	-	1	-	1
PROP	53	37	-	16	5	16
PROF	2	1	-	1	-	-
PKG	13	11	-	3	-	8
PHARM	3	3	-	3	-	-
NON	28	18	-	8	3	7
MINE	1	1	-	-	-	1
MAI	33	-	-	-	-	-
INSUR	17	17	17	-	-	-
HOTEL	15	12	-	3	-	9
HHOLD	12	12	-	2	2	8
HEALTH	13	12	-	4	1	7
FOOD	24	21	-	5	1	15
FIN	34	16	16	-	-	-
ETRON	11	8	-	3	-	5
ENTER	25	15	-	7	-	8
ENERG	19	11	-	4	1	6
COMUN	23	13	-	3	1	9
COMM	15	100	-	1	2	7
CHEM	13	10	-	2	-	8
BUILD	28	17	-	8	1	8
BANK	13	13	13	-	-	-
AGRI	21	20	-	7	1	12
TOTAL	**475**	**326**	**46**	**93**	**19**	**168**

The final sample size is 840 company year firm observations between 2001 and 2005 (168 companies). Summary descriptive statistics for the sample are reported in table 2.

2. Hypothesis

According to the literature review in chapter 2, the firms with exceed free cash flow and low growth opportunities have incentives to use those money in non maximizing shareholder wealth projects or use expenditures which do not benefit to owners. However, by the use of external monitoring, managers are obstructed to manage earnings. I expect to discover the same result as Chung, Firth, and Kim (2005) did. Therefore, I set 3 hypothesizes as follows:-

H1: Firms with surplus cash flow tend to manage earnings through increase in discretionary accounting accruals.

Big 4 auditor firms viewed as independence external parties can moderate the use of discretionary accounting accrual by management. This leads to the second hypothesis:-

H2: Firms that use Big 4 auditors can reduce the use of discretionary accounting accrual to manage earning.

Institution investors holding significant shares have incentive in monitoring managers not to harm the wealth of owners. This leads to the third hypothesis:-

H3: Large institution investors reduce the opportunity of managers to manage earning when the firms have high surplus cash flow with low growth opportunities.

3. Model

I have set the model according to Chung, Firth, and Kim (2005). I select this model because the model explains both the effect of individual independent variable to dependent variable and the effect of the interaction of independent variables to dependent variable. Moreover, it takes in to account the effect of factors (control variables) to dependent variable. Modified Jones equation is used to find the Discretionary accounting accruals (DAC). Modified Jones is the best among the 5 choices as explained in chapter 2. The model is set below:-

$$DAC_{it} = \beta_0+\beta_1 SFCF_{it}+\beta_2 B4_{it}+\beta_3 LT_{it}+\beta_4 SFCF*B4_{it}+\beta_5 SFCF*LT_{it} +\beta_6 IS_{it}+\beta_7 SFCF*IS_{it}+\beta_8 DEBT_{it}+\beta_9 RELCF_{it}+\beta_{10} SIZE_{it}+\beta_{11} AC_{it}$$

Where

DAC = discretionary accounting accruals derived from the modified Jones (1991) model. The reason of using modified Jones has already explained in chapter 2. The dependent variable can be positive and negative.

$SFCF_{it}$ = a dummy variable represents Surplus Free Cash Flow. The value equals to 1, if Retained Cash Flow (RCF) is above sample median for the year and price per book value (P/B) is below sample median for the year and 0 otherwise. In this paper growth is measured by price per book value which widely use in the financial market. Firms that have future growths will be demanded from investors and share price will increase and reverse results is true. The implication of this variable is that high RCF means the firms have surplus free cash flow whereas low price per book value means the firms have low growth opportunities (the equation of RCF will be discussed next).

$B4_{it}$ = a dummy variable represents big 4 auditor firms (PricewaterhouseCoopers, Ernst & Young, Deloitte Touche Tohmatsu, and KPMG). The value equals to 1 for the firms use big 4 and 0 otherwise.

LT_{it} = a dummy variable represents tenure of auditors. The value equals to 1 for tenor of 5 years or above (in this study), and 0 otherwise.

$SFCF*B4_{it}$ = the interaction between big 4 auditors and surplus free cash flow. The implication is how big 4 auditors react to the firms with surplus cash flow but low growth opportunities.

$SFCF*LT_{it}$ = the interaction between tenor of auditors and surplus free cash flow. The implication is how tenor effect to the firms with surplus cash flow but low growth

opportunities. In other word, whether long tenor increases or decreases earnings management when confront with firms with surplus plus free cash flow.

IS_{it} = a dummy variable represents institution investors holding firms' shares. The value equals to 1, if the firms have institution investors holding firms' shares 5% or more and 0 other wise.

$SFCF*IS_{it}$ = the interaction between institution investors and surplus free cash flow. The implication is how institution investors response to the firms with surplus cash flow but low growth opportunities.

$DEBT_{it}$ = firm's total debt scaled by total asset. The implication is that firm with debt reduce managing earnings because of the monitoring from debt holders.

$RELCF_{it}$ = relative cash flow from operation measured by the difference between cash flow from operation for the year divided by lagged total asset (t-1) and the industry median for the year. The implication of the variable is that if firm's cash flow below industry's median (the difference is negative), management will manage increasing earnings.

$SIZE_{it}$ = a log of market value of equity. The implication is that large firms have incentives to increase managing earnings.

AC_{it} = an absolute value of total accruals scaled by lagged total asset of previous year (t-1). The implication is that firms with high AC reduce the discretionary accruals (DAC). This is because total accruals consist of non-discretionary part (NDAC) and discretionary part (DAC).

From modified Jones equation, I compute the discretionary accounting accruals as follows:-

$$TAC_{it}/TA_{i,t-1} = \alpha_0(1/TA_{i,t-1})+\alpha 1[(\Delta REV_{it}-\Delta AR_{it})/TA_{i,t-1})]+\alpha_2(PPE_{it}/TA_{i,t-1})$$

Where

$TAC_{it}/TA_{i,t-1}$ = total accruals divided by lagged total assets.

TAC_{it} = (Δ current asset - Δ cash) – (Δ liabilities-Δ short term debt - Δ taxes payable)-depreciation. Due to unobserved of taxes payable, I do not include taxes payable in the computation.

$TA_{i,t-1}$ = an lagged total asset

REV_{it} = an independent variable represents sale of the company.

AR_{it} = an independent variable represents account receivables.

PPE_{it} = an independent variable represents plant, property and equipment.

Δ = difference between current period and previous period

I regress the equation above to find the coefficients (αi). Then, I find the fitted value from the equation in each period as set the value as non discretionary accounting accruals (NDAC). Discretionary accounting accruals (DAC) can be solved by:-

$$TAC_{it}/TA_{i,t-1} = NDAC_{it} + DAC_{it}$$

Next, I calculate retained cash flow as a component of surplus free cash flow. The retained cash flow (RCF) is estimated as follow:-

$$RCF_{it} = (INC_{it} – TAX_{it} –INT_{it} – DIV_{it})/ TA_{i,t-1}$$

Where
INC_{it} = Operating income before depreciation
TAX_{it} = Corporate income tax
INT_{it} = Interest expense
DIV_{it} = Dividend to preferred shareholder and common shareholder

After I get the RCF, I collect the Price per Book value (P/B) of each firm by year. Then I rank the P/B value using median of each year as a base value and determine that if P/B value of a firm in each year is higher than the median in that year it means that firm is a high growth firm. If P/B value of a firm is lower than the median in that year it means that firm is a low growth firm.

Now I have both RCF and P/B of each firm, I can determine $SFCF_{it}$ as mention above.

Chapter 4
Results

I conduct a descriptive statistics for the independent variables and control variables. The result is shown in Table 2.

Table 2 Descriptive statistics for variables

VARIABLE*	OBSERVATION	MEAN	S.D.	MEDIAN	MINIMUM	MAXIMUM
DAC	840	-0.0065	0.3642	0.0079	- 7.0169	2.4357
SFCF	840	0.2167	0.4122	-	-	1.0000
B4	840	0.5929	0.4916	1.0000	-	1.0000
LT	840	0.7238	0.4474	1.0000	-	1.0000
IS	840	0.9488	0.2205	1.0000	-	1.0000
DEBT	840	0.5611	0.7863	0.3852	-	12.2261
RELCF	840	0.1109	0.7500	-	- 4.5548	11.0091
SIZE	840	3.1839	0.7525	3.1400	1.1804	5.4584
AC	840	0.1575	0.3239	0.0873	0.0001	4.8140

*Unit of each variable : NON

The mean and median DACs are close to zero. Twenty-two percent of observations are classified as having potential SFCF (agency problems). The Big 4 audit fifty-nine percents of the observation companies. Seventy-two percent of companies have been audited by the same auditor for 5 years or more. Ninety-five percents of companies have substantial institutional shareholders (five percent or more). The Big 4 and the IS indicate that most companies are audited by high quality firms and are monitored by institutional investors. Debt to total asset is fifty-six percent. Absolute total accruals to total assets (AC) average fifteen percent (mean) and nine percent (median).

In this study, I use panel data model to run the result. The model includes cross-sectional and time series data. The regression result has shown in table 3.

Table 3 Regression estimates result

Variable	Predicted sign	Coefficient	Std. Error	t-Statistic	Prob.
Intercept	No	-0.660454	0.200838	-3.288493	0.0011*,**,***
SFCF	+	0.555985	0.155825	3.568008	0.0004*,**,***
B4	-	0.065296	0.053365	1.223573	0.2216
LT	No	-0.050838	0.035936	-1.414656	0.1576
SFCF*B4	-	-0.091337	0.063767	-1.432366	0.1525
SFCF*LT	No	0.108240	0.064930	1.667027	0.0960***
IS	-	0.050993	0.068764	0.741561	0.4586
SFCF*IS	-	-0.485166	0.143218	-3.387616	0.0007*,**,***
DEBT	-	0.016867	0.022333	0.755275	0.4504
RELCF	-	-0.334283	0.020165	-16.57779	0.0000*,**,***
SIZE	+	0.203570	0.056028	3.633335	0.0003*,**,***
AC	-	-0.294864	0.037081	-7.951998	0.0000*,**,***
R-squared	0.512255				
Adjusted R-squared	0.377142				
Prob. (F-statistic)	0.000000				

* : significant level at 1%
** : significant level at 5%
*** : significant level at 10%

The result represents the model below:-

$$DAC_{it} = \beta_0+\beta_1 SFCF_{it}+\beta_2 B4_{it}+\beta_3 LT_{it}+\beta_4 SFCF*B4_{it}+\beta_5 SFCF*LT_{it} +\beta_6 IS_{it}+\beta_7 SFCF*IS_{it}+\beta_8 DEBT_{it}+\beta_9 RELCF_{it}+\beta_{10} SIZE_{it}+\beta_{11} AC_{it}$$

Overall model is statistically significant (probability of F-statistic is significant at all levels). The R-squared and adjusted R-squared indicate that that the model can explain cause of dependent variable (DAC) at 51.25%. Next, I will explain the hypothesis.

H1: Firms with surplus cash flow tend to manage earnings through increase in discretionary accounting accruals.

According to the result, I fail to reject the null hypothesis. This means that firms in Thailand tend to manage earnings through increase in discretionary accounting accruals. This finding is consistent to the previous paper by Chung et al., (2005). The result confirms that firms in Thailand with SFCF tend to manage earnings.

H2: Firms that use Big 4 auditors can reduce the use of discretionary accounting accrual to manage earning.

Big 4 auditor firms which are viewed as high quality, do not show statistical significance in moderating discretionary accruals. Note that the coefficient shows opposite sign to the previous study by Chung, Firth, Kim (2005).

When consider the interaction term of Big 4 with surplus free cash flow, I do not find that the interaction is significantly influential when companies have surplus free cash flows. This is inconsistent to previous study.

From the result above, I can not conclude about the direction of using big 4 auditors and their interaction with SFCF in listed firms in Thailand.

Next, the long tenor together with surplus free cash flow shows that there is statistically significant (at 10% confident level). This indicate that long tenor of auditors involve in moderate earnings in firm with high surplus cash flow.

H3: Large institution investors reduce the opportunity of managers to manage earning when the firms have high surplus cash flow with low growth opportunities.

The result does not show the statistical significance of institutional shareholders (IS) in moderating discretionary accruals in observations.

The interaction term SFCF*IS, significantly results with negative sign. Although no evidence that institutional investors moderate the DAC in general, it appears that the interaction between institution investors and SFCF moderate discretional accrual significantly. This evidence together with IS variable indicate that the 5% cut of may be sufficient to identify the effect of the observation.

The control variable, DEBT, does not show statistical significance in the observations. This result is inconsistent with previous papers (Chung, Firth and Kim 2005; DeAngelo et al., 1994; Dechow et al., 1995). The implication of DEBT is that bondholders have incentives to monitor the firms who borrow from them. In this study

The coefficient of RELCF is negative and statistically significant. This means that when firms with surplus free cash flow have operating cash flow higher than industry average, managers tend to reduce discretionary accounting accruals. This is

because firms with high operating cash flow will have high earning than industry. So managers have incentives to reduce discretionary accounting accruals for that they can smooth the income for the next period.

The coefficient of SIZE demonstrates positive and statistically significant. This is consistent to the predicted sign and the previous paper. This suggests that large size of public companies tend to manage earning more. Size is measured market value and how big the company in the stock market.

Finally, the coefficient of AC is negative and statistically significant. This result is consistent to the study by Becker et al. (1998).

Chapter 5
Conclusion
Application and policy implication

Earnings management is widely used by manager of both in private and public companies. This paper examines the listed companies in Stock Exchange of Thailand between 2001 and 2006**.** The result show that low growth companies (measured by low median of industry price per book value) with surplus free cash flow have significantly positive coefficient. This study broadens the agency cost hypothesis. Firms with low growth opportunity and surplus free cash flow tend to use discretionary accounting accrual. Management may use the surplus cash flow in the way that deteriorates shareholder's wealth such as payment for unnecessary expense for management benefit, and selecting a negative NPV project. Management uses earning management to hide the bad and inflate the income by using favorable accounting procedure.

This study is benefit to financial regulation agencies such as Federation of Accounting Professions (FAP), Securities and Exchange Commission (SEC), and Stock of Exchange of Thailand (SET).

The FAP can apply this study to monitor auditors who certified opinion on financial statement. This extends the scope of regulate by tracking the reputation of auditors and the tenor of auditors on the firm. Using this relationship, it is possible to find the trend of earning management in firms.

The SEC and The SET can apply this study in monitoring the firm earning management for the firm with low growth opportunity and having surplus free cash flow. The authority can supervise how the firm uses surplus cash in doing investment. Also it can extend to monitor high growth firm using fund, but this study will require model that is appropriate for this objective. This will result in finding the parameter used as a control for firm in their authority.

It is possible to apply this model in quarterly for listed companies. This will help analyst to closely capture the performance of the low growth companies with high free cash flow.

However, to apply this model to private firms in Thailand, there is limitation of data. Because the Federation of Accounting Professions (FAP) allows private firms not to prepare statement of cash flow when submitting financial statement to Department of Business Development (DBD). Researchers must prepare their own statement of cash flow. However, the data disclosed in annual financial statement may not be enough to prepare. Consequently, the higher requirement in preparing financial statements for non-listed company is needed.

Appendix A : Regression result using EViews (Panel data)

Dependent Variable: DAC
Method: Panel Least Squares
Date: 06/04/07 Time: 23:59
Sample: 2001 2005
Cross-sections included: 168
Total panel (balanced) observations: 840
DAC= C(1)+ C(2)*SFCF+ C(3)*B4+ C(4)*LT+ C(5)*SFCFB4+ C(6) *SFCFLT+ C(7)*IS+ C(8)*SFCFIS+ C(9)*DEBT+ C(10)*RELCF+ C(11)*SIZE+ C(12)*AC

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.660454	0.200838	-3.288493	0.0011
C(2)	0.555985	0.155825	3.568008	0.0004
C(3)	0.065296	0.053365	1.223573	0.2216
C(4)	-0.050838	0.035936	-1.414656	0.1576
C(5)	-0.091337	0.063767	-1.432366	0.1525
C(6)	0.108240	0.064930	1.667027	0.0960
C(7)	0.050993	0.068764	0.741561	0.4586
C(8)	-0.485166	0.143218	-3.387616	0.0007
C(9)	0.016867	0.022333	0.755275	0.4504
C(10)	-0.334283	0.020165	-16.57779	0.0000
C(11)	0.203570	0.056028	3.633335	0.0003
C(12)	-0.294864	0.037081	-7.951998	0.0000

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.512255	Mean dependent var	-0.006499
Adjusted R-squared	0.377142	S.D. dependent var	0.364232
S.E. of regression	0.287457	Akaike info criterion	0.534511
Sum squared resid	54.28899	Schwarz criterion	1.565716
Log likelihood	-41.49458	F-statistic	3.791296
Durbin-Watson stat	2.277038	Prob(F-statistic)	0.000000

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