



## CHAPTER II

### THEORETICAL FRAMEWORK, LITERATURE REVIEW, AND HYPOTHESIS DEVELOPMENT

#### 2.1 Theoretical Framework

In the late 1960s the informational approach played an important role in accounting theory. The seminal paper of Ball and Brown (1968) presents evidence that accounting data (e.g. earnings) influence (in setting) stock prices. The following studies confirm that accounting data convey information useful in setting stock prices. Obviously, the informational approach of accounting theory is reflected in FASB's Statement of Financial Accounting Concept No. 1 (1978):

‘Financial reporting should provide information that is useful to present and potential investors and creditors and other users in assessing the amounts, timing, and uncertainty of prospective cash receipts....’

Therefore, the data in financial reports play an informational role to facilitate decision makers, e.g. investors and/or creditors. The broad area of accounting research for investigating the informational role of accounting data includes the research on the relation between capital markets and financial statements. After the seminal publication of Ball and Brown (1968), over 10,000 published papers have appeared in famous journals (Khothari, 2001). From the literature, earnings are the most popular of accounting numbers used in the

investigations on usefulness of accounting numbers for stock valuation. However, earnings have limited explanatory power in explaining stock returns (Lev, 1989). Moreover, earnings are difficult to analyze because there might be problems due to the manipulation in their accrual component and the subjective nature of the accrual accounting process, which limits the comparability of financial statements among firms. Prior research has found a relationship between management compensation and changes in current accruals, indicating of manipulation in accruals (Healy, 1985; DeAngelo, 1986; Jones, 1991). For comparability, there is an argument on the variety in accounting methods of the same accounting practices (e.g. depreciation, inventory valuation, provision). Since the General Accepted Accounting Principle (GAAP) allows more than one accounting method in the same accounting practice, the accrual process is subjected to an arbitrary selection by the managers. There is a possibility that the different firms will apply different accounting methods in the same economic transactions. As a result, the reliability and relevance of earnings is questioned due to its accrual components. Hence, other non-accounting numbers are examined. Among others, cash flows have been raised because of several reasons. For example, cash flows reflect the economic realities of a company's performance (Lev and Ohlson, 1982) and are less manipulated than earnings. Also, the change in security analysis from an earnings-oriented valuation approach to a discounted cash flows approach casts doubt on the efficiency of the accrual system (Beaver, 1998).

### 2.1.1 The Role of Accounting Numbers in the Valuation of a Firm

In the late 1960s, the capital asset pricing model (CAPM) was introduced in the finance literature. The CAPM has had an important impact on the accounting literature due to the fact that it introduced the factors that affects the market value of securities and relating to accounting numbers. As a result, accounting numbers have been examined as information used in the valuation of a security.

The original version of the CAPM is based on (perfect certainty by) the following assumptions: (1) Perfect certainty, (2) Perfect capital markets, (3) Rational investors and (4) Investors assume that other individuals also act rationally. The market value of a firm can be written as the discounted present value of future cash flows (of the firm) as:

$$V_{i,0} = \sum_{t=1}^T \frac{C_{i,t}}{\prod_{\tau=1}^t (1 + r_{\tau})} \quad (1)$$

Where:

$V_{i,0}$  = the market value of firm i at the time 0

$r_{\tau}$  = the market rate of return for the period  $\tau$

$C_{i,t}$  = the net cash flows of firm i for period t

T = the life of firm i

However, perfect certainty is not feasible in the real world. Hence, the CAPM under uncertainty was introduced by extending the Fisher model. The one-period CAPM

assumes that investments are made at the beginning of the period and cash flows are received at the end of period. The model assumes:

- a) The rates of return on assets have distributions described by the expected rate of return  $E(r_i)$  and the variance of returns.
- b) Markets are perfect that there have no transaction cost and taxes, no individual investor can influence the market price of any asset, and all assets are infinitely divisible.
- c) The investors have homogeneous expectations.
- d) Investors are rational, risk averse, and maximize the expected utility of consumption. They also assume that other individuals act rationally.
- e) All individuals can borrow and lend at the riskless rate  $r_f$ .

From these assumptions, the expected rate of return on a risky asset is equal to the rate of return on the riskless asset plus a risk premium:

$$E(r_i) = r_f + [E(r_m) - r_f] \frac{COV(r_i, r_m)}{\sigma^2(r_m)} \quad (2)$$

where:  $E(r_i)$  = the expected rate of return on the asset

$r_f$  = the riskless rate of return

$E(r_m)$  = the expected rate of return on the market portfolio of assets

$COV(r_i, r_m)$  = the covariance between the rate of return on asset  $i$  and the rate of return on the market

$\sigma^2(r_m)$  = the variance of the rate of return on the market

Therefore, the difference between the Fisher perfect certainty model and the uncertainty model is the rate of return. The Fisher model has only one rate of return while the uncertainty model allows for many expected rates of return, depending on the level of risk.

To examine the CAPM as an expression in terms of price, the expected rate of return on investment in firm  $i$  (for one-period) can be written as:

$$E(r_i) = \frac{E(C_{i,1}) - V_{i,0}}{V_{i,0}} \quad (3)$$

where:

$E(C_{i,1})$  = the expected net cash flows of firm  $i$  at the end of the period

$V_{i,0}$  = the market value of firm at the beginning of the period

Therefore, the one-period CAPM can be expressed in terms of price by substituting equation (2) for  $E(r_i)$  in equation (3) and then, rearrange to obtain the firm valuation model as the following:

$$V_{i,0} = \frac{E(C_{i,1}) - [E(r_m) - r_f] \frac{COV(r_i, r_m)}{\sigma^2(r_m)}}{1 + r_f} \quad (4)$$

Equation 4 presents the value of firm  $i$  at time  $t$  as the discounted certainty equivalent of cash flows at time 1 at the riskless rate. The certainty equivalent of cash flows is decomposed into the expected cash flows at time 1 and a risk adjustment, i.e. the price of risk  $[E(r_m) - r_f]$  multiplied by a measure of risk  $[COV(C_{i,1}, r_m)/\sigma^2(r_m)]$ .

Alternatively, the one-period CAPM can express the firm value as its expected future cash flows discounted at the expected rate of return for the risk of that cash flows according to

$$V_{i,0} = \frac{E(C_{i,1})}{1 + E(r_i)} \quad (5)$$

The CAPM can be applied in a multiperiod setting by assuming that the riskless rate and the expected rate of return on the firm are constant over time. Then the value of the firm can be written as:

$$V_{i,0} = \sum_{t=1}^T \frac{E(C_{i,t})}{[1 + E(r_i)]^t} \quad (6)$$

Therefore, under the CAPM, researchers can investigate whether accounting numbers convey information to the markets. From equation (6), the critical variables are expected cash flows of the firm and the expected rate of return that the market requires for the risk of those cash flows. Accounting numbers can be used to assess these variables (for more details see Watt and Zimmerman, 1986 (chapter 2 and 5)).

By applying the CAPM the present study investigates whether the accounting numbers (i.e. earnings and cash flows) convey information useful to assess future cash flows of a firm to the SET. The implication of accounting numbers on the CAPM can be examined in a two-period CAPM world, where a constant expected rate of return is assumed.

$$V_{i,0} = \frac{E_0(C_{i,1})}{1 + E(r_i)} + \frac{E_0(C_{i,2})}{[1 + E(r_i)]^2} \quad (7)$$

and the value of the firm at time 1 is:

$$V_{i,1} = \frac{E_1(C_{i,2})}{1 + E(r_i)} \quad (8)$$

Thus, the realized rate of return for period 1 is:

$$r_{i,1} = \frac{V_{i,1} + C_{i,1} - V_{i,0}}{V_{i,0}} \quad (9)$$

To examine the impact of accounting numbers on the firm valuation, the expected rate of return is incorporated into the model:

$$r_{i,1} = E(r_i) + \frac{V_{i,1} + C_{i,1} - V_{i,0}[1 + E(r_i)]}{V_{i,0}} \quad (10)$$

Substituting equation (10) for  $V_{i,0}$  and  $V_{i,1}$  yields

$$r_{i,1} = E(r_i) + \frac{\frac{E_1(C_{i,2})}{1 + E(r_i)} + C_{i,1} - \left[ \frac{E_0(C_{i,1})}{1 + E(r_i)} + \frac{E_0(C_{i,2})}{[1 + E(r_i)]^2} \right] [1 + E(r_i)]}{V_{i,0}}$$

$$r_{i,1} = E(r_i) + \frac{[C_{i,1} - E_0(C_{i,1})] + \frac{[E_1(C_{i,2}) - E_0(C_{i,2})]}{1 + E(r_i)}}{V_{i,0}} \quad (11)$$

Equation (11) expresses that the difference between the realized rate of return of the firm for period 1 and the expected rate, i.e. abnormal rate of return  $[r_{i,1} - E(r_i)]$ , is driven by the unexpected cash flows for period 1  $[C_{i,1} - E_0(C_{i,1})]$  and the revision in expected cash flows for period 2 at the end of period 1  $[E_1(C_{i,2}) - E_0(C_{i,2})]$ .

The above illustration can be applied to a multiperiod world where the market's expectation at time  $t$  of cash flows for time  $t+1, t+2, \dots$  are equal to cash flows of period  $t$ , i.e. by assuming a martingale process.

Therefore, to investigate whether accounting numbers are useful for determining a firm's value, researchers study the association between unexpected changes in accounting numbers (e.g. earnings, cash flows) and the unexpected rate of return of firms' stocks. However, the association between the changes in firms' accounting number and its abnormal rates of return during any specific period (e.g. quarterly, annually) does not imply that those accounting numbers convey information to the market. The association indicates that those accounting numbers reflect the factors affecting stock prices. In order to test whether any accounting numbers convey information to the stock market (i.e. it has information content)<sup>5</sup>, the association should be observed at the time the accounting numbers are announced (Watt and Zimmerman, 1986).

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<sup>5</sup> Some researchers use the term 'information content' to refer to the association between unexpected accounting numbers (e.g. earnings, cash flows) and abnormal rate of returns during any specific period, e.g. quarterly, annually (e.g. Ball and Brown, 1968; Rayburn, 1986; Bowen et al., 1987).



### 2.1.2 The Role of Efficient Market Hypothesis

The efficient market hypothesis (EMH) plays an important role in an empirical study of the relations between accounting information and stock prices. In an efficient market, prices fully reflect all available information.<sup>6</sup>

The market efficiency has three major forms. In the weak form, security prices fully reflect information contained in past security prices and/or past trading volumes; in the semi-strong form, security prices fully reflect all publicly available information (e.g. financial statement data); and in the strong form, security prices fully reflect all available information (including inside information).

The EMH has implications for this study which tests whether accounting data have information content. In an efficient market, securities fully reflect any information if that information is useful in security valuation. Previous studies in the US have provided evidence indicating semi-strong form of market efficiency (Beaver, 1998, Chapter 6). For the SET, previous research also provides evidence indicating that stock prices fully reflect public information, e.g. earnings (Suchitra Vacharajittipan, 1990, Pimpana Srisawasdi, 1996, Nimnaul Keorath, 1996). Thus, the CAPM along with the efficient market hypothesis

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<sup>6</sup> Fama (1970) states that if security prices fully reflect the information available, the market is efficient. Beaver (1998) states that 'The market is efficient with respect to some specified information system, if and only if security prices act as if everyone observes the information system' (Beaver, 1998 pp.127).

facilitates an investigation regarding the information content of any released information (e.g. financial reports).

Based on the CAPM and the EMH, accounting researchers assume that earnings can be used as a measure of current and future cash flows, and set out to analyze the association between unexpected changes in earnings and the unexpected rate of return on securities. From equation (11), the abnormal rate of return for a period is expressed as a positive function of the unexpected cash flows of that period and the change in the expected cash flows for future periods. Then, earnings should be associated with abnormal rate of returns since earnings are an indicator of future cash flows. The literature of the association between accounting earnings and unexpected rate of returns has emphasized two questions: (1) whether earnings associate with unexpected rate of returns in specific periods (e.g. quarterly, yearly) and (2) whether earnings have information content (e.g. Ball and Brown, 1968; Foster, 1977; Beaver et al., 1979). Those two questions are different in trying to explain the implications of earnings for stock prices. The former explores if earnings reflect factors affecting stock prices while the latter explores whether earnings convey useful information to the market (Watt and Zimmerman, 1986, Chapter 3). Investigating on information content of earnings (in this sense) needs to observe the change in stock prices at the times of earnings announcement.<sup>7</sup> Previous research find evidence consistent with the

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<sup>7</sup> A number of studies on incremental information content of cash flows beyond earnings employ the associate analysis of unexpected cash flows/earnings and unexpected rate of returns in a yearly period.

association between unexpected stock returns and unexpected earnings in both sign and magnitude for a given period (i.e. quarter or year) and the association between unexpected stock returns and unexpected earnings at the time of earnings announcements (Watt and Zimmerman, 1986, Chapter 3; Beaver, 1998, Chapter 5; Khotari , 2001).

Previous studies find that unexpected current cash flows have an association with abnormal rate of returns (Wilson, 1986 and 1987; Rayburn, 1986; Bowen et al., 1987; Cheng et al., 1996 and 1997). It implies that unexpected cash flows can be used to predict of the change in expected future cash flows under the CAPM. Further, several studies have investigated unexpected earnings and unexpected cash flows to find out which one has the highest association with abnormal returns, i.e. the relative or incremental information content studies (e.g. Rayburn, 1986; Bowen et al., 1987; Wilson, 1986 and 1987; Ali, 1994; Biddle et al., 1995; Ali and Pope, 1995; Wang and Eichensher, 1998; Cheng et al., 1996 and 1997). However, there is no conclusive evidence for the existence of the incremental information content of cash flows beyond earnings. Some studies provide evidence indicating that cash flows have incremental information content beyond earnings (Wilson, 1986 and 1987; Rayburn, 1986; Bowen et al., 1987; Cheng et al., 1996 and 1997; Biddle et al., 1995, Wang and Eichensher, 1998), while some studies find opposite results (Bernard and Stober, 1989; Ali, 1994; Ali and Pope, 1995). These prior studies emphasize only on operating cash flows and, in addition, operating cash flows are estimated simply by adjusting earnings with some accruals, e.g. depreciation and changes in working capital.

Thus, the simple estimation of cash flows instead of using the reported cash flows might be the cause of the low association between abnormal returns and cash flows. As a result, the usefulness of (reported) cash flows in the valuation of a firm is ambiguous.

Recently, cash flows are proposed to facilitate investors about the valuation of the firm because it provides information useful for assessing a firm's ability to generate cash in the amount, timing, and certainty (IASB, 1994; TAS, 1994). Thus, cash flows information reported in the cash flows statements should have implications for the valuation of a firm, since it provides information useful for predicting the firms' future cash flows. Further, operating cash flows reported in the cash flows statements are different from operating cash flows estimated simply by adjusting earnings with some accruals (Cheng et al., 1997). Operating cash flows from the cash flows statements are not articulated with the balance sheet in the sense that changes in current assets and liabilities presented on a balance sheet are often reported (Bahson et al., 1996). The usefulness of cash flows information reported in the cash flows statements is a new area of research to be explored.

### **2.1.3 Cash Flows Reported by Statement of Cash Flows**

The Institute of Certified Accountants and Auditors of Thailand (ICAAAT) issued TAS No. 25 Statement of cash flows which mandate on financial statements from 1 January 1994 and onwards. TAS No. 25 requires the disclosure of cash flows information by classifying cash flows into three activities: operating, investing, and financing activities. Further, it requires the disclosure of the individual major components of

cash flows from each of activities. The cash flows from operating activities are the cash flows arising from the principal revenue producing activities of a company. Generally, they result from transactions and other events comprising net profit or loss. The cash flows from investing activities reveals the expenditures made for resources intended to generate future income and cash flows. The cash flows from financing activities are cash flows arising from the transactions on debts and equity and include other events that cause changes in the financial structure of a firm.

However, for reporting cash flows from operating activity, TAS No. 25 allows firms to use both direct and indirect methods. On the one hand, the direct method discloses cash flows from the principal revenue-producing activities, e.g. cash receipts from sales or other revenues, cash payments to suppliers of goods and services, and cash payments to employees. On the other hand, the indirect method presents cash flows from operating activity by adjusting net income by the effects of transactions of a non-cash nature, any deferrals or accruals of past or future operating cash receipts or payments, and items of income or expense associated with investing or financing cash flows (i.e. non-operating earnings). As a result, reporting cash flows from operating activity of the cash flows statements demonstrates cash flows from operation, current accruals, noncurrent accruals, and non-operating earnings. In other words, the indirect method of reporting cash flows from operating activity reveals the components of earnings. For reporting cash flows from investing and financing activities, TAS No. 25 requires reporting the major components of

each of those activities in order to provide a guideline for each activity's major components. As a result, the components of cash flows presented under the basis of TAS No. 25 comprise two levels components that are: (1) the aggregate level with net cash flows from operating activity, net cash flows from investing activity, and net cash flows from financing activity, and (2) the disaggregate level with the components of each activity.

Most firms in the SET report cash flows from operating activity using the indirect method (Toommanon, 2001), which is comprised of CFO, current accruals, and noncurrent accruals. The major components of cash flows from investing and financing activities typically reported by the firms listed on the SET are consistent with the suggestion in TAS No. 25, that components of investing cash flows are: Cash flows for investments in property, plant, and equipment (hereafter by PPE), Cash flows from retirement of PPE, Cash invest in subsidiaries, and Cash invest in other firms' securities. Components of financing cash flows are cash flows from debt issuances, cash flows from preferred stock issuances, and cash flows from common stock issuance.

## **2.2 Literature Review**

Studies of the information content of cash flows are typically conducted by applying a regression analysis of the association between cumulative (abnormal) returns and cash flows measures. Two approaches are used in cumulating stock returns: (1) the short-return window (the event study method) that cumulates (abnormal) returns surrounding an announcement date of annual reports (e.g. 9 days interval), and (2) the long-return window

that cumulates (abnormal) returns over a year. There are only two studies that applied the event study method whilst a lot of studies applied the second approach as is summarized below.

### **2.2.1. Short-return window studies (the event approach)**

Wilson (1987) employs the event study method to investigate the incremental information content of the accrual and funds components of earnings beyond earnings itself. He decomposes earnings into 2 components, which comprise of funds from operations component and an accrual component respectively. He examines funds component of earnings as of 2 meanings: working capital from operations and cash flows from operations. The study measures information content by the regression approach and the portfolio approach that both use a two-stage procedure. In the first stage, he estimates cross-sectional accounting forecast equation for components of earnings by assuming that earnings are announced, i.e. the coefficients are assumed constant across firms. Then he performs the second stage that, for the regression approach, he produces the association between the residuals from the regression analyzing in the first stage and the market model prediction errors. For the portfolio approach, three portfolios (Low, Medium, High) are formed by the magnitude of the residuals from the first stage in order to compare their mean abnormal returns with a Hotelling  $T^2$ -test. The main result of the regression approach is the nine-day event interval, which found that the coefficient of cash flows from operations is positive and significantly different from zero, whereas the working capital from operations

is not significant. The results of the portfolio are consistent with the regression approach that there is a significant difference in the abnormal returns across portfolios when funds were defined as cash from operations and a nine-day event interval was used. According to the results, Wilson concluded that the components of earnings have incremental information content over earnings itself if funds component is cash flows form operations, but not if funds component is working capital form operations. This implies that total accruals and cash from operations taken together have incremental information content beyond earnings.

Wilson (1986), in addition to Wilson (1987), constructs the two-return model that separately measures the abnormal returns of the two announcement events of earnings and its components, i.e. the event that earnings and revenue are announced by the Wall Street Journal and the event that annual report is received by the stock market. Then he investigates on the information content of cash flows and accrual components of earnings and their incremental information content beyond each other and beyond earnings by finding out the incremental informativeness of new information released at those two events. The results are consistent with Wilson (1987) that cash flows from operations and total accruals (current and noncurrent accruals) have incremental information content beyond earnings and beyond each other. However, the information of total accruals is dominated by current accrual, so that there is only little information contained in noncurrent accrual.



Bernard and Stober (1989) assess the generality and robustness of Wilson (1986 and 1987)'s results those suggesting to the extent that investors react more favorable to cash flows component than accrual component of earnings. They conduct the same tests with Wilson but use the longer period and use the greater observations from many industries. The results indicate that the results of Wilson couldn't be confirmed by different samples and by different periods. Bernard and Stober, then, examine more contextual frameworks of the implications of cash flows and accruals in setting stock price. They construct three alternative explanations: the quality of earnings explanation, the macroeconomic condition explanation, and the mix of components of unexpected current accruals explanation. For the quality of earnings explanation, they predict that current accruals have a smaller impact on prices than cash flows due to the manipulation in current accruals. Their results couldn't confirm the results of Wilson over times and over industries, so that the quality of earnings explanation cannot be claimed. For the macroeconomic conditions explanation, they explain that in the economic downturn period, the market would react favorably when management liquidates noncash working capital for cash. So, they predict that the coefficient of cash flows might more than the coefficient of current accruals. In contrast, in the expansion period, they explain that the market reacts favorably when management uses cash to increase noncash working capital. So, the higher coefficient of cash flows than accrual should be found. They use gross national products (GNP) and interest rates to be proxies of macroeconomic conditions. However, the results cannot support their predictions that all of

coefficients are not significantly different from zero and some coefficients are appeared on the wrong signs. For the mix of components of the explanation of unexpected current accruals, they decompose current accruals into the increases in inventories, plus the increases in receivables, and minus the increase in payables. They explain that the market should differently react to these components of current accruals due to its different reflection about managers' beliefs concerning with future sales levels. The results suggest that the individual components of current accrual have no impact on stock price setting.

### **2.2.2 Long-return window studies**

Rayburn (1986) relies on the question of whether accruals provide information to aid investors' prediction of future cash flows over the cash flows information containing in financial statement. Given that the relation between security returns and operating cash flows is existent, accruals should relate to security returns if accrual adjustment process aids investors to assess the future cash flows as claimed in SFAC No. 1 (1978). She regress abnormal returns on unexpected operating cash flows and unexpected accruals. The results show that unexpected cash flows from operation have significantly positive association with abnormal returns while unexpected accruals have significantly negative association. However, when she analyzes the components of accrual, the results indicate that current accruals have strongly positive association with security returns while noncurrent accruals have weakly negative association. As the results, in overall, the

information content of operating cash flows, aggregate accruals and current accruals are strongly supported while that of noncurrent accruals is only weakly supported.

Bowen, Burgstahler, and Daley (1987) tests for an association of unexpected returns with unexpected cash flows, unexpected working capital from operation, and unexpected earnings in order to explore the incremental information content among these information. The results suggest that cash flows have incremental information content beyond earnings and working capital from operation. Earnings and working capital have incremental information content beyond cash flows. Further, working capital from operation has a little incremental information content beyond earnings. The authors conclude that cash-based as well as accrual-based accounting information are impounded in security prices and have incremental explanatory power beyond information contained in each other alone.

Livnat and Zarowin (1990) investigate the information content of cash flows information that is required to disclose by SFAS No. 95. They emphasize on the components of cash flows from operating, investing, and financing activities. They document that the cash flows from operating activity and its individual components under the direct method have association with security returns. Further, the evidences also indicate to the extent of informativeness of individual components of cash flows from financing and investing activities. The information content of the aggregate number of cash flows from

operating and investing activities are also supported; however, there is a weak evidence to support the aggregate number of cash flows from financing activity.

Jennings (1990) presents the basis of interpreting incremental information content of earnings and earnings components. He introduces two issues in this line of research. The first one is the research to which analysis the informative composition of earnings (i.e. Cash Flows from Operation-- stated by CFO and Accruals-- stated by TA). The second issue is the research in examining the level of earnings disaggregating (i.e. Earnings, stated by NI, working capital from operation, stated by WCFO, and CFO). The earning components approach regresses stock returns on CFO and TA (i.e.  $RET = \theta_1 + \theta_2CFO + \theta_3TA + e$ ) to test for two questions: (1) whether the inclusion of each component makes informativeness to earnings, that is examining the difference from zero of regression coefficients of each component (i.e.  $\theta_2$  and  $\theta_3$ ), and (2) whether disaggregating components of earnings provides information increment to aggregate earnings, that is examining the preference of separate disclosures of individual components of earnings by testing the equality among coefficients of earnings components (i.e.  $\theta_2 = \theta_3$ ). If the coefficients are not equal, it implies that disclosing of individual components of earnings adds information beyond disclosing of aggregate earnings lonely because investors value them differently. The level of earnings disaggregating approach is regressing of stock returns on each level of disaggregating earnings, in order to investigate the incremental information content of disaggregating earnings' components beyond earnings (i.e.  $RET = \gamma_1$

+  $\gamma_2\text{CFO} + \gamma_3\text{NI} + e$ ). That is the test of whether the coefficients of each level are equal to zero when control the other levels. Nonzero of  $\gamma_2$  implies that investors value CFO and TA differently. However, independent variables of such both approach are linear transformations of each other, thus coefficients in the equations of those approaches are also a linear transformation of each others. As a result, the test of whether CFO adds informativeness to earnings is performed by  $\Theta_2 = \gamma_2 + \gamma_3 = 0$ , the test of whether TA adds informativeness to earnings is test by  $\Theta_3 = \gamma_3 = 0$ , and the test of whether investors value CFO and TA differently is operated by  $\Theta_2 - \Theta_3 = \gamma_2 = 0$ .

Ali (1994) investigates on the incremental information content of earnings, working capital from operation, and cash flows from operation in a stock price valuation. He employs both linear and nonlinear models of the relations between returns and those variables. The results of a linear model indicate that earnings have incremental information content beyond working capital from operation and cash flows. Working capital from operation has incremental information content beyond earnings and cash flows, and cash flows have no incremental information content beyond earnings and working capital. Further, the evidence supports the extent of nonlinear relation between those variables and stock returns. The incremental information content of cash flows beyond earnings and working capital from operation could be explored by using the nonlinear model. Furthermore,  $R^2$  of the nonlinear model was higher than of the linear model.

Instead of emphasis only on the operating flow as the prior studies, Clubb (1995) incorporates cash flows from investing and financing activities into the investigation on information content of earnings and cash flows. He relies on the assertion that dividends are the appropriate measures of aggregated cash flows for equity valuation. He employs the linear dividend valuation model in his study, which dividends derived from operating flow, investing flow, and financing flow. He uses the UK data sets covered the year 1955-1984. The findings indicate that both dividends and cash flows have information content and have incremental information content beyond earnings. Therefore, those evidences support that operating cash flows, investing cash flows, and financing cash flows are valuation relevant components of dividends. However, disaggregating dividends into those components seems to have little information addition to the information of dividend itself for the reason that the market reacts to those components similarly.

Biddle, Seow, and siegel (1995) investigate the relative and the incremental information content of net sales (NS), cash flows from operation (CF), and net income (NI). They regress abnormal returns on those variables by using the firm year data covering of the year 1974-1986 of 659 companies. The primary results indicate that each of measures have incremental information content beyond others. However, the results suggest that the specific qualification of industries have important effect on the incremental information content of those variables.

Ali and Pope (1995) examine the relative and incremental information content of earnings, working capital from operation, and cash flows from operation as of the performance measures for the UK firms. They employ two methodologies in this study, i.e. linear and non-linear relationship between stock returns and accounting information. The results reveal that all of those variables have information content; however, earnings have higher relative information content than the others, whilst working capital from operation have higher relative information content than cash flows from operation. The non-linear model provides the higher  $R^2$  than the linear model. Beside, the results indicate that all individual variables have incremental information content beyond others in the non-linear model, but cash flows have no incremental information content beyond the others in the linear model.

Cheng, Liu, and Shaefer (1996) investigate whether the incremental information content of cash flows from operation increase when earnings are transitory. They measure transitory of earnings by the absolute changes in earnings scaling by stock prices at the beginning of the year and the earnings scaling by stock price (E/P ratios). The results indicate that earnings and cash flows from operation have incremental information content beyond each other. The transitory elements of earnings reduce the incremental information content of earnings whereas increase the incremental information content of cash flows from operation.

Cheng, Liu, and Shaefer (1997) study on an incremental information content of cash flows from operation beyond earnings. They regress abnormal returns on both of level of and unexpected earnings and both of level of and unexpected cash flows from operation. They documents that earnings and cash flows from operation have incremental value-relevance beyond each other. Further, they found that when cash flows from operation of SFAS No.95 is incorporated into the model of estimated cash flows from operation, the estimated cash flows from operation loss its value-relevance. Such evidence suggests that cash flows information providing under SFAS No. 95 outperforms cash flows estimating from the other financial statements.

Wang and Eichensher (1998) study on the relationship between the informativeness and the predictability of cash flows from operation. Basing on the theory (Lipe, 1990) that the informativeness of an accounting variable is a function of both its predictability and the predictability of other available accounting variables, this study predicts that the cash flows coefficients positively relate to its predictability and negatively relate to predictability of earnings. The author employs 3,010 firm-year observations covering the year 1977-1986. The results are consistent with their predictions that cash flows are significantly incrementally informative when the predictability of earnings is low as well as when the predictability of cash flows is high.

Garrod and Hadi (1998) investigate the information content of cash flows items those are required by FRS 1. They regress 12-month cumulative abnormal returns on



changes and levels of the items that they examine both of aggregate items (e.g. net cash flows from operating, investing, and financing activities) and disaggregate items (i.e. subcomponents of aggregate items). The results indicate to the extent of the information content of all items except for cash flows from taxation. Further, they examine the per share data of those items. The results are consistent with the level approach that they conclude that the level and the per share bases of cash flows information convey the same amount of information.

Black (1998) investigates the value relevance of earnings, operating cash flows, financing cash flows, and investing cash flows in each lifecycle stage of a firm. He classifies firm-year observations into one of the four life-cycle stages (start-up, growth, mature, and decline) regarding multivariate approach that examines financial characteristics and age of firms. He investigates the value relevance of those variables in each state by regressing market value of equity (at the end of three month after fiscal year end) on those variables. The results indicate that the value relevance of each variable vary across life-cycle stages. The evidence suggests to the extent of value relevance of earnings and cash flows information in setting stock prices; however, vary by stages of firms' life cycle.

Charitou, Clubb, and Adreou (2000) investigate on the value relevance of earnings and cash flows from operation in Japan. Further, they examine the effect of transitory of earnings on value relevance of earnings and cash flows. The results indicated that earnings and cash flows have value relevance and they provided incremental value

relevance beyond each other. When earnings are transitory, the value relevance of earnings is diminished while the value relevance of cash flows is improved.

Kanokporn Narktubtee (2000) investigates on the value relevance of revenue, earnings, and cash flows information as the performance measures of Thai firms. She classifies cash flows into cash from operating, financing, and investing activities that the data are collected from the cash flows statements. She regresses stock prices on those measures by employing the annual data during 1994-1997 of the firms listed in the Stock Exchange of Thailand. The results show that earnings, cash flows from operating activity, cash flows from financing activity, and revenue have a significantly positive association with stock prices whereas cash flows from investing activity has a significantly negative association. The results of relative value-relevance analysis indicate that information of cash flows outperforms that of earnings and revenue in pricing the stocks of Thai firms. Further, she investigates on the information content of cash flows from operation (CFO), by regressing abnormal returns on CFO, and its incremental information content beyond earnings, by regressing abnormal returns on CFO and Earnings. The results reveal a positive association of abnormal returns and CFO, and also a positive relationship between earnings and abnormal returns, as of her expectation. However, the results provide the weak evidence to support the extent of significant information providing by CFO and the extent of incremental information of CFO beyond earnings, whilst the evidence strongly support the extent of incremental information content of earnings beyond CFO.

Charitou, Clubb, and Andeou (2001) incorporate the contextual factors (i.e. earnings permanence, the earnings growth, and firm size) into the investigation of incremental information content of earnings and cash flows from operation in the UK stock market. The results indicate that when earnings are transitory the information content of earnings decrease and the information content of cash flows from operation is not increase that contradicts with the evidences from the US of Cheng et al. (1996). Further, the firms with higher earning growth (market-to-book ratio) have higher stock price response to earnings relative to firms with lower growth. The evidence weakly supports that the firms with higher growth have higher stock price response of cash flows from operation than the firms with low growth. Besides, firm size effect did not found.

### **2.2.3 Other related studies**

Black and Scholes (1973) suggest that levered firms' equity could be viewed as a call option that in shareholders perspective, the value of the shareholders' position is equal to the present value of the bond and a call option. That means, at the maturity date of the bond, the shareholders will exercise their call option by paying off bonds and then reap the excess if the value of firm ( $V$ ) is higher than the repayment amount of the bond ( $D$ ). In contrast, the shareholders will default on the debt and not exercise the option if the value of firm is lower than the repayment amount of the bonds. As a result the wealth of shareholders ( $S$ ) can be written by:

$$S = \text{MAX}(0, V-D),$$

While the wealth of bondholder (B) is written by:

$$B = \text{MIN}(V,D)$$

The current bondholders will take a loss of wealth when new debt is issued with an equal claim on the firms' assets. As a result, current bondholders are posited in a riskier position that they cannot take more charge for the extra risk because bond has been issued. The market value of bonds will fall when new debt is issued due to increasing in risk that the new bondholders pay at fair price for their position. As a result, shareholders expropriate the wealth of current bondholders when new bond is issued, i.e. the wealth of shareholders increases. This hypothesis, thus, predicts that issuing new debt is reacted positively by the stock market.

Myers (1977) shows the model that an existence of debt can change the corporate' s investment decision in some situations. He expresses that a firm is valued based on going concern concept, then the firm's value composed of the market value of assets in place and the present value of future growth opportunities. The firms' growth opportunities can be regarded as call options that its value subject to the firms' discretionary investment in the future, while the value of assets in place does not depend on the firms' discretionary investment. Myers illustrates that assuming firms have valuable growth opportunities, the value of firms is a monotonically decreasing function of a repayment amount of debt, and the value of firm is maximum when the value of debt and a repayment amount of debt equal zero. His model suggests that firms with valuable growth

opportunities are less likely to issue risky debt if the managers act in the shareholders' interest. That is because risky debts lead the firm to avoid investment in positive-NPV projects in the future that reduce firms' value and then reduce shareholders' wealth. In the other word, the existence of debt leads to the sub-optimal investment decisions in order to maintain the maximum value of shareholders. This model suggests that the stock market likely reacts more negatively to issuing debt of high-growth firms than to issuing debt of low-growth firms.

Ross (1977) presents the signaling hypothesis that assuming managers knows the future distribution of firm returns whilst investors do not. He shows that managers benefit if the firm' securities are more highly valued by the market while they are penalties if the firm goes bankrupt. As a result, manager of high quality firms signal their high quality by using the high-leveraged capital structure for their companies. In contrast, managers of low-quality firms have higher marginal expected bankruptcy cost for any debt level that caused them unwilling to use debt finance, and then they use equity finance. Therefore, investors use the capital structure as a signal to differentiate between high- and low-quality firms. The investors are willing to assign higher valuations to highly levered firms. The signaling model predicts that stock prices increase on debt issues, and decrease on equity issues, i.e. debt issues signal good news and equity issues signal bad news.

Amihud and Lev (1981) suggest that managers have incentive to diversify their firms because they have much of his or her human capital in a firm that could be destroyed

by a single sour investment, that diversifying the firm is mean diversify their own portfolio. They argue that there is possible that those managers accept negative-NPV project from acquisitions in purposing to diversify their own portfolio.

Myers and Majluf (1984) provide a theoretical justification for the pecking order theory. The pecking order theory is based on two basic assumptions. First, the asymmetric information assumption which assuming that managers of a firm know better about the firm's current earnings and investment opportunities than outside investors. Second, the managers of a firm are assumed to act in the best interests of the existing shareholders of a firm. The theory expresses that managers are unable to convey information about a new positive-NPV investment opportunities to outside shareholder. So, in the case that they issue new stock to raise fund for the investment, the investor will buy these stock only at a price that does not reflect a net positive NPV investment. Therefore, the value of the new project is distributed to the new shareholders at the expense of the old shareholders. The pecking order hypothesis predicts that the managers will refuse to accept positive-NPV projects if this would lead to issue new equity. The solution of the firms to maintain the positive-NPV investment opportunities is retaining sufficient financial slack to be able to fund these investments (Myers and Majluf, 1984).<sup>8</sup> The pecking order theory explains that firms with valuable investment opportunities use a way to finance their projects internally, or select the

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<sup>8</sup> Financial slack is defined as a firm's cash and marketable securities and the unused (risk-free) debt capacity.

least risky securities possible if they need to finance in the external source of fund. The firms will finance by issuing new stock only in the case that managers consider the firm's shares are over valued. The investors understand such behavior of the managers, and then they always react to the new stock issuing as bad news. However, in the special case that the firms have the positive investment opportunities and all investors know that value. The managers prefer to issue the firm's stocks and the stock price reaction is nonnegative for this case.

Miller and Rock (1985) present the cash flow signaling model. Their model based on the balance of sources and uses of funds that the net cash flows (earnings – investment) is equal to net dividend payment (dividend – raised fund) in any period. The model relies on the assumption of rational behavior and expectations that the optimal investment level is anticipated by investors as well as is actually invested by the firms. In the general case, Miller and Rock assume that investors anticipate the positive net internal cash flow (i.e. earnings exceed optimal investment). Therefore, dividend payments signal to the positive current and prospective net cash flow and earnings (since the firms and investors known the exact optimal investment level) while raising funds signal to the negative current and prospective net cash flow and earnings. As a result, the securities issues convey information about net cash flow and earnings that have implication to setting stock prices. An announcement of any securities (either debt or equity) is implied to declining in net cash flow and earnings, therefore, will be reacted negatively by investors.

The evidences on market responses to announcement of new securities sales are consistent with such predictions of cash flow signaling model of Miller and Rock. For example, Asquith and Mullins (1986), Masulis and Korwar (1986), Mikelson and Partch (1986), and Jarukitsopa (2000) found the negative abnormal returns on announcement of common stock, while Dann and Mikkelson (1984), Eckbo (1986), and Mikkelson and Partch (1986), found the negative abnormal returns on announcement of debt. However, for the special case that investors anticipated the optimal investment to exceed earnings in any period, the investors will expect some level of financing. The financing, therefore, will be a good or bad news depends on the actual issue compare with expected issue of the firm's securities. This model suggested that only the excess of expectation is indicated to a bad news about net cash flows.

Jensen (1986) introduces the agency cost of free cash flows that is raised from the conflicts of interest between shareholders and managers (i.e. an agent of shareholders). The agency incentive perspective suggests that firms' managers have incentives to increase the firm size in order to earn higher power that the managers of the large free cash flows firms are more likely to undertake low-benefit investments in order to maintain the control and establish more power and prestige. As a result, firms' diversification is benefit to manager while cost to shareholders. Further, the free cash flow theory expresses that payout of cash to shareholders leads to the conflicts of interest between shareholders and



managers, especially when the firms can generate high free cash flow.<sup>9</sup> Paying out of cash to shareholders reduces the managers' power because the managers' controlling resources are decreased by the payouts. As a result, managers have incentive to spend free cash flow invest in negative-NPV projects rather than payout to shareholders. Thus, the conflict of interest problem is raised (i.e. the agency cost of free cash flow). The free cash flow theory predicts decreases (increases) of cash dividend payments are consistent with decreases (increases) of stock prices due to the agency cost of free cash flow. The theory, in addition, predicts that the agency cost of free cash flow is more likely severe in the firms with high cash flow generating ability but have low-growth opportunities due to the greater of free cash flows.

John and Mishra (1990) present a signaling model that assumes the information asymmetry between inside- and outside-traders about firms' future cash flows. They present that the stock price is a function of the observed information (i.e. investment level of a firm and the levels of insider holdings of a firm). The model demonstrates that in equilibrium, firms' managers (insiders) efficiently signal their private information at minimal signaling cost in order to maximize their wealth via the announcements of investment (capital expenditures) and via the levels of insider holdings. Those two signals can be used individually. Further, John and Mishra divide firms' growth opportunities into three groups:

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<sup>9</sup> Free cash flow is defined as excess cash flow after investing all positive-NPV projects (Jensen, 1986).

the growth firm that is defined as the firm which the marginal product of current investment is increasing in the firms' future cash flows; the mature firm which is the firm that the marginal product of current investment is constant in the firm' future cash flows; and the declining firm which is the firm that the marginal product of current investment is decreasing in the firms' future cash flows. Their model shows that the stock market interprets the investment signals regarding the firms' investment opportunities that are assumed known by the outsiders. The model suggests that the higher-than-expected investment announcements of the good-growth opportunity firms are concurrent with a positive stock price response, while the lower-than-expected investment announcements are vice versa. For the bad-growth opportunity firms, the model predicts that the market reaction of the investment announcements is negative for the higher-than-expected investment announcements, whilst is positive for the lower-than-expected investment announcements.

Anthony and Ramesh (1992) suggest that the capital expenditure information reveals to the capital capacity strategies that should be appropriate with the growth opportunity of a firm. As a result, the market reacts to this information by regarding of the firms' growth opportunities. They find that the unexpected capital expenditures of the growing firms have a positive response from the stock market while that of the stagnant firms have a negative response.

Pilotte (1992) explores the empirical evidences that the stock price reaction to stock issues is more negative for firms with low-growth opportunity than for firms with high-growth opportunities. Further, the stock price reaction to debt issues for firms with high-growth opportunities is not significant while it is a significantly negative reaction for debt issues of firms with low-growth opportunities.

Cooney and Kaley (1993) relax the assumption of Myer and Majluf (1984) that Cooney and Kaley allow the firms invest on negative- as well as positive-NPV projects for there growth opportunities instead of the nonnegative-NPV projects assumption of Myer and Majluf (1984). The owner managers have incentive to issue new stocks if they going to take negative-NPV projects because they will earn wealth from the dilution effect. Therefore, issuing stocks is not only coveys the negative news about overvalues of asset in place but also incorporate the positive information associated with a decision to issue. This implies that the existence of potential negative-NPV projects causes some stock issuing effects turn to be positive rather than negative. This model demonstrates that the greater the variability of possible new project value, the greater the possibility of a favorable response by the stock market to equity issuance. Their model suggests that high-growth opportunity firms are likely to have more uncertainty about the value of its investment opportunities than the value of its assets in place, that then are more likely to get a positive announcement effect for stock issues. The empirical study of Denis (1994) provides the results support the prediction of Cooney and Kaley (1993). Denis (1994) shows the significantly negative

reaction to equity issues in firms with low-growth opportunities while it is an insignificantly negative reaction in firms with high-growth opportunity firms.

Berger and Ofek (1995), Charoenwong et al., (2001) document a loss in firms' value from diversifications due to the sum of imputing stand-alone-values of individual business segments is higher than the actual value of diversified firms. Comment and Jarrell (1995) suggests that diversified firms fail to take advantage of the expected benefits for diversification while Lang and Stulz (1994) documents that the corporate diversification has negative relation with firm value. The empirical studies of the SET by Charoenwong et al. (2001) indicates that the diversifications of the SET's listed companies, on average, are concurrent with a loss in value of the firm more than twenty percents.

Rajan et al. (2000) document the inefficiency of investment and resource allocation from diversifications of a firm that the resources can flow toward the most inefficient division through the firm' s diversifications, and then lead to more inefficient investments and resource allocations.

## 2.3 Hypothesis Development

### 2.3.1 The Incremental Information Content of Cash Flows Beyond Earnings

The role of information of cash flows from operating activity in assessing share value is perceived as a useful piece information in predicting future cash flows of investors, which determines stock prices. This perception relies on the primitive concept of cash flows. The rationale is based on the relationship between share values and future cash flows of shareholders that they receive in term of dividends, which is typically paid in cash. The accounting literature examine the implication of the stock valuation process of cash flows information as similar to the implication of accounting earnings, i.e. as the indicator of investors' future cash flows.<sup>10</sup> However, cash flows form operation and earnings are provided by different accounting basis. The CFO are provided on a cash basis while earnings are the products of accrual accounting system that relies on an accrual basis. Under the cash basis, the effects of transactions or events are recognized and recorded when cash is received or paid, and these effects are reported in the periods where they occur. In contrast, under the accrual basis, the effects of transactions or events are recognized when they occur (whether cash is received or paid), and these effects are recorded and reported in the periods to which they relate. As a result, cash-based data are criticized due to timing and

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<sup>10</sup> The conceptual relationship between earnings and stock prices is explained by three critical links: link of current earnings and future earnings, link of future earnings and future dividends, and link of future dividends and stock prices that is via a valuation model (Beaver, 1998)

matching problems (Dechow, 1994; Charitou and Clubb, 1999). Accrual accounting is served to mitigate these problems of the cash basis. Accrual accounting process involves estimation, discretion, and judgment (e.g. depreciation, provisions, asset revaluation). Consequently, accruals can be viewed as the data conveying forecasts or expectations (Beaver, 1998) that potentially improve the cash flows forecasting ability of accrual-based information, e.g. earnings. Therefore, accounting earnings are perceived by the accounting profession to be the information provided about operating performance increment to the information provided by cash-based data, due to the accrual adjustment process (Rayburn, 1986).

The regulatory bodies, for example, FASB and IASC, have favored the accounting earnings. The FASB states in SFAC No.1 indicating to favor accrual accounting earnings as following: 'Information about enterprise earnings based on accrual accounting generally provides a better indication of an enterprise's present and continuing ability to generate favorable cash flows than information limited to the financial aspects of cash receipts and payments' (FASB, 1978, para.44). The IASC stated in the Framework for the preparation and presentation of financial statements that indicate to favor an accrual system as following:

'Financial statements prepared on the accrual basis inform users not only of past transactions involving the payment and receipt of cash but also of obligations to pay cash in

the future and of resources that represent cash to be received in the future.....' (IASB, 1997, Framework para. 22).

The facts represented by empirical evidence are consistent with the usefulness of accrual information that earnings are considered as the dominant measure in the stock valuation process (Lev, 1989).

However, earnings are argued due to the subjective nature of accrual accounting process. For example, earnings are manipulated through their accrual components and they have limitation about comparability. Prior researches find a relation between management compensation and changes in current accruals that indicate evidence on manipulation in accruals (Healy, 1985; DeAngelo, 1986; Jones, 1991). For comparability, there is an argument on the variety in accounting methods of the same accounting practices (e.g. depreciation, inventory valuation, provision). Since the General Accepted Accounting Principle (GAAP) allows more than one accounting method in the same accounting practices, the accrual process is subjected to arbitrary selection of the managers. It is possible that different accounting methods will be selected for the same economic transactions among the firms' manager. As a result, earnings are questioned with regard to the reliability and relevance due to its accrual components. The CFO, therefore, is examined as an alternative information aiding investors to assess a firm's performance because it is less manipulated than earnings and it reduces the effects of the managers' arbitrary selection

of accounting methods. Hence, CFO is presumed to be an appropriated measure, rather than earnings.

In summary, there are two perspectives to view the role of cash flows from operating activity in the context of setting stock prices. On one hand, the first perspective relies on the primitive concept of cash flows, and then investigates whether the accrual adjustment process provides additional information to the underlying cash flows information. This perspective investigates whether earnings have information increment to cash flows information (i.e. CFO and Working capital from operation)<sup>11</sup>. The institutional perspective, on the other hand, relies on the traditional accrual accounting process, and then perceives cash flows as information adding to information provided already by earnings. This perspective investigates whether CFO (and Working capital from operation) provide information increment to earnings.

Most previous studies have examined cash flows in term of the CFO only, whilst the accounting standard setting bodies propose that (cash flows reporting by a basis of the) cash flows statements could be useful for setting stock prices due to its ability to asses the firms' performance in generating future cash flows (FASB, 1987; IASC, 1993; ICAAT, 1994) that they stated:

'Financial reporting should provide information to help present and potential investors and creditors and other users in assessing the amounts, timing, and uncertainty of prospective

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<sup>11</sup> In traditional concept, working capital from operation is a measure of cash flows (Bowen et al, 1986).



cash receipts from dividends or interest and the proceeds from the sale, redemption, or maturity of securities or loans. The prospects for those cash receipts are affected by an enterprise's ability to generate enough cash to meet its obligations when due and its other cash operating needs, to reinvest in operations, and to pay cash dividends and may also be affected by perceptions of investors and creditors generally about that ability, which affect market prices of the enterprise's securities.' (FASB, 1978 para. 37).

'Thus, since an enterprise's ability to generate favorable cash flows affects both its ability to pay dividends and interest and the market prices of its securities, expected cash flows to investors and creditors are related to expected cash flows to the enterprise in which they have invested or to which they have loaned funds.' (FASB, 1978 para. 39).

Despite the fact that earnings and cash flows from operation provide information about future cash flows, cash flows from investing activities provides information about future cash flows that will be generated by new investments. Cash flows from financing activity provides information for assessing the ability of firms to generate cash to pay for existing debts (i.e. interest and principals) and reveals firms' ability to obtain additional funds. Thus, the present study incorporates CFI and CFF into the analysis to explore implications of cash flows data provided by the cash flows statements from firms on the SET. This study expects that cash flows (i.e. CFO, CFI, CFF) provide information incremented to earnings. Given that earnings is the major information useful in setting stock prices (Lev, 1989), if those cash flows convey information incremented to earnings that was

unknown to market before the announcement event, the market should react to the incremental information contained in the cash flows measures in the time of announcements. Therefore, the first hypothesis is the following.

**H1: Cash flows have incremental information content beyond earnings**

**2.3.2 The Impacts of a Firm' s Specific Factors on Incremental Information**

**Content of Cash Flows Beyond Earnings**

Previous studies find a relationship between unexpected stock returns and unexpected cash flows during announcement periods (Wilson, 1986 and 1987; Bernard and Stober, 1989) and during annual periods (e.g. Rayburn, 1986; Bowen et al., 1987; Ali, 1994; Ali and Pope, 1996; Biddle et al., 1995; Cheng et al., 1996 and 1997; Wang and Eichensher, 1998; Kanokporn Narktubtee, 2000). Hence, cash flows (in term of CFO in those studies) convey useful information to the markets and reflect the factors affecting stock prices. However, when earnings are incorporated into the analysis, some studies find that cash flows have no incremental information content beyond earnings while some studies find that it has. The lack of consistency in the results leads to questions about the effects of specific characteristics of a firm on the incremental information content of cash flows beyond earnings. Bernard and Stober (1989) presents that macroeconomic factors (i.e. Gross national products and Interest rate) and the mix of accrual components (i.e. account

receivable, account payable, inventory) have no effect. The following studies find an effect of earnings transitory on the association of the cumulative abnormal returns (hereafter by CAR) with earnings and cash flows that cash flows have more incremental information content beyond earnings when earnings are more transitory (Cheng et al., 1996; Charitou et al., 2000). Further, Wang and Eichersher (1998) document that cash flows have more incremental information content beyond earnings when earnings have low predictability. Black (1998) finds that life-cycle stages of a firm have impact on the value relevance of earnings and cash flows. This evidence points out that the firms' specific factors have effect on the informativeness of earnings and cash flows.

The present study, therefore, investigates the effects of firms' specific factors on the incremental information content of cash flows beyond earnings that the three factors are examined: (1) Transitory of earnings (2) Types of stock (regarding of firms' growth) and (3) The ratio of cash outflows from financing activity to cash inflows from investing activity (hereafter CFI/CFF). These factors are indicated in the prior research that they could have impact on the incremental information content of cash flows beyond earnings as discussed below.

### **2.3.2.1 Transitory of Earnings**

Previous studies provides evidence that CFO, as an alternative source of information about future cash flows, has more incremental information content beyond earnings when earnings are high transitory than when earnings are low transitory

(Cheng et al., 1997; Charitou et al, 2000). It is implied that the US market participants search for better alternative information other than earnings, especially, when earnings are high transitory. However, for the UK market as well as the SET, the evidence suggests that the market participants fixate on earnings even earnings are high transitory (Charitou et al., 2001; Kanokporn Narktubtee, 2000). Kanokporn Narktubtee (2000) examines CFO from annual statements of cash flows for the years 1995-1997, where the quarter statements of cash flows are not reported for the firms on the SET. This study uses different methodology and different examining periods, for the years 1999-2001 where the quarter statements of cash flows are required.

Further, this study examines not only CFO but also CFI and CFF that are available for investors. Since cash flows data are easy to obtain for the investors (i.e. via the statements of cash flows), I expect that they use this information as an alternative to earnings. Specifically when earnings are high transitory, cash flows should have more information content. Thus, I predict that cash flows have more incremental information content beyond earnings when earnings are high transitory than when earnings are low transitory.

**H2: Transitory of earnings have impact on incremental information content  
of cash flows beyond earnings**

### 2.3.2.2 Types of Stock

Previous research provides evidence indicating that types of stock (i.e. value and growth stocks) have implications for stock pricing (e.g. Fama and French, 1992; Lakonishok et al., 1994; Chan et al., 1995). Lakonishok et al. (1994) show that the market estimates growth rate of earnings and cash flows for growth firms higher than for value firms and that it has an impact on stock pricing. Further, Black (1998) hypothesizes based on Mayers' model, that earnings and cash flows are proxies of a firm's growth opportunities depending on the life cycle stages of a firm. The better proxy of growth opportunities of a firm in any stages should have more value-relevance than the other. Black (1998) finds that cash flows (CFO, CFI, CFF) have more incremental value-relevance beyond earnings for start up, growth, and decline stages relative to the maturity stage, while earnings have more value-relevance in the maturity stage whilst have less value-relevance in other stages. Charitou et al. (2001) documents the impacts of earnings growth on incremental information content of CFO beyond earnings. The theoretical model of John and Mishra (1990) suggests that the investment (capital expenditures) information conveys private information of the managers to the market. But the market participants interpret this signal conditionally on the firms' growth opportunities, that the higher-than-expected investment announcements of the good-growth opportunity firms are concurrent with a positive stock price response, whilst the lower-than-expected investment announcement are not. For the bad-growth opportunity firms, the model predicts that the market reacts

negatively to higher-than-expected investment announcements and positively to lower-than-expected investment announcements. Anthony and Ramesh (1992) finds that the unexpected capital expenditures of the growth firms have a positive response from stock market while those of the stagnant firms have a negative response. Kerstein and Kim (1995) show evidence of a positive relationship between the cumulative abnormal returns of stocks and the interaction effect of firms' growth opportunities with unexpected capital expenditure. Black (1998) indicates that the stock market participants favor (unfavor) the increases (decreases) of cash out flows from investing activity of firms in the start-up and growth stages (i.e. high-growth opportunity firms), whilst it is vice versa for firms in the mature and declining stages (i.e. low-growth opportunity firms). As a result, these studies suggest that a stock price reaction to investments is conditioned on firm' s growth opportunities. Furthermore, many theories and evidence from previous studies suggest that stock price reactions to security offerings are more likely to be positive for the high-growth opportunity firms than for the firms with low-growth opportunities (Myers and Majluf, 1984; Miller and Rock, 1985; Pilotte, 1992; Couney and Kaloy, 1993). Myers and Majluf (1984) suggest that stock price reactions to stock offers for high-growth opportunity firms are more likely positive than that for low-growth opportunity firms, due to the positive investment opportunities that all investors known. Miller and Rock (1985)'s model suggests that the outside financing of high-growth opportunity firms is likely reacted more positive by the investors relative to low-growth opportunity firms due to the greater of expected

finances for the high-growth opportunity firms. The free cash flow hypothesis (Jensen, 1986) predicts that a price reaction to financing is more likely positive for the high-growth opportunity firms than for low-growth opportunity firms for the reason that low-growth opportunity firms have more severity in the agency cost of free cash flows than high-growth opportunity firms. Cooney and Kaley (1993)' s model suggests that the high-growth opportunity firms are more likely to get a positive announcement reaction on stock issues due to the higher uncertainty about the value of its investment opportunities than the value of its assets in place. Further, empirical evidence indicate that the stock price reactions to issuances of stocks and debt is more negative for firms with low-growth opportunity than for firms with high-growth opportunities (Pilotte, 1992; Denis, 1994). However, the theoretical model of Myers (1977) suggests that the existent of risky debt leads the firm with valuable growth opportunities to avoid investments in positive-NPV projects in the future, that following with reducing the firms' value and then reducing of shareholders' wealth. Thus, the stock market likely reacts more negative to a debt issue of the high-growth firms than to a debt issue of the low-growth firms due to the (higher of) valuable growth opportunity. The theories and evidence mentioned above suggest that the growth opportunities of firms have impacts on the information contained in cash flows information.

Myers (1977) expresses that a firm is valued based on going concern concept, and then the firm's value is composed of the market value of assets in place and the present value of future growth opportunities:

**Price = BV + measurement error of asset in place**

**+ firm's growth opportunities**

The value of firms' growth opportunities is subjected to the firms' discretionary investment in the future whereas the value of assets in place does not depend on the firms' discretionary investment.

Relying on such concept, I classify types of stock into growth and value stocks, which consistent with Lakonishok et al. (1994). A growth stock is the stock that investors have recognized the growth opportunities of that firm and value it as inclusive of the growth opportunities. A value stock is the stock that investors consider and value those stocks as exclusive of the growth opportunities.

Types of stock might affect the informativeness of earnings and cash flows due to the fact that earnings and cash flows inform the market about the future cash flows differently among different growth opportunities of firms (Anthony and Ramesh, 1992; Black, 1998; John and Mishra, 1990). Therefore, I expect that stock types have effects on the incremental information content of cash flows beyond earnings that the hypothesis is stated by follows.

**H3: Types of stock have impacts on the incremental information content of cash flows beyond earnings**



### 2.3.2.3 The CFI/CFF ratio

The CFI/CFF ratio reveals the financial management of firms, specifically the firms' capital flexibility, which would affect the firms' future cash flows. When the ratio comprises of a negative CFI (i.e. net cash outflow for investments) with a positive CFF (i.e. net cash inflow from external financing), it represents the capital flexibility of firms that revealing to the uses of internal and external sources of fund for new investments. This economic interpretation might be useful for investors in pricing a firm's stocks. This study examines the cases of a negative net cash flow from investing activity (i.e. net cash outflow) with a positive net cash flow from financing activity (i.e. net cash inflow). In order to earn the positive value of the ratio that can facilitate an interpretation, I examine the negative net cash flows of investing activities by its absolute value. If the CFI/CFF ratio is more than one, it implies that the firms used some internal sources and some external sources to invest in new projects. Thus, the higher the ratio (is consistent with), the higher the firms' capital flexibility. In contrast, if the ratio is less than one, it implies that the firm has financed funds from external sources to invest in new projects and has used some of those funds in non-investing activities. A ratio (taken a value of) less than one reveals less capital flexibility, indicates that the firm has a higher risk of getting into financial problem relative to firms having a ratio larger than one.

As a result, the CFI/CFF ratio should facilitate investors in using relevance information (e.g. earnings and cash flows) to assess the firms' future cash flows. Since

earnings and cash flows facilitate investors to assess future cash flows of the firms, the CFI/CFF ratio should have an impact on such information. This study expects that the market favors the firms with a ratio larger than one than the firms with a ratio less than one. Thus, the incremental information content of cash flows beyond earnings will be impacted by the CFI/CFF ratio due to the differences between sign and/or magnitude of stock prices responses to cash flows information of the firms with different CFI/CFF ratio. The hypothesis is as follows.

**H4: The ratio of cash flows from investing activity to cash flows from financing activity has impacts on the incremental information content of cash flows beyond earnings**

Furthermore, the three factors examined in this study may have joint impacts on the incremental information content of cash flows beyond earnings. As a result, I also investigate the joint impacts of these factors with the following hypothesis.

**H5: Types of stock, the ratio of cash flows from investing activity to cash flows from financing activity and transitory of earnings have joint impacts on the incremental information content of cash flows beyond earnings.**