Fundamental Financial Factors Determining the Market Value of the Equity: An Empirical Study of the Listed Media and Publishing Firms in Thailand

Mr. Atinan Chitmenkongsuk

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Business Administration in Finance
Graduate School of Business
Assumption University
Academic Year 2010
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FUNDAMENTAL FINANCIAL FACTORS DETERMINING THE MARKET VALUE OF THE EQUITY: AN EMPIRICAL STUDY OF THE LISTED MEDIA AND PUBLISHING FIRMS IN THAILAND

By

ATINAN CHITMONKONGSUK

A Thesis submitted in partial fulfillment of the requirements for the degree of Master of Business Administration

Examination Committee:

1. Dr. Ismail Ali Siad (Advisor) .........................
2. A. Chatuporn Tangkathach (Co - Advisor) ..................
3. Dr. Witsaroot Pariyaprasert (Member) ...................
4. Dr. Chittipa Ngamkroeckjoti (Member) ....................... 
5. Dr. Ioan Voicu (Member) ........................
6. Asst. Prof. Saeng Sanguanruang (MOE Representative) ..................

Examined on: 4 November 2010

Approved for Graduation on:

Graduate School of Business
Assumption University
Bangkok, Thailand
November 2010

By: Mr. Atinan Chitmonkongsuk
Major: Finance
Thesis Advisor: Ismail Ali Siad, DBA
Academic Year: 2010

The Graduate School of Business, Assumption University, has approved this thesis as a partial fulfillment of the requirements for the Degree of Master of Business Administration in Finance.

Dean of the Graduate School of Business

Kitti Phothikitti, Ph.D.

THESIS EXAMINATION COMMITTEE

Chairman

Witsaroot Pariyaprasert, Ph.D.

Thesis Advisor

Ismail Ali Siad, DBA

Thesis Co-Advisor

Mr. Chatuporn Tangkathach

External Member

Assistant Professor Saeng Sanguanruang

Member

Ioan Voicu, Ph.D.

Member

Chittipa Ngamkroeckjoti, Ph.D.
ABSTRACT

There was one lesson to be learned from the past economic crises that financial disaster, to a large extent, were the horrible consequences of several factors such as deterioration in financial information reporting system, irregular accounting practice, and speculative nature of the market players. The issue was that in nursing financial system back to health required not only strong policies from the government sector to govern the system but also collaboration from investors to utilize financial data properly. As seen, ignorance of fundamental information pushed the investors toward risk. The underlying motivation of this study was then to increase awareness of fundamental analysis. To accomplish that, this research aims to clarify the ambiguity in the role of fundamental financial data in equity investment. The achievement helped to cast light on whether the SET players traded the media and publishing securities regarding fundamental data disclosed on the firm’s financial statements. To gain insight in such phenomenon, the primary task was to determine the relationship between fundamental financial variables and market value of equity.

Financial data pertaining to the variables of interest were gathered from the database of the Bloomberg Finance L.P. The final dataset contained the balance panel data of 100 firm-year observations, which derived from the time series data spanning 2004 to 2008 of 20 different SET firms listed under the Thailand media and publishing industry. Descriptive statistics was employed to describe the data characters while inferential statistics was adopted to draw the statistical implications from the estimated model. The residual income model was applied as the theoretical base to formulate the conceptual model and the regression analysis was used to study the relationship between the variables of interest, where The Fixed Effect Least-Squares method was exploited to estimate an empirical Model.

The result revealed that change in equity prices was found to be statistically significant and positively associated with the change in net operating working capital, investment in non-core business, and capital structure, while it is statistically significant and negatively associated with change in the book equity. In addition, equity price reactions to changes of other financial variables of interest i.e. net income, dividend, capital expenditure, and debt service capability were found to be statistically insignificant. These findings implied that, in addition to intangible factors, such as creative contents, artists, intellectual properties and the like, which were commonly realized as the value drivers, fundamental financial factors
played the key role for the SET players in shaping the prices of the media and publishing equity.

As the results signified that the SET players took account of financial statement data, thus, standard setters should encourage the listed firm to disclose more fundamental information since the transparency and accuracy of the data directly affected the SET investors. On the other hand, the firms’ managements jumped into a chance to employ these data to attract funds from the investors; this, consequently, maximized their firms’ values. Most importantly, the investors were recommended to take a great care when looking into financial statement data. They needed to enhance their knowledge relating to fundamental analysis rather than relying only on analysts, rating agencies, or technical analysis.

Furtherance studies could be conducted in several ways including alteration of variables of interest to intangible factors, for example, management team, human (artist), intellectual factors, and ethical standard; conducting the survey to see how the market perceived the usefulness and transparency of the corporate and accounting report.
ACKNOWLEDGEMENTS

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Atinan Chitmonkongsuk

4 November 2010
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CHAPTER 1

GENERALITIES OF THE STUDY

In this chapter, the researcher firstly introduces the overall concepts, concerns and motivation of the study. Exhaustive information of the industry background is also presented. Following the introduction of the study, the statement of problem is discussed. The third section demonstrates the objectives of the research. Next, the scope and limitations of the research are defined. Lastly, the chapter includes the definition of terms used.

1.1 Introduction of the study

Within the umbrella of this scrutiny, the researcher endeavors to gain understanding on the market’s behavior responding to the value of the stock traded by the media and publishing industry regarding the financial information of the variables disclosed on financial statements. It is doubtful whether the SET investors are defensive or enterprising. In other words, they trade stocks rationally based on fundamental information revealed on the firms’ financial statements or they trade stocks like gambling their money on one toss of the coin into the air. Such concern lights the author’s curiosity and inspires this research. It is widely realized that accounting statements are the important sources assisting the investors to visualize the firms’ financial situation and growth prospect (Stanga, 1976; Brigham and Houston, 2007). Nevertheless, to gather the rich harvest from financial statements, practical knowledge is of the essential equipment using to extract the benefits from the data. This fact addresses one question to itself that: *How much do the investors utilize these data to help them making decision?* The research question of this study arose in part from this question.

Regarding the industry of interest, to choose the media and publishing industry as the base in scrutinizing this phenomenon was from two major reasons. Firstly, the media and publishing industry is of importance itself regarding its influence and the growing rate of its companying with people, society, business, and economy (Hiebert and Reuss, 1988; Biagi, 1994; 2010; Briggs and Cobleyn, 1998; Ross and Nightingale, 2003; Flew, 2004; Singhal et al., 2004; Erni and Chua, 2005; Valdivia, 2006). The influence of the media on Thai society is also prominent as pointed out by TDRI researcher, Tangkitvanich (2004), that:
There are also positive and negative externalities due to spillover effects of the media on the society. This means that the broadcasting media left on their own is unlikely to produce desirable results for the society, and there are clear rationales for government intervention. (p. 5)

With bombarding effect of the mass media, in average, people spend 590 out of 1,440 day minutes with media through radio news, traffic report, newspaper, magazine, email, movies and so forth (Biagi, 2010). Due to the powerful feature in accessing to the nationwide and worldwide audiences, the mass media are used politically and economically to connect individuals to the government or business organizations (Biagi, 1994; 2010; Flew, 2004). As a result, large amount of money continually flows in this industry. Biagi (2010) documented that US. Presidential campaign spending on television utilized by candidates has been increasing every time since 1972, with the first formal figure of US$2 millions till the latest figure in 2008 of US$2.4 billion. Without specific amount of money reported, Nogsuan (2005) also indicated that Thai political candidates utilize much more television media in their electoral campaigning due to accessing abilities of this media and also the rapid growing numbers of household possessing televisions.

In terms of business, the statistical figure pertaining to the entertainment media was reported by Vogel (2007, p. xix) that “each year Americans cumulatively spend at least 140 billion hours and more than US$280 billion a year on legal forms of entertainment; and globally, total annual spending is approaching US$1 trillion”. According to industry tracking conducted by Veronis Suhler Stevenson (VSS) (2009), it was found increasing rates of the compound annual growth rate of each segment of the U.S. media industry during 2002 to 2007; pure pay internet and mobile service at 12.6%, business information service at 11.3%, cable and television at 10.40%, magazine at 2.8%, broadcasting television at 2.8%, entertainment media at 2.6%, broadcast and satellite radio at 2.3%, and newspaper at 0.3%. Additionally, VSS (2009) found that the media industry is the key factor driving overall growth rate of the U.S. communication industry (the communication industry is realized as one of the fastest growing sectors in the U.S. economy).

In Thailand, the business organizations employ the media to approach their customers. This has driven substantial amount of money flowing into this industry in the form of advertising spending. Under the assumption that source of revenue has influence on operating performance of firms, it was found that the core revenue of media firms (newspapers, radio
and television broadcasters) is all driven by advertising spending of their clients, where television broadcasters are ranked top performers (Pongsudhirak and Kamchuchat, 2003). As to Nielsen Media Research conducted annually, advertising spent during 2004 – 2008 for the Thailand media and publishing industry accounted for US$ 2,422 million, US$ 2,560 million, US$ 2,586 million, US$ 2,649 million, and US$ 2,576 million, respectively. In addition, regarding the market sharing among categories, seemingly, television broadcasters occupy the lion’s share, whereas the proportions of occupation among others are stable during these periods. Table 1.1 illustrates advertising spent through different Thai media from 2004 to 2008. Additionally, with the advancement of the informational and communicational technologies, the new media and the internet emerged and turned to be the global focal point. As documented in Global Information Technology Report of the World Economic Forum (2009), through global broadband infrastructure investment, the internet will be provided for the world’s population; as a result, job and new business opportunities will be created; knowledge and education will be delivered widely and globally; consequently, the world living standard will be enhanced. This was an important factor, which brought the researcher’s attention to the media and publishing industry. Another reason motivated the researcher to study this industry is going to be discussed in the paragraph next to this.

Table 1.1: Advertising spent between 2004 to 2008 - Thailand Media and Publishing Industry (US dollars-Million)*

<table>
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<tbody>
<tr>
<td>TV</td>
<td>1,358</td>
<td>1,440</td>
<td>1,534</td>
<td>1,540</td>
<td>1,472</td>
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<td>TRANSIT</td>
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<td>28</td>
<td>28</td>
<td>39</td>
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<tr>
<td>IN-STORE</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>TOTAL INDUSTRIES</td>
<td>2,422</td>
<td>2,560</td>
<td>2,586</td>
<td>2,649</td>
<td>2,576</td>
</tr>
</tbody>
</table>


Note:
* The data in THB are gathered from the survey conducted by The Nielsen Company (Thailand) during 2004 – 2008, then they are converted to US$ using the mid exchange rate of 34.74 (THB against US$) as of December 31, 2008.
According to the definition given by The Stock Exchange of Thailand (SET) (2009), the media and publishing industry comprises the business corporations engaging in the production and distribution of media and publishing contents: entertainment media (sound recording, motion picture, radio and TV broadcaster), publishing, and printing house. The definition given by the SET is also in accordance with the definition of the content and media industry given by Working Party on Indicators for the Information Society (WPIIS), which is the working party under supervision of Organization for Economic Co-operation and Development (OECD). As discussed by TDRI (2009), WPIIS defined the content and media industry according to the latest International Standard Industrial Classification (ISIC Revision 4.0) developed by United Nations in the year of 2008, where an economic activities engaged by the content and media industry involved the following:

The production (goods and services) of a candidate industry must primarily be intended to inform, educate and/or entertain humans through mass communication media. These industries are engaged in the production, publishing and/or the distribution of content (information, cultural and entertainment products), where content corresponds to an organized message intended for human beings. (United Nations, 2008, p. 279)

The lists of economic activities in accordance with ISIC Revision 4.0 are tabulated in the below table.

Table 1.2: Content and media sector

<table>
<thead>
<tr>
<th>ISIC Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>581</td>
<td>Publishing of books, periodicals and other publishing activities</td>
</tr>
<tr>
<td>5811</td>
<td>Book publishing</td>
</tr>
<tr>
<td>5812</td>
<td>Publishing of directories and mailing lists</td>
</tr>
<tr>
<td>5813</td>
<td>Publishing of newspapers, journals and periodicals</td>
</tr>
<tr>
<td>5819</td>
<td>Other publishing activities</td>
</tr>
<tr>
<td>591</td>
<td>Motion picture, video and television programme activities</td>
</tr>
<tr>
<td>5911</td>
<td>Motion picture, video and television programme production activities</td>
</tr>
<tr>
<td>5912</td>
<td>Motion picture, video and television programme post-production activities</td>
</tr>
<tr>
<td>5913</td>
<td>Motion picture, video and television programme distribution activities</td>
</tr>
<tr>
<td>5914</td>
<td>Motion picture projection activities</td>
</tr>
<tr>
<td>592</td>
<td>Sound recording and music publishing activities</td>
</tr>
<tr>
<td>60</td>
<td>Programming and broadcasting activities</td>
</tr>
<tr>
<td>6010</td>
<td>Radio broadcasting</td>
</tr>
</tbody>
</table>

It is viewed that the media and publishing industry is the content or informational industry involving content creators, creative artists, technology, and the like (Biagi, 1994; 2010; Berman, 2004; Flew, 2004). This logically addresses one fact that human and intangible capital are of the essence to the growth of this industry. In accordance with Berman (2004, p. 37), “media companies survive or fail in 2010 based not just on creative content, but on creative intelligent – about customers, markets, and the value of digital assets”. Thus, to some extent, as the valuation of the media firm is directly driven by human and intellectual assets, the variability of these factors perceived by investors will straightforwardly influence the stock performance. If these intangible factors are the key drivers of the industry’s performance that the investors took into account, then, what was the role of fundamental financial factors as realized by the investors? This question catalyzed another curiosity and after accompanying by the first question mentioned earlier, they all conspired to formulate the main research question:

*Do the investors trade the media and publishing security regarding fundamental financial factors disclosed on the accounting statements?*

The existence of the relationship found between stock price and the selected financial variables will lend the idea supporting the role of such financial variables playing on the investors’ opinion about the firms’ stock. Whereas, the inexistence implies that the information related to some other factors such as the firms’ human and intellectual assets have the influences on the investors’ views beyond fundamental factors.

Next, the research discusses the role of fundamental financial statement variables in the equity market. After that, the brief picture of the Thailand media and publishing industry is demonstrated.
1.1.1 Market value of the equity and fundamental financial variables

To understand the effect of financial factors on security price, corporate financial principle hold the efficient market hypothesis (EMH) that each security is priced correctly according to publicly pertinent information (Keown et al., 2003; Brigham & Houston, 2007). Even though, there are evidences showing that “the strong form EMH did not hold, because those who possessed inside information could and did (illegally) make abnormal profits” (Brigham & Houston, 2007, p. 167), the benefit of this hypothesis has already functioned. At least, it has been acting as a reminder to the stock investors about the influences of information.

Given the sophistication of financial world, there are a number of information the researchers believe that they can affect the stock investor rationally and psychologically. Accounting information is among them with different key reasons.

Firstly, it is based upon the fact that the accounting numbers on the financial statements straightforwardly represents a firm’s body and health (Meigs and Meigs, 1993; Brigham and Gapenski, 1997; Stowe et al., 2002; Brigham and Ehrhardt, 2005; Damodaran, 2002; 2006; Penman, 2007; TAS1, 2009). These corporate reports, thus, are the most appropriate area, where the investors should anchor their first attentions to form understanding about the firm they are going to invest. Value of the firm perceived by the investors through these reports then will shape their opinions on the firm stock price.

Secondly, it is the source providing basic data facilitating financial analysis (Damodaran, 1996; 2002; 2006; Brigham and Ehrhardt, 2005; Penman, 2007). The financial analysts, who have terrific influence on financial market, also place their reliance on the financial information disclosure of a company; good or bad financial health of the firm, which is perceived by the analysts via accounting reports, is able to catalyze stock price fluctuation (Stanga, 1976).

Thirdly, today, many firms are likely to employ financial reports as the tools to show the investor about the firm outstanding performance by adding voluntary financial items, for example, financial ratio and the like into the reports (Abdullah and Ismail, 2008). Some firms use the financial disclosure to attract fund and signal firms’ qualities while some other large and complicated firms use it to simplify their complexity and make it easy to be understood by the investors (Marston, 2003).
Being surrounded by these circumstances, the importance of accounting information and its effect to the users of these reports are widely and globally realized by related parties, regulators, and researchers.

In the regulator side, it can be seen through the establishment of the organization directly being responsible for constituting accounting standards, for instance, Financial Accounting Standard Boards (FASB) of the United States of America or the Federation of Accounting Professions (FAP) of Thailand. The basic intention of this is not only to provide the mutual principles among the different corporations but also to promote transparency of the firm managements. The severity of the past financial disaster to the investment and economics system due to accounting malpractices triggered special attentions from many countries including Thailand. The lesson learnt conspires to help the responsible parties to achieve the enhancement of the financial reporting system. In Thailand, accounting information disclosure was re-established to regain investors’ confidences after economic crisis in 1997. Chalardpodjanaporn (2008) documented the following:

   After the financial distress, there has been a great improvement in TAS. During 1999-2000, ICAAT issued the accounting conceptual framework and many new accounting standards. All the new TAS are based on International Accounting Standards (IAS) with only a few exceptions. (p. 1)

   …In addition to ICAAT, SET takes part in boosting confidences and trust in the Thai capital market. In an attempt to develop and ensure good governance of listed companies, SET enforced good governance as well as listed company disclosure rules and guidelines. (p. 2)

On the researcher side, communicating accounting information has been in concerns for long time. Goch (1975) discussed the following issue:

   …there is a need for attention to be turned towards communicating financial information to workpeople, managers, investors and others who have not necessarily got the kind of expertise needed for understanding the more complex kinds of accounts that are now being published… there is a need for it to be explained in unambiguous terms. (p. 216)
In response to the concerns, wide ranges of researches had been conducted to scrutinize corporate report disclosure practices and also to investigate the existence of the relationship between accounting information and stock price. In that early stage, Stanga (1976) reported that the disclosure practices amongst firms of the sample industry was found to be indifferent; in terms of the contents, it seemed the small firms tried to disclose the information following the leading firm rather than information needed of the investors. Epstein and Pava (1995) studied shareholders' perceptions on the usefulness of the management discussion and analysis section (MD&A) of annual reports and revealed that the shareholders perceived the usefulness of the disclosure even the more disclosing also provided competitive disadvantage to the firm; in all, they concluded that this section was a tremendous useful tool of investment; however, in such period of time, the investor overlooked its usefulness, and relied on the information disclosed on financial statements. Thus far, the impact of financial statement information on stock price has been widely observed as reflected in the works of Landsman (1986), Lev (1989), Graham and King (2000), Barth et al. (2001), Ibrahim et al. (2002), Hand (2003), El Shamy and Kayed (2005), Ragab and Omran (2006), Rahman and Mohd-Saleh (2007), Tan and Lim (2007), and Pirie and Smith (2008). The popularly fundamental variables observed amongst these papers to see their influences on equity price are book equity and earnings, and the results indicate that these variables are value relevant.

The current paper extended those researches by adding into the model some other fundamental variables that theoretically drove cash flows and value of the security. The variables of interest in this paper include book equity, earnings (net income), dividend, net operating working capital, capital expenditure, debt service capability, investment in non-core business, and capital structure. Even the results in this paper were concluded to be consistent with prior researches that fundamental financial statement information are statistically and significantly value relevant, the uniqueness of the current findings have been standing out from the rests.

The statistically and significantly negative relation between book equity and market equity price demonstrate the existence of informational asymmetry that causes the firms financing strategy to be in accordance with pecking order theory. In this regard together with the presence of statistically insignificant association between the market equity value and other fundamental variables of interest (net income, dividend, capital expenditure, and debt service capability) illuminates the labor – intensive characteristics of the sample industry. This
finding is consistent with the common belief that non-financial factors have significant influences on the investors’ opinions relating to stock price of the media and content industry. Also, the current fact appears to be consistent with the study of Amir and Lev (1996), who found that that financial statement variables (book equity and earnings) are irrelevant to equity price based on their investigation of the wireless communication firms (intangibility-intensive industry). Additionally, the results also imply that the investors may realize the theoretical shortcoming of these financial factors and, in turn, causing them to ignore those factors. To some extent, the results signal that the investors may not fully rely on the financial information released and use it just as complimentary information for security valuation.

1.1.2 Background of the Industry

The evolution of Mass Communications in Thailand has taken centuries after the first printing machine taking its initial run in Ayudhya era; the new technology emerged has transformed the first print into a book and then a newspaper until today broadcasting system and new media of cable television and the internet (Pongsudhirak and Karnchuchat, 2003).

This paper aims to study only the SET firms having their economics activities involved mass communications. Those firms are listed on the SET under the media and publishing industry and can be classified into 5 groups according to ISIC Revision 4.0. Table 1.3 maps all firms of interest with the ISIC classification based on their economic activities. The firms’ tickers are also illustrated (Full names of entire sample firms are presented on Table 4.1 of this paper).

Table 1.3: Illustration of the Thailand media and publishing firms and their economic activities categorized according to ISIC Revision 4.0

<table>
<thead>
<tr>
<th>Firm Ticker</th>
<th>Economic Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>581</td>
<td>Publishing of books, periodicals and other publishing activities</td>
</tr>
<tr>
<td>APRINT</td>
<td>Publishing</td>
</tr>
<tr>
<td>EPCO</td>
<td>Other publishing activities</td>
</tr>
<tr>
<td>MATI</td>
<td>Publishing, Newspaper</td>
</tr>
<tr>
<td>NMG</td>
<td>Publishing, Newspaper</td>
</tr>
<tr>
<td>POST</td>
<td>Publishing, Newspaper</td>
</tr>
<tr>
<td>SE-ED</td>
<td>Publishing</td>
</tr>
<tr>
<td>SMM</td>
<td>Publishing</td>
</tr>
<tr>
<td>SPORT</td>
<td>Publishing, Newspaper</td>
</tr>
<tr>
<td>TBSP</td>
<td>Other publishing activities</td>
</tr>
<tr>
<td><strong>591</strong></td>
<td><strong>Motion picture, video and television programme activities</strong></td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>TONHUA</td>
<td>Publishing, Newspaper</td>
</tr>
<tr>
<td>APRINT</td>
<td>Television programme activities</td>
</tr>
<tr>
<td>FE</td>
<td>Television programme activities</td>
</tr>
<tr>
<td>GRAMMY</td>
<td>Motion picture (Producer, Distributor), Television programme activities</td>
</tr>
<tr>
<td>LIVE</td>
<td>Television programme activities</td>
</tr>
<tr>
<td>MAJOR</td>
<td>Motion picture (Exhibitor)</td>
</tr>
<tr>
<td>MATCH</td>
<td>Television programme activities</td>
</tr>
<tr>
<td>MEDIAS</td>
<td>Television programme activities</td>
</tr>
<tr>
<td>MPIC</td>
<td>Motion picture (Distributor)</td>
</tr>
<tr>
<td>NMG</td>
<td>Television programme activities</td>
</tr>
<tr>
<td>PFCB</td>
<td>Television programme activities</td>
</tr>
<tr>
<td>POST</td>
<td>Television programme activities</td>
</tr>
<tr>
<td>PSAAP</td>
<td>Video/Home entertainment (Producer, Distributor)</td>
</tr>
<tr>
<td>RS</td>
<td>Motion picture (Producer, Distributor), Television programme activities</td>
</tr>
<tr>
<td>SE-ED</td>
<td>Television programme activities</td>
</tr>
<tr>
<td>SMM</td>
<td>Television programme activities</td>
</tr>
<tr>
<td>SPORT</td>
<td>Television programme activities</td>
</tr>
<tr>
<td>WAVE</td>
<td>Television programme activities</td>
</tr>
<tr>
<td>WORK</td>
<td>Television programme activities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>592</strong></th>
<th><strong>Sound recording and music publishing activities</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>GRAMMY</td>
<td>Producer, Distributor</td>
</tr>
<tr>
<td>PSAAP</td>
<td>Distributor</td>
</tr>
<tr>
<td>RS</td>
<td>Producer, Distributor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>60</strong></th>
<th><strong>Programming and broadcasting activities</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>BEC,</td>
<td>Radio &amp;TV broadcaster</td>
</tr>
<tr>
<td>GRAMMY</td>
<td>Radio broadcaster</td>
</tr>
<tr>
<td>MCOT</td>
<td>Radio &amp;TV broadcaster</td>
</tr>
<tr>
<td>RS</td>
<td>Radio broadcaster</td>
</tr>
</tbody>
</table>

Source: Developed by the author based on United Nations (2008). Statistical papers:

The background of the industry presented below is based on the industry fact provided in several sources: media researches conducted by Thailand Development Research Institute (TDRI) and The Thailand Research Fund, Key Statistics of Thailand 2009 together with other media statistics collected by Statistical Forecasting Bureau of National Statistical Office (NSO), statistical data surveyed by Nielsen Media Research, the survey information gathered in 2009 under the cooperation between Assumption University of Thailand (AU) research center and The Magazine Association of Thailand (TMAT), and industry information discussed in the firms’ annual reports for the year 2008. In reporting numerical data of Thai
currency, the researcher employs the mid exchange rate of 34.74 (THB against US$) as of December 31, 2008 to convert the local currency into US dollars.

1.1.2.1 Publishing of books, periodicals and other publishing activities

According to ISIC Revision 4.0, the economic activities in this class involved all kinds of publishing: book, magazine, newspaper, and other publishing activities.

To utilize their resources effectively in generating cash flow to the firms, most of the firms listed under media and publishing industry tend to engage in other media and publishing businesses other than their core businesses. The firms mainly run publishing businesses comprising of APRINT, EPCO, MATI, NMG, POST, SE-ED, SMM, SPORT, TBSP, and TONHUA. The full titles of each firm were presented on the Table 4.1, Chapter 4 of this research.

APRINT and SE-ED are generally known as book and magazine stores that are able to maintain their dominance in the market. The firms do not only sell other publishing house’s products but also publish their own books and magazines. The revenues of the firms in addition to revenues from selling include revenues from selling advertising spaces in the magazines.

MATI, NMG, POST, SPORT, and TONHUA are widely known as the key newspaper presses of Thailand among several other non listed presses. According to Pongsudhirak and Karnchuchat (2003), the presses in Thailand market can be classified into four categories: the daily Thai newspaper, the daily foreign newspaper, the daily business newspaper, and the business newspaper. NMG and POST are the key English presses and TONHUA is known as the Chinese press, whereas SPORT is the key sport news journalistic corporation. In addition to releasing the newspapers and acquiring stories for their own magazines and pocket books, some of these press firms (NMG, POST, SPORT) also engage in the productions of television and radio news programming to support the free and subscribed television operators (2008 Annual report of NMG, POST, SPORT). The key revenue of the press, thus, is from selling the newspaper and from selling advertising space, whereas the majority was from the latter (Pongsudhirak and Karnchuchat, 2003).
SMM is the firm owning copyrights and manufacturing pocket books of Chinese fiction and comics. The key revenues of SMM are from selling these books. According to industry review during the periods of 2004 to 2009 by the Publishing Association of Thailand, book and magazine publishing business has been growing continually over years since 2004. As to such report, the industry sale revenues for the year 2004 - 2008 accounted for US$ 377; US$ 432; US$ 507; US$ 527 and US$ 535 million, respectively. According to the survey conducted in 2009 under the cooperation between AU research center and The Magazine Association of Thailand (TMAT), almost 60% of the respondents involved reading activities more than last year and their purchasing demands were also influenced by the advertising on the magazine. This supports the fact found by Nielsen Media Research 2009 that the newspaper and magazine are still popularly employed by advertising agencies as the advertising media on which the advertising spending accounted for US$ 407 million and US$ 156 million, respectively. In general, these publishing houses have their owned printing presses. However, some firms choose to outsource printing work by sending out a book or a magazine for printing process (Biagi, 2010). Certain firms under media and publishing industry (EPCO and TBSP) aim to sell printing service to support these publishing houses.

1.1.2.2 **Motion picture, video and television programme activities**

Regarding ISIC classification, the firms discussed in this class can be categorized into two groups, which commit two major activities. Firstly, the group of producer and distributor; the firms in this group have their economic activities involving film and programming production, post production, and distribution, where these operations support the television broadcasters, home entertainment firms, and exhibitors. Secondly, the group of motion picture exhibitors; in this group, the firms run business relating to motion picture projection, so called, exhibitor or theater, whereas, television broadcasters were separately classified in another group (the group of programming and broadcasting activities).

Television programming typically can be produced by television broadcasters themselves or these operators may choose to sell air time to outsiders; the programming produced by the station mostly is or relates to news content while the entertainment programming is outsourced (Tangkitvanich, 2004). However, the external operators may also produce the programmes involving both news and entertainment contents for the television stations, and normally under the mutual agreement, allowing these outsiders to further sell air time for advertisement to advertising agencies, manufacturers or other business entities. The listed
firms of interest that run this business include FE, LIVE, MATCH, MEDIAS, PFCB, WAVE, and WORK. To utilize resources effectively, as discussed, the firms under media and publishing industry engage other media and publishing businesses other than their core businesses. The publishing firms that also produce the television and radio programmes are APRINT, NMG, POST, SE-ED, SMM, and SPORT. The key recording firms that also produce programmes are GRAMMY and RS.

The significant sources of revenues nourishing the media and publishing operators are from selling advertising agencies the right to advertise through those media; this, to a certain extent, reflects another side of the fact that those media actually are the advertising tools of advertising agencies or manufacturers. Biagi (2010) discussed that programming surrounding advertisements is produced to facilitate advertisers to approach audiences. The more attractive programme would attract more audiences. Finally, this possibly allows manufacturers capturing the biggest potential customers. The programming together with the nationwide televised feature make the television a powerful advertising medium and caused it the highest charge of advertisement; nevertheless, most of manufacturers are willing to pay (Biagi, 2010). As reported by Tangkitvanich (2003), in Thailand, television air time in certain periods was sold up to US$ 12,100 for a minute of advertising. The similar figure was also reported by Nielsen Media Research conducted in 2007. As also seen in Table 1.1, advertisement is one of very high value businesses with reference to yearly advertising spending.

Motion picture is the imaginative business that can capture a great deal of money from the audience in Thailand. The operators in Thailand’s dream market comprise the operators in the field of production, distribution, and exhibition covering listed and non-listed firm. The influential production and distribution performers in Thai market can be categorized into two groups. The first group is subsidiaries of the big studios, where their headquarters were overseas such as Columbia TriStar Buena Vista (Thailand) Ltd. and Fox Warner (Thailand). The second group is the Thai firms, which the key performers of this group are such as MPIC, GRAMMY, RS, Five Stars, and Sahamongkol Film. The first three firms are the sample firms of this paper. Such foreign distributors typically market and sell the film produced by their parent studios, while MPIC acquires the film’s right from other independent overseas studios, then distributes to domestic exhibitors and/or further market and sell such right to show the foreign movies to other media operators such as free TV,
cable, and so forth. GRAMMY, RS and the rest of Thai distributors as mentioned either produce or distribute the Thai films released by their studios. Thus, GRAMMY, RS and the rest of domestic distributors can also be considered as the movie production units of this industry. From another view, MPIC is like the film importer, whereas GRAMMY, RS and the rest are considered as the exporters. The income flowing to these distributors is in the forms of partial box office revenue and income from ancillary right. Biagi (2010, p. 149) described ancillary rights as “marketing opportunities related to a movie, in addition to direct income from the movie itself”. Ancillary rights also include the right to sell showing permission to subscription television, cable, free television network, the right to reproduce the product in other forms of VCD or DVD, and the right to sell VCD/DVD reproduction permission to home entertainment operators (such as PSAAP). The major cost of the distribution business is the cost of acquiring a film right and promotional expense, whereas its revenue is from the distribution fee charged to the exhibitors and income from administering ancillary right.

In Thailand, there are two leading exhibitors in the motion picture industry. The biggest one is among the sample firms of this paper, the Major Cineplex Group. Its potential competitor is the non-listed firm, SF Cinema. In addition to long term investment in constructing the theater, there is no other material cost for exhibitors. As documented in 2008 annual report of the Major Cineplex, the cost of acquiring the movie right and movie promotional cost go to the distributor, while the revenue from the box office will be shared equally between the distributor and the exhibitor.

Since the process involves many parties, making one film is very costly (Biagi, 2010). In U.S., it costs approximately US$96 - US$107 millions for one Hollywood film (Vogel, 2007; Biagi, 2010). As expressed in 2008 annual reports of GRAMMY and RS, Thai movie follows suit but in a smaller scale at the average cost of US$ 1.1 million.

However, the industry is still very attractive regarding theatrical market statistics reported by Motion Picture Association of America (MPAA). According to MPAA (2009), only in U.S. and Canada, the domestic box office keeps growing every year; the revenues are US$9.2, US$9.6, US$9.79, and US$10.6 billion in 2006, 2007, 2008, and 2009, respectively, whereas worldwide box office for all films reaches US$29.9 billion in 2009, up 7.6% over 2008’s total; as reported, the worldwide performance is in the same increasing trend of US$23.1, US$25.5, US$26.3, US$27.8, and US$29.9 for 2005, 2006, 2007, 2008, and 2009, respectively. For some successful releases or the top box office performer, such immense cost
can be covered by opening weekend gross receipts or even a single opening day ticket sales (Vogel, 2007). In 2009, the top 25 Hollywood films earn up to US$120.5 – US$402.1 billion in total, as to only the U.S./Canada box offices (MPAA, 2009). On the same track, generally, a Thai film earns approximately US$ 1.4 million and up to US$ 7 million for the top performance based on Thailand box offices revenues as reported in 2008 annual reports of GRAMMY and RS. These performances account for only the box office revenues excluding the other related benefits from selling the movie’s right internationally and other benefits from ancillary rights.

1.1.2.3 Sound recording and music publishing activities

Recording business operator organizes and sells a musical repertoire of an artist. The two key performers in Thailand musical market are GRAMMY and RS. These firms are generally known as the musical producers that also manage their own retail stores. In general, after releasing a new album, recording products will be distributed throughout the country to retailers. The musical promotion will be organized through live concerts and through the radio stations that the firms get the concessions to manage. Hence, in addition to the earnings from sell revenues, the firms also earn from arranging the live concerts and managing the artists through events organizing.

Biagi (2010) mentioned that growing trend of vertical integration is widespread over media industry; media firms try to control related media intending each part supporting each other. Similarly, it is found that the recording firms try to expand their businesses vertically to manage radio stations by participating in radio station concession bidding (Tangkitvanich, 2004). As researched, Tangkitvanich (2004) also found that more often than not, the recording firms holding the concession to manage the radio station are likely to have their own recording products broadcasted rather than others of independent artists. Managing the radio station does not only benefit the firms in terms of widening the promotional channel of the firm’s new album but also generates the revenue from selling radio advertising spots to advertising agencies. In 2008, RS earned 57% of total revenues from recording business and related activities; GRAMMY earned 69% of total revenues from recordings, live concerts, and event organizing and also the revenue from advertising spots accounted for 9%.

In addition to the retail stores managed by these musical producers, one of the leading musical stores widely known in recording market is the store managed by PSAAP. PSAAP is
one of the listed firms under media and publishing industry that is known as the recording and film distributor (home entertainment). Owning 236 retailed branches throughout the country, PSAAP also hold the right to reproduce and sell overseas musical recordings. Thus, different from those recording firms, PSAAP as the musical store mainly relies on the revenues from selling (91% of the firm’s total revenues).

1.1.2.4 Programming and broadcasting activities

In accordance with ISIC Revision 4.0, this class is further divided into Radio broadcasting and Television broadcasting.

Radio broadcasting:

Radio was emerged in Thailand in the year of 1933 and was mainly used politically by the government; the establishing of Thai Television Company limited as the first state enterprise broadcaster revolutionized radio industry by allowing private sector to manage the station (Pongsudhirak and Karnchuchat, 2003). According to these two TRF researchers, nowadays, there are 524 radio stations on the air comprising of 273 FM radio stations and 173 AM radio stations; all of them are owned by the state enterprise or the government; the owners manage some of these stations and also let them are managed by the private sectors under the short-term concession granted. Based on the research of Pongsudhirak and Karnchuchat (2003) and 2008 annual reports of BEC, GRAMMY, MCOT, and RS, the revenue of the radio station is from selling advertising time to ad agencies or manufacturers.

As to Biagi (2010), radio is once recognized as a reward of a day before the conquest of television. Nevertheless, lacking of a vision feature, radio in the present day is outpaced by television. As reflected in the statistical figure surveyed by NSO (2008), it is found declining rate in listening to the radio of Thai citizen aged 6 years up (31.1% in 2008 comparing to 56.7% in 1989 figure), while increasing rate is found in television viewers (94.6% in 2008 comparing to 80.4% in 1989). However, radio still is considered as a lower cost potent device in comparison to television media in the eyes of the firm running recording business and also is realized by advertising agencies as an efficient channel to penetrate advertising spot to a specific group of audience. These can be seen through the efforts of GRAMMY and RS in occupying the radio concession from the government. GRAMMY occupies 4 FM radio stations, while RS occupies 2 FM radio stations with intentions to promote their new releases
and grab music lover market. In general, radio stations benefit GRAMMY and RS as the concessionaires in two ways. Firstly, it is used by them to promote their products. Secondly, the stations generate the advertising revenues to these firms. Among the sample firms under investigation of this research, there are four listed firm that manage the radio stations: BEC (occupies 2 FM radio stations), GRAMMY (occupies 4 FM radio stations), MCOT (occupies 62 FM radio stations), and RS (occupies 2 FM radio stations).

Television broadcasting:

Television history in Thailand began in 1955 according to the order of the Thai government at that time; it was claimed as the political tool utilized by the government to cope with the political criticism of the newspapers, and also was claimed as one of the several attempts made to reflect country civilization (Pongsudhirak and Karnchuchat, 2003; Dilokvanich, 2005). Currently, there are 6 free channels of televisions in Thailand (Pongsudhirak and Karnchuchat, 2003; Tangkitvanich, 2003; Tangkitvanich et al., 2007). Amongst six television broadcasters, there are two stations run by the listed firms under study: Channel 3 and Modern 9. Table 1.4 documents related information about these television broadcasters.

Table 1.4: Thai free to air television broadcasters

<table>
<thead>
<tr>
<th>Television Channel</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel 3</td>
<td>BEC manages the station under the concession granted from MCOT</td>
</tr>
<tr>
<td>Channel 5</td>
<td>The Royal Thai Army manages the station</td>
</tr>
<tr>
<td>Channel 7</td>
<td>Bangkok Broadcasting and Television Co., Ltd. manages the station under the concession granted from the Royal Thai Army</td>
</tr>
<tr>
<td>Modern 9</td>
<td>MCOT public company limited manages the station</td>
</tr>
<tr>
<td>NBT</td>
<td>The central government manages the station</td>
</tr>
<tr>
<td>TPBS</td>
<td>A legal vehicle, namely Thai Public Broadcasting Service, is established to manage the station by virtue of the Thai Public Broadcast Service Act enforced on January 15, 2008</td>
</tr>
</tbody>
</table>


In addition to the free television, subscription television operators also try to penetrate to Thailand televisual market. In this Pay television segment, television programming is televised through cable or satellite. Currently, there is only one national operator, United
Broadcasting Corporation (True vision). The rest are regional operators comprising 520 business runners approximately (Tangkitvanich et al., 2007).

Due to its accessibility to the nationwide audiences, television is widely realized by advertising agencies and manufacturers as the most potential merchandising vehicles (Biagi, 2010). Similarly, Tangkitvanich (2003) and Tangkitvanich et al. (2007) also posited that radio and television are the most influential media impacting the Thai audiences regarding their penetrating abilities, affordability and wide spreading of Thai people owning radio and television set. According to Tangkitvanich (2003), based on the figure surveyed of Thai citizen aged 12 years up, 86% and 36% of Thai citizens spend time each day with television and radio, respectively; the percentages are higher than the percentage of people spend time on reading a newspaper (21%) and on other media (13%). National Statistical Office (NSO) of Thailand also reported the same situation in the latest survey of the television media for 20 years period of 1989 to 2008. NSO revealed that the numbers of Thai citizens viewing television increase up to 94.6% in 2008. The viewing rate as such for both male and female are increased in comparison to 1989 figure of 80.4%.

Unlike subscription television, the free to view television does not charge viewing fee to the audiences. Thus, as pointed by these scholars, the majority of television and radio’s revenues are from selling advertising time during broadcasting the station programming to advertising agencies or manufacturers (Pongsudhirak and Karnchuchat, 2003; Tangkitvanich, 2003; Biagi, 2010). Its penetrating power to the country wide audiences drives a television to the top rank of the advertising channel utilized by advertising agencies (Tangkitvanich, 2003; Nielsen, 2004; 2005; 2006; 2007; 2008).

In 2007, television advertising revenue in the U.S. totals nearly US$40 billion (Biagi, 2010). As reported by Tangkitvanich (2003), the total advertising spending on all media in 2002 accounts for US$ 1,762 million; it is increase 15% from 2001 and it is likely to grow continually in the future; among other media, television and radio contribute the biggest portion of advertising spending amounted to US$43,459 million or 71% approximately of overall market. The latest figures as reported by Nielsen Media Research 2008, total advertising spending on television and radio still outpaces other media with the total amount of US$ 1,672 million; it is 65% of overall advertising spending of US$ 2,576 million.
1.1.2.5 Other information service activities

As to ISIC Revision 4.0, this category comprises of the economic activities relating to news agency activity and other information service. Because news agency activity is one of the economic activities serviced by the newspaper operators, so, in this paper, the researcher includes this activity in the class of publishing activities as prescribed in the item “1.1.2.1 publishing of books, periodicals and other publishing activities”. Now, the research discusses another form of media.

New Media

The emergence of internetworking as a result of new technology do not only alter the way people consuming information but also globally causes transformation of the traditional media into the new media; such development impacts the business aspect and the economic structure of the media (Biagi, 2010). The information and communication technologies, which directly affects the development of the new media turn to be the global focal point. This is prominently reflected from the establishment of the specific world working group under the World Economic Forum to oversee the project.

As per Flew (2002), new media is the convergence of technology, network, and media contents. Also, according to Flew, the new media can be referred to as the initiation of unique digital contents and reestablishing the traditional media to be suitable for the new technology. To make it clear, the digital contents or digital media can be further described as the media that combine the contents of text, data, images, and sound and employ the new technology of computer, the internet, or satellite as a transmission system (Flew, 2002; Biagi, 2010).

The internet does not only create the new media but also causes the emergence of new competition (Biagi, 2010). Today people consume several forms of the traditional media (book, newspaper, radio, and television) and also the new media products, which are created among the operators to compete with each other for maintaining market sharing and also to widen marketing opportunities for new cash flow. Similar to other developed countries, the new opportunity emerged from the new media benefits the media business in Thailand: several firms can earn from advertising agencies, who follow the audiences to the firms’ web sites; the firms in the recording industry such as GRAMMY and RS create digital music contents to chase and dominate customers’ demands; also the exhibitors in the film industry
take advantages of the internet to approach audiences by using it to promote a new release and to be box offices. This situation supports the arguments of Flew (2002) and Biagi (2010) that the new media do not cause disappearance of old media; rather, they force the old media to adapt to the new technology.

The growing trend of using the internet in Thailand is likely to follow the growing trend of using the internet in the developed country such as U.S. Biagi (2010) revealed that in 1988 the numbers of U.S. citizens using the internet are lower than one percent of total populations; nowadays, the average numbers of 73 percents of total consumers are online. The following Thailand statistics reported from several organizations seemingly reflect the growing trend of the internet, which finally will affect the future of the media industry and their new media products.

According to important statistics of the internet in Thailand reported by Koanantakool (2007), it has been taking 16 years from 1992 to 2007 to grow the number of the internet users from less than 1,000 users to 13 million users. Also, as reported by National Electronics and Computer Technology Center (NECTEC), there are only 372 commercial web sites in 1997; the numbers have been growing up to 21,540 web sites in 2009. NECTEC (2009) also found that the commercial web sites account for 44.5% of total sites. NSO (2008) also reported the same trend of computer and the internet using in Thailand based on the survey conducted on the population aged 6 years and over; the survey expressed that with 12,543 and 6,972 million users of computer and the internet in 2004, such numbers of users have been growing to 16,999 and 10,964 million people in 2008. Additionally, Nielsen Media Research (2009) revealed that advertising spending on the internet has continually increased; yearly spending in 2008 is US$ 5 million, while the figure reported in 2009 is US$ 7 million and it is likely to grow in the year of 2010 based on the latest monthly figure tracked.

1.2 Statement of the problem

The issues relating to financial reporting and accounting information are inevitably uncovered among other factors precipitated several disasters in the financial system. In the Asian crisis 1997, an eruption of the financial turmoil caused by various problems including laxity of banking regulations (affecting financial system integrity) and mismanagement on exchange currency policy; in addition, stock and estate values speculation is also another bad
factor doubly jeopardized the situation (Islam, 2000). Several rescue packages are introduced to stabilize the economic system including improving transparency of financial reporting and accounting system (Islam, 2000; Chalardpodjanaporn, 2008).

In the debacle of Enron, WorldCom, and Xerox, irregular accounting practices camouflage risk information required to be released to market participants; subsequently, the regulators revisit related regulations to redesign exhaustive risk disclosure framework to enable investors in assessing the risk. (Linsley and Shrives, 2005).

The latest subprime crisis 2008 causes the U.S. government to inject US$125 billion to bail out 10 banks and triggers globally systemic insolvency of banking institutions (Brewer and Klingenhagen, 2010). Subsequent effects to Asian economy can obviously be observed through the United Nations report of World Economic Situation and Prospects 2009. According to the report updated as of midyear 2009, global economic setback weakens economic activities throughout the region, whereas rising of labor forces drives growth rate of unemployment. The report also further elaborates that as a consequence of such situation, the regional trade will contract sharply together with a marked decelerate in tourism and such will turn back to drive an overall global economic depression (United Nations, 2009). Similar to other crises, this lending crisis is originated from deterioration of credit assessment process, where investors put their reliance on rating agencies without committing proper assessment themselves; these factors become the accelerator to widely spread disaster (Duffie, 2008; Jain, 2009; Brewer and Klingenhagen, 2010). As a consequence, several monetary and fiscal measures are announced to enhance risk assessment process and accounting and financial reporting practices (Duffie, 2008; United Nations, 2009; Brewer and Klingenhagen, 2010).

The issues behind several crises discussed so far have lent the implication emphasizing the importance of financial reporting and accounting information to the investment decision.

From another angle, the crises are stressing “the problem incurring from investors’ speculative habits and disadvantage of inadequately employing fundamental accounting data to support their investment decision”. The premise of the statement of problem of this paper is built on this problem.
Given these backgrounds and importance, it is urgently required substantial insight into that to what extent the SET players employ fundamental financial data in assessing value of a firm’s equity. Especially, as to the target industry and underlying motivations, the researcher seeks insightful understanding of this phenomenon by anchoring attention into the humanly-intellectually intensive industry, the media and publishing (the industry, of which its valuation is sensitive to qualitative factors). Thus, based upon this inspiration and the problem currently concerned, the following main research question arises:

*Do the investors trade the media and publishing securities regarding fundamental financial factors disclosed on the accounting statements?*

To gain insight of this phenomenon, the relationship between market value of the firms’ equity and the fundamental financial factors of interest must be determined. This is the common practices for investigating the usefulness of fundamental analysis in security investment adopted in other literatures including Landsman (1986), Lev (1989), Graham and King (2000), Barth et al. (2001), Ibrahim et al. (2002), Hand (2003), El Shamy and Kayed (2005), Ragab and Omran (2006), Rahman and Mohd-Saleh (2007), Tan and Lim (2007), and Pirie and Smith (2008). In accomplishing this, the main research question is then rephrased and cascaded down into the following statistical research question regarding the key financial factors selected.

Statistical research question 1: Is there statistically significant relationship between the change in the book value of equity and the change in the market value of equity?

Statistical research question 2: Is there statistically significant relationship between earnings (net income) growth rate and the change in the market value of equity?

Statistical research question 3: Is there statistically significant relationship between dividend growth rate and the change in the market value of equity?

Statistical research question 4: Is there statistically significant relationship between the change in capital expenditure and the change in the market value of equity?

Statistical research question 5: Is there statistically significant relationship between the change in net operating working capital and the change in the market value of equity?
Statistical research question 6: Is there statistically significant relationship between the change in debt service capability and the change in the market value of equity?

Statistical research question 7: Is there statistically significant relationship between investment in non-core business growth rate and the change in the market value of equity?

Statistical research question 8: Is there statistically significant relationship between the change in capital structure and the change in the market value of equity?

1.3 Research objectives

According to the current situation, the problem statement, and the research questions arising, the extent that the investors in Thailand equity market trade the media and publishing securities based on fundamental financial factors disclosed on the accounting statements is still questionable.

This research aims to empirically explore the fact to explain this phenomenon. This involves determining the relationship between fundamental financial statement factors and the market value of equity as follows.

1. To determine the relationship between the change in the book value of equity and the change in the market value of equity.
2. To determine the relationship between earnings (net income) growth rate and the change in the market value of equity.
3. To determine the relationship between dividend growth rate and the change in the market value of equity.
4. To determine the relationship between the change in capital expenditure and the change in the market value of equity.
5. To determine the relationship between the change in net operating working capital and the change in the market value of equity.
6. To determine the relationship between the change in debt service capability and the change in the market value of equity.
7. To determine the relationship between investment in non-core business growth rate and the change in the market value of equity.
8. To determine the relationship between the change in capital structure and the change in the market value of equity.

In achieving this, regression analysis has been employed to examine the relationship between market value of equity and the fundamental financial accounting variables selected. The existence of the relationship between exogenous and endogenous variables of interest expresses the influence of such fundamental financial variables on stock price. In other words, the market participants in Thailand stock market employ fundamental data contained in financial statements to assist their individual investment decision.

1.4 Scope of the research

The research quests for exhaustive insight of the market reaction to the released fundamental financial data. The results will explain to what extent the investors in the media and publishing industry utilize financial statement data for investment decision. To clarify such concern, the researcher has to determine the relationship between stock price and certain financial statement data of interest.

The required inputs for this investigation, thus, comprise market value of the equity (stock price) and financial data from financial statements. The former is the endogenous variable, while the latter is the set of explanatory variables (book equity, earnings (net income), dividend, capital expenditure, net operating working capital, debt service capability, investment in non-core business, and capital structure). The target dataset is from the SET firms traded under the media and publishing industry during the time periods of 1990 to 2008. The original dataset available in the Bloomberg database contains 25 listed media and publishing firms. However, in this study, the researcher observes the value of the variables for the identical crosssectional firms across the same periods of times; thus, the firms and time periods without data availability for the variables in focus are trimmed. As a result, the final balanced panel dataset of 100 firm-year observations are yielded from 20 different firms spanning 2004 to 2008.
1.5 Limitations of the research

There are restrictions having been imposed non-generalization upon the research. Those pertain to several ingredients.

First limitation relates to the scope of the sample and the time periods being studied. As discussed, this paper aims to scrutinize the influence of financial statement data on traded prices of Thailand media and publishing stocks (the content/non-capital intensive industry) during the time periods of 2004 – 2008. With this first limitation, the results and implications then are limited and used to explain the phenomenon of interest, which exists, particularly in Thailand media and publishing industry during the specified periods of 2004 – 2008. In other words, the result may not be applicable or well to explain the same phenomenon happening in other periods of this industry or any periods of the different industry, especially, in the capital intensive industry. Also, due to the limited accessibility to financial data in the non-listed firms, then, all the representative firms are only the media and publishing firms listed in the Stock Exchange of Thailand. Therefore, the results of this research may not be applicable to other non-listed firms in the same or other industries. In addition, with the data availability of the variables of interest, the longest periods yield balance panel spanning 2004 till 2008; then, the longer periods or the bigger sizes of the samples possibly generate more powerful and generalized results to describe the relation.

In terms of accounting standard, even, IAS is adopted by several countries including Thai regulators with a few exceptions as suggested by Chalardpodjanaporn (2008). The differences of accounting data are found to be existed amongst countries in diverse regions (Eng et al., 1999). The data exploited in this research are from financial statements prepared according to institutional accounting practice governed by the Thai GAAP. Thus, the power of the model in explaining the phenomenon of the value relevance of financial statement data may be limited to Thailand equity market environment. Above all, the data obtained are assumed to be properly correct, since the related dataset (financial statements data and equity prices) are purchased from the Bloomberg Finance L.P. (The firm is widely realized as a professional agency in gathering and distributing financial data).

Another limitation relates to the independent variables of interest. In examining value relevance of fundamental factors, the current researcher focuses on some fundamental
financial statement variables. They are book equity, earnings (net income), dividend, capital expenditure, net operating working capital, debt service capability, investment in non-core business, and capital structure. Thus, explanatory power of the estimated model may be limited and possibly, some other variables may be more powerful to explain the relationship between the factors of interest.

Lastly, this research is designed to examine the market’s perceptions of the advantage of fundamental analysis, in other words, the benefit of accounting conservatism to the equity investment, rather than providing a tool to value a firm.

### 1.6 Significance of the study

The current research makes several contributions to the academic arena of corporate finance, and to many constituents and stakeholders. Firstly, the paper extends insight into value relevance literature, particularly, the value relevance of quantitative factors in the informational and content industry. The industry typically is perceived by the scholars that its intangible assets are the primary drivers of the industry values. This study is the evidence in Thailand literatures that relates value relevance of fundamental financial factors to the context of informational and content industry. In addition, the research framework, which extends prior researches by plugging in various key financial factors of literary interest, provides new information pertaining to the role of fundamental analysis in stock investment.

Secondly, the fruitful understanding in the association between the factors under investigation, to a certain extent, lends the implication about the market’s confidence in the publically released accounting statements. This indirectly provides the regulator and the standard setter useful understanding that can further be utilized to enhance good corporate governance mechanism.

Thirdly, one of the main intentions that this research tries to convey to the investors is the advantage of fundamental analysis to their investment decisions. The implications suggested in this paper then help to enhance the investors’ awareness of accounting conservatism in the equity investment. In a consequence, such awareness and practical investment decision based on the firms’ fundamental components conspires to help the investors to mitigate the risk exposure in their portfolios. Furthermore, the new understanding in the equity market behavior relating to financial statement data enthusiastically reminds the investors to take
accounting information into account together with other ingredients to form the intelligent investment decision.

Fourthly, similar to the benefit contributed to the investors, the new knowledge implied in this paper suggests the firms’ management to employ both voluntarily and involuntarily fundamental financial data to signal the firms’ situation and growth prospects. The public conveyance of companies’ fact through accounting data does not only confide the investors in an unstable equity market situation but also attracts the new funds from them in the normal situation. This consequently maximizes value of the firm.

Lastly, an intelligent decision creates wealthy individual investors. The firms’ growth prospect drives firms’ values that, in turn, improve corporation healthy; affects other stakeholders, and living conditions of employees. All these factors, finally, cause good effects and strengthen an overall economic system of the country.

1.7 Definition of terms

To fine-tune understanding amongst readers on the matter of this research, this section expressed concise definitions of the key relevant terms discussed throughout the paper.

**Book value of equity:**

Downes and Goodman (1990) defined book value as the value at its cost of equity, where equity refers to an ownership of a stockholder. Thus, book value of equity can be defined as a historical value of net assets that a firm’s shareholders invested in that firm (Meigs and Meigs, 1993). In other words, it is the difference in the book value of assets and book value of liabilities (Damodaran, 2006). Change in book value of equity means percentage change of its value from the prior year.

**Capital expenditure:**

Expense incurred when a business acquired new assets used to support the business operation in a long run, typically, refers to long – lived or fixed assets such as furniture, fixture, equipment, machine, and plants (Meigs and Meigs, 1993). The American Heritage Dictionary (2002, p.208) defined capital expenditure as “funds spent for acquisition of a long – term
asset”. Change in capital expenditure then refers to percentage change of its value between two comparable fiscal periods.

**Capital intensive industry:**

The industry that its revenue is driven by the capital assets such as factories, machines, or equipments, hence, its assets structure is likely to have physical assets in a high proportion than intangible assets (Downes and Goodman, 1990).

**Capital structure:**

Brigham and Ehrhardt (2005) described that capital structure is the structure of funds that a firm raised to finance its assets; in other words, it is the proportion of debt and equity showing on the firm balance sheet. Change in capital structure refers to percentage change of the value of debt and equity proportions from the previously fiscal period.

**Debt service capability:**

It is the ability of a firm to repay debt obligation; typically, it refers to the required amounts of principal and interest due in a particular period, for example, within one year (Downes and Goodman, 1990). Debt service capability number can be derived quantitatively using a financial ratio. Change in capability to service debt then refers to percentage change in its quantitative value between two fiscal periods.

**Dividend:**

Dividend refers to the part of profits paid to people, who hold shares of any companies (The Collins Dictionary, 2003). Meigs and Meigs (1993, p.319) described that “dividend is a distribution of cash by a corporation to its stockholders”. Dividend growth rate then refers to the development in payment amount of dividend during a particular fiscal period; the number can be derived from dividing the different amount of dividend paid in the present period and amount of previous period by amount paid in the previous period.

**Earnings:**

The American Heritage Dictionary (2002) defined earnings as profits that a business firm gains from investing activity. Similarly, Brigham and Ehrhardt (2005) explained that
earnings, so called net income or profit, is the revenue from business operation deducted by expenditure, taxes payment, and dividend payment for preferred stock (but before payment of common dividend of the same fiscal period). Net income refers to the residual sum amount of revenue after expense deduction (Downes and Goodman, 1990). In this research, the terms ‘earnings and net income’ are used interchangeably. Earnings or net income growth refers to the development in value of net income during a particular fiscal period. It also refers to the percentage change of its value from the prior year.

**Entertainment firm and entertainment industry:**

The American Heritage Dictionary (2002) defined the words entertainment, firm, and industry as follows: an entertainment is the act of holding someone’s attention with amusement or diverting programme such as presenting a dramatic show or musical work to a public audience. Firm means an organization that provides service in exchange of money. Industry refers to an economic sector comprising enterprises or firms with commercial purposes. In this regards, an entertainment industry can refer to the industry made up of commercial businesses or firms that provide a public audience the amusement or diverting programme, for example, musical performance, show, television programme, and motion picture.

United Nations (2008) defined entertainment activities in the International Standard Industrial Classification (ISIC Revision 4.0, p. 257) as the activities that “include the production and promotion of, and participation in, live performances, events or exhibits intended for public viewing; the provision of artistic, creative or technical skills for the production of artistic products and live performances”.

**Efficient market:**

The hypothesis postulates that stock price reflects all new information and market players’ expectation, thus, it is pointless to predict the movements of the market (Downes and Goodman, 1990; Brigham & Houston, 2007). The term also refers to efficient market hypothesis (EMH).
**Investment in non-core business:**

Investment means the present commitment of cash for a time period in order to generate expected future return to compensate for expected inflation, uncertainty of return and time committed (Reilly and Brown, 2006). Investment in non-core business, thus, is the use of capital to create more cash by participating in risk – oriented activities especially in a field that is not related to normal business activities of a company. Investment in non-core business growth rate then refers to percentage change of its value between two consecutively fiscal periods.

**Labor intensive industry:**

It refers to the industry that intangible assets (humans, patents, intellectual properties, and the like) play the key role in producing the firms’ revenue (Downes and Goodman, 1990). In this research, the term is used interchangeably with human-intellectual intensive industry or intangibility intensive industry.

**Market value of equity:**

Downes and Goodman (1990) defined market value of equity as a security’s current price according to the latest traded records. The American Heritage Dictionary (2002, p. 831) defined the term ‘market value’ as “the amount that a seller may expect to obtain for merchandise, services, or securities in the open market”. Market value as explained by Keown et al. (2003) is the observed value of assets that are mutually accepted by seller and buyer in the market. Change in market value of equity refers to the percentage change of its value from the prior year. The term is used interchangeably with the term ‘stock price’.

**Net operating working capital:**

Brigham and Ehrhardt (2005) stated “Therefore, net operating working capital is the working capital acquired with investor-supplied funds” (p. 103); it is the net amount of operating current assets and operating current liabilities in need of the business operations. Current asset is defined as the liquid asset, where changing of such asset into cash can be done quickly in a short time; current liability is the debt that a business must repay within a short time (Meigs and Meigs, 1993). Change in net operating working capital refers to percentage change in its value between two consecutive periods.
Strong form efficient market hypothesis (Strong form EMH):

The situation that market price of stock reflects all relevant information and there is no chance for insider to consistently beat the market (Brigham & Houston, 2007).

World Economic Forum:

World Economic Forum is the non-profit Swiss foundation that makes every effort for global corporate governance system. The organization comprises several partners all over the world. Many members are from leading business firms and small business enterprises in the developing world. The forum works closely with the leaders from several sectors including government, non-government, academic, the media, and religion. This information was from the web site of World Economic Forum (http://www.weforum.org); Retrieved November 8, 2010.

1.8 List of abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ADF</td>
<td>Augmented Dickey-Fuller test</td>
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<tr>
<td>AMEX (ASE)</td>
<td>American Stock Exchange</td>
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<tr>
<td>AR</td>
<td>Account Receivable</td>
</tr>
<tr>
<td>AU</td>
<td>Assumption University of Thailand</td>
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<tr>
<td>BG</td>
<td>Breusch-Godfrey test</td>
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<tr>
<td>BLUE</td>
<td>Best Linear Unbiased Estimator</td>
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<tr>
<td>BPG</td>
<td>Breusch-Pagan-Godfrey test</td>
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<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<tr>
<td>DDM</td>
<td>Dividend Discounted Model</td>
</tr>
<tr>
<td>EBIT</td>
<td>Earnings Before Interest, and Taxes</td>
</tr>
<tr>
<td>EBITA</td>
<td>Earnings Before Interest, Taxes, and Amortization</td>
</tr>
<tr>
<td>EBITDA</td>
<td>Earnings Before Interest, Taxes, Depreciations, and Amortization</td>
</tr>
<tr>
<td>EMH</td>
<td>Efficient Market Hypothesis</td>
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<tr>
<td>EPS</td>
<td>Earning Per Share</td>
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<tr>
<td>EVA</td>
<td>Economic Value Added</td>
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<tr>
<td>FAP</td>
<td>Federation of Accounting Professions</td>
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<tr>
<td>FASB</td>
<td>Financial Accounting Standard Boards</td>
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<tr>
<td>GAAP</td>
<td>General Accepted Accounting Principle</td>
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</table>
The full terms of other abbreviations: the sample company names and financial variables of interest are illustrated in chapter 4 of this research (Table 4.1 and Table 4.2, respectively).

**Organization of the research**

Given the above general picture of this study, the researcher organized Chapter 2 as the literature reviews section, which the theories related and the prior studies were discussed.
Chapter 3 demonstrated the framework of the present research based on the theoretical framework. Following that, Chapter 4 illustrated the research methodology employed and Chapter 5 documented the statistical results of descriptive statistics and hypothesis testing. Chapter 6 was contributed to discuss the findings, implications, concluding remarks, recommendations for stakeholders, and the opportunity for further research.
CHAPTER 2

LITERATURE REVIEW

The premise of chapter 2 is structured into three main sections. Section one is provided for discussing the variables of interest, where definition of each will be presented with respect to the quotations of authorized scholars. Also, in this section, the proxies of these variables are also introduced to establish mutual understanding amongst readers. Section two is organized to discuss the theories established for each financial variable. The last section reports informative results relating to the observed phenomenon, which are revealed by the researchers in other countries.

2.1 Definition and features of the variables

This research aims to scrutinize whether the SET players consult fundamental financial variables on the firms’ financial statements when they make equity investment decisions. As suggested by scholars, if the investors base their decisions on financial statements information, the association between equity price and financial statement factors must exist (Feltham and Ohlson, 1995; Ohlson, 1995; Barth et al., 2001; Hand, 2003; Rahman and Mohd-Saleh, 2007).

To seek understanding on this phenomenon, thus, the researcher proposes eight predictors into the research framework and tries to determine the relationship of these variables and the market value of the equity. This is a conventional and practical method in testing the hypothesis that the movement of a firm’s stock price is influenced by fundamental conditions of that firm.

2.1.1 Dependent variables

The market value of equity

The market value of equity is defined as the current price of the security according to the latest traded records (Downes and Goodman, 1990). More specifically, it is the observed value of a security, which is priced and mutually accepted by seller and buyer in the equity market (Keown et al., 2003). In this research, the variable of market value of equity is employed as the dependent variable and it represents traded price of a firm’s stock. The proxy of this variable is the product of multiplying yearend number of shares by the calendar year-end closing price of a firm’s stock as mutually agreed by seller and buyer in the SET. Other terms that are interchangeably used and also refers to the market value of equity include the terms of equity price, stock price, and traded value of equity or security, in addition, the term ‘market value of equity’ is abbreviated with the label of MVE and also is used throughout this research to refer to the percentage change in the value of this dependent variable from the prior year value. Section 2.1.2 is organized to discuss the role of MVE in relation to other financial factors, which in this research are employed as the independent variables.

2.1.2 Independent variables

The book value of equity

Downes and Goodman (1990) explained that book value is the value at its cost of purchasing and is carried on balance sheet; equity means ownership possessed by stockholder, thus, book value of equity is the ownership parts that are presented at cost on the firm’s balance sheet. Penman, who studied equity valuation as the combination of book equity and earnings in 1997, explained that book value of equity disclosed on balance sheet is realized as the bottom line accounting figure aggregating the relevant information and representing net assets used to produce earnings. Damodaran (2006, p. 262) defined book value of equity as “the difference between the book value of assets and the book value of liabilities, a number that is largely determined by accounting conventions”.

This research defines the book value of equity (labeled as BVE) regarding the definitions given by these scholars and assumes the financial numbers disclosed on the firm’s balance
sheet as the proxies of this variable. The number is the sum of balance sheet value of total shareholders' equity as of the end date of the calendar year and can also be obtained from subtracting total book value of liabilities (BVL) from total book value of assets (BVA). Symbolically,

\[ BVE = BVA - BVL \]


**Earnings (Net income)**

Downes and Goodman (1990) gave the definitions of net income as residual sum amount after expense deduction. The Collins Dictionary (2003) defined earnings or income as the money that a person or an organization receives by working or running the business. Brigham and Ehrhardt (2005) described that net income so called profit or earnings is revenues deducted by expenditure, taxes payment and dividend payment for preferred stock but before payment of common dividend of the same fiscal period.

Additionally, as pointed out by Brigham and Ehrhardt (2005), growth of earnings is driven by a number of factors including operating income, which a firm retains and uses to reinvest. Earnings growth is also used as a performance measure. As proposed by Hirschey and Nofsinger (2008), the revenue growth is the best indicators in measuring firm health and valuation. Meigs and Meigs (1993) also posited that to harvest net income (or profit) is the fundamental business objective; the idea is reflected from the meaning of net income, which is referred to as incremental value of owner’s capital driven by profitable operating result of the company’s business. Because of its vitality to all businesses’ valuation, earnings component is factored in a variety of financial ratios used for measuring firm performance. For instance, account receivable ratio, growth ratios, price ratios, per share ratios, and

In this research, income statement numbers are assumed to be the proxy of this variable. Earnings amount refers to as the amount of net income available to common shareholders exclusive of extraordinary items. This accounting number is readily available on the income statement. The label of NI is used to refer to the percentage change of net income from the prior period.

**Dividend**

As defined by Downes and Goodman (1990), dividend is earnings distributed by the firm to shareholders in any forms such as money, stock or script, and so forth; this will be prorated by class of security held. Also mentioned by Downes and Goodman (1990), dividend record refers to as information historically publicized on company dividend policies and payment records; in US, investors can find this information in the publication provided by Standard & Poor’s Corporation. As per The Collins Dictionary (2003), dividend refers to the part of profits paid to people, who hold shares of any companies.

Some companies offer the shareholders to use cash dividends to reinvest in the shares of their companies. This is known as a dividend reinvestment plan. It is a good solution and cost-efficient means for a company in raising equity capital; at the same time this benefits the participants in terms of market price discount and without or little brokerage expenses (Hirschey and Nofsinger, 2008). Obviously, the meaning itself implies the relation of earnings to dividends. Additionally Cottle et al. (1989) claimed that in general, future earnings are perceived as the determining factor of future dividend payment. In addition to future earnings, dividend policy is then another one important thing in attracting investors. As per Cottle et al. (1989), however, it is understandable that investors have never expected full
amount of earnings as the dividends because some parts of earnings should be allocated to strengthen and expand the business. Dividend relevant topic has been widely researched. For instance, the dividend information content of Pettit (1972) and Asquith and Mullins (1983), the relationship between future earnings and dividend announcement of Watt (1973), the stock market reaction to dividend announcements of Lonie et al. (1996), and value relevance of dividend payment and R&D by Hughes (2008).

To study the market response to the dividend numbers, this research assumes dividend payment amount as disclosed on the firm’s statement of cash flow as the proxy of historical record of paid dividend. DIV is the label of this variable and is used to refer to the percentage change of dividend payment amount from the previous period.

**Capital expenditure**

Capital expenditure as defined by Downes and Goodman (1990) is an outlay spent in order to buy or maintain capital assets. Capital asset is the related term and is also defined by Downes and Goodman (1990, p. 208) as “long-term asset that is not bought or sold in the normal course of business. Generally speaking, the term includes FIXED ASSETS—land, buildings, equipment, furniture and fixtures, and so on”. Also, Copeland et al. (2000) described that capital expenditure can be computed as the net increase of property, plant, and equipment added depreciation expenses in that period. Chung et al. (1998) claimed in their research that capital expenditure is the long term expense relating to capital investment decision. According to Jiang et al. (2006), capital expenditure can be referred to as an expense incurred as a result of the decision involving capital budgeting (for example, the decision to buy new equipment or to expand the firm’s plant).

In this paper, capital expenditure is also defined regarding these common definitions. Capital expenditure in any periods is the net increase of property, plant, equipment and other capital assets added depreciation expenses in that period. Financial numbers relating to capital expenditure as released on the sample firms’ statements of cash flow at the end of the calendar year are presumed as the proxy of this variable. Capital expenditure is labeled as CAPEX and refers to the percentage change of capital spending from the prior year. So far, the role of capital expenditure has gained wide attentions from the researchers as to its vitality in shaping the firm’s impending financial conditions. Several prior researches sought for the accompaniment of CAPEX and firm’s value or earnings performance. Possibly, these
were motivated from the common view that capital spending involves strategic decisions that influence the firm growth prospect. Also, logically, managers will undertake new project when they believe that such project will return excess benefits. In that regard, it is very reasonable to see the positive relation between capital expenditure number and future earnings (Jiang et al., 2006). The aforementioned researchers examined value relevance of CAPEX including McConnell and Muscarella (1985), Kerstein and Kim (1995), Chung et al. (1998), Kim (2001), Jiang et al. (2006), and Echevarria (2007).

**Net operating working capital**

Brigham and Ehrhardt (2005) described that for any firms, there are two types of assets that the firms use to run the business: operating assets and non-operating assets; operating assets can be further classified into operating current assets and operating long-term assets. It has been already discussed in the previous section that CAPEX represents long-term operating assets (property, plant, and equipment) supporting the business in the long run. In this part, the paper discussed the feature of operating current assets, another operating factor, which is widely realized as the cash generator. To subtract operating current liabilities from operating current assets yields net operating working capital (Brigham and Ehrhardt, 2005).

In this paper, the researcher tries to observe the role of net operating working capital in shaping the responses of the SET players. Net operating working capital is labeled as NOWC and refers to the percentage change of its value from the previous period. The proxy of this variable is the fundamental components expressed on the firm’s balance sheet as of the date at the end of the calendar year and derived from subtracting accounts payable and accruals (AP) from the sum of cash and equivalence (C), accounts receivable (AR), and inventories (I). It can be symbolized as:

\[ \text{NOWC} = (C + AR + I) - (AP) \]

Several previous researchers have observed the influential role of working capital on the firms’ performances: Rayburn (1986) found that operating cash flow can explain the movement of stock prices. Ali (1994) reported nonlinear relation between stock price and operating performance regressors (cash flow, working capital from operation, and earnings). Teruel and Solano (2007) detected the relationship of working capital to the firm’s

**Debt service capability**

Debt service as defined by Downes and Goodman (1990) is the money required to expend principal of debt and interest, which are due in a particular period of time, normally one year. Penman (2007) expressed debt service requirement as the aggregation of required amount of interest, preferred dividends payment, net principal payment, and lease payments. The term, ability to service was also defined by Downes and Goodman (1990) as borrowers’ abilities to meet payment obligated to debtors.

Recently, ability of a firm to service debt has been widely discussed. Several researchers have tried to explore the connection of investment, profitability, and liquidity because abilities to attract internal and external funds determine investments of firms (Ndikumana, 1999), and the firms’ investment shapes the growth prospect (Downes and Goodman, 1990; Meigs and Meigs, 1993; Damodaran, 2002; 2006; Fagiolo and Luzzi, 2004; Reilly and Brown, 2006; Hirschey and Nofsinger, 2008). Fagiolo and Luzzi (2004) put that, among other financial factors, a firm’s liquidity also impacts on decision to take investments and financing. According to them, large and mature firms tend to raise fund externally due to two factors: low level of cash flow and ease of accessing to external funds of their commercial networks. Similarly, Ndikumana (1999) also discussed that the capability to raise fund to finance investment is influenced by the state of creditworthiness of the firm (creditworthiness refers to as the capability to service loan granted by lenders). As pointed by Ndikumana (1999), large amounts of debt service requirement may mislead a lender or an investor; most likely, it is interpreted as a potentially insolvent signal. As a consequence, the firm in the face of high debts is likely to encounter the difficulty in raising new fund from the financial market (Ndikumana, 1999). This in turn affects such firm’s liquidity. Thus, the firm encountering more liquidity problem is likely to grow slowly and faces more unstable pattern of growth (Fagiolo and Luzzi, 2004). Obviously, liquidity of a firm has significant effect on its growth rate (Elston, 2002).

Considering the vitality of debt service capability, this research then intends to explore whether there is relationship between this factor and a firm’s equity price, where debt service capability in this research is defined as abilities of the sample firms to service their debt
commitments. EBITDA coverage ratio is assumed as the proxy of this variable. Income statements and statement of cash flow numbers as reported at the end of the calendar year are substituted in the following function to determine the value of the proxy. DSG is the label of this variable and refers to the percentage change of its value from the prior period.

\[
\text{EBITDA Coverage Ratio} = \frac{\text{EBITDA} + \text{Lease Payments}}{\text{Interest Expense} + \text{Principal Payments} + \text{Lease Payments}}
\]

**Investment in non–core business**

As defined by Reilly and Brown (2006), investment means the present commitment of cash for a time period in order to generate expected future return to compensate for expected inflation, uncertainty of return and time committed. Downes and Goodman (1990) explained that investment involves utilizing capital to create more gain through participating in risk–oriented activities. According to The American Heritage College Dictionary (2002, p. 715), “invest means to commit (money or capital) in order to gain a financial return”. The Collins Dictionary (2003) defined core business as the most significant business activities of organizations. Penman (2007) discussed that the core businesses of any companies typically will be reflected as a matter in their business strategies, obviously, such business activities play important roles among other activities the companies involve.

In this research, investment in non–core business is defined as any investment activities the firms involve exclusive of the core business activities driving the core income in such business entities. Thus, in this paper, investment in non–core business includes short term investment in marketable security, long term investment, and investment in associated companies. Financial numbers of such components, which are readily available on the firms’ balance sheets at the end of calendar year, are assumed to be the proxies of these components. The label of INV is used to indicate the percentage change of the value of investment in non–core business from the prior period.

The importance of investment was well established in the investment theory, in which the scholars have brought it into discussion and pointed out that the firms’ growth prospects are determined by several financial factors including investment decision (Downes and Goodman, 1990; Meigs and Meigs, 1993; Damodaran, 2002; 2006; Fagiolo and Luzzi, 2004; Reilly and Brown, 2006; Hirschey and Nofsinger, 2008). Recently, the researchers have attempted to explore how the market players respond to informational contents of investment.
For instance, Chen et al. (2001) studied the effects on stock prices of investment opportunities and found that the market positively respond to the firms’ bright opportunities relating to investment. Morgado and Pindado (2001) detected the relationship between firm value and investment. The results reported in both researches are consistent with the results revealed by Pilotte (1992) that share price positively respond to growth opportunity (where, investment is one factor measuring growth opportunity). Many others studied the effect of interfirm corporation announcements such as the works of Das et al. (1998), who found that stock market reacts positively to the cooperation announcements. The result revealed by Das et al. (1998) is consistent with the facts reported by Campart and Pfister (2002) that the market positively responds to the announcements of collaboration. It also is consistent with Rimstedt (2007), who reported value creation of firm as a consequence of alliance announcements.

Capital structure

Capital structure is defined as “the corporation’s financial framework, including LONG-TERM DEBT, PREFERRED STOCK and NET WORTH” (Downes and Goodman, 1990, p. 210). Brigham and Ehrhardt (2005) posited the following:

Capital structure is the manner in which a firm’s asset are financed; that is, the right side of the balance sheet. Capital structure is normally expressed as the percentage of each type of capital used by the firm such as debt, preferred stock, and common equity. (p. 960)

Regarding these definitions, capital structure study then involves an effort to describe the effects of mix financing of debt and equity, in which the proportions of those factors revealed on balance sheets are focused (Myers, 2001).

In this study, the author adopts this conventional approach. In this regard, the proxy of capital structure for the entire sample firms is the proportion of debt to equity, where the value of each proportion can be identified by the financial numbers disclosed on the firms’ balance sheets at the end of the calendar year (The bottom figures of Total Shareholders' Equity indicates equity proportion and Total Liability represents the proportion of debt). CS is the label of capital structure referring to the percentage change of the value of debt and equity proportions from the previous period. As documented in the previous section, several
scholars (Downes and Goodman, 1990; Meigs and Meigs, 1993; Damodaran, 2002; 2006; Fagiolo and Luzzi, 2004; Reilly and Brown, 2006; Hirschey and Nofsinger, 2008) pointed out that investment opportunity is the primary factor driving firm value. Nevertheless, to accomplish that goal requires the initial fund to start up the project and long-term fund to sustain once the project lives (Ndikumana, 1999).

As to financing, the source of funds can be obtained from internal and external sources depending on individual condition of each firm. Such difference sources of fund then cause divers effects. Tradeoff theory discusses the trade-off between the possibilities of financial trouble and the tax benefits, whereas pecking order theory points that debt financing will be engaged when lacking of internal fund; equity financing will be the last source (Myers, 2001). This lies on the facts discussed by signaling theory; if the managers have more information than investors relating to the growth prospect of the firm, they tend to raise their incentive from the new project by debt financing rather than sharing it to new equity holders.

Based upon these theories, several past researches endeavored to determine the effect of capital structure: Pilotte (1992) found that it is different between debt and equity offerings and also the level of riskiness of the debt instruments as evaluated by the rating agency concerns investors. Lewis et al. (1996) reported that the price of a firm is influenced by the opportunities of growth of the firm raising capital through debt offering. Hull (1999) showed that market reacts positively to the firm with the leverage ratio close to the norm. These are consistent with the results of Abor (2005), but they are contra to the study of Carpentier (2006), who found independency between capital structure and firm value.

2.2 Theoretical review

2.2.1 Fundamental financial information and equity investment

There is a crucial question concerning fundamental investors when they would like to value a security. A question is: what is the right source of information reflecting the firm’s value? Several scholars have provided answers to this question.

As claimed by Stowe et al. (2002), the most reliable source of information about the firm’s performance is financial statements, in which fundamental financial information of the firm is
disclosed. Financial statements are widely accepted by equity analysts as an appropriate source for studying the firm’s competency and economic performance.

Epstein and Pava (1995) revealed that the shareholders perceive the usefulness of corporate reports particularly advantages of the financial statements. Similarly, Naser et al. (2003) mentioned that according to the survey, the traditional accounting statements incorporated in the corporate annual reports are the most reliable section.

However, accuracy issue always arises, especially in a certain area of accounting practices, where cursory glance proves useless. In tackling this problem, carefully scrutinizing of accounting statement footnote as well as extending an investigation to obtain more details of information is of the essence.

As cited by Reilly and Brown (2006), information provided on financial statements can be utilized for analyzing a firm’s operation; numerical data identify determinants of firm’s cash flow and earnings and notes to financial statements provide additional description relating to such numerical data. Thus, the investors are recommended to consult note to financial statements. Note to financial statements is the fruitful source providing analysts the information, which can help them to compare the financial situations among different firms adopting different accounting standards (Reilly and Brown, 2006). Nevertheless, financial statement interpretation requires some level of technical and accounting understanding. This is one reason encouraging investors to ignore fundamental analysis. As revealed by Epstein and Pava (1995), inexperienced wealthy investors seem to rely more on non–numerical data. In this regard, a skillful analyst with superficially numerical understanding takes advantage over others in valuing a security based on financial statement data.

An important of financial statements is not just the accounting information reflecting management’s performance. Financial statements provide investors with the firm’s financial background and also the future expected shares prices. Investors can use them to guard against equity investment risk. As suggested by Brigham and Ehrhardt (2005), to survive in the world of investment, investors cannot blindly rely on information, or rating provided by an analyst; they need to learn how to interpret financial statements. Similarly, as pointed out by Damodaran (2002), understanding on financial statements is critical because such reports contain fundamental information, which investors need in analyzing and answering valuation questions.
Penman (2007) also discussed that accounting statements are multi-purpose tools, which a company uses to communicate with stakeholders through literary and numerical information. According to Penman, financial statements benefit several parties: To government and regulators, the accounting statements can be used for controlling business activities. To court, they are the assessment tools in litigation process. To CEO, financial statements can be used to observe the managers’ performances. To investors, financial statements are the published information released by the firms. Investors can use financial statements data to help them make decision whether a firm security is worthwhile to their investments.

This research aims to promote fundamental analysis and provide understanding on the relationship of fundamental financial statement data and stock price. The followed section theoretically discusses fundamental financial components of interest. These components theoretically and logically mirror the firms’ financial conditions, performances, and opportunities.

2.2.1.1 Book value and market value of equity

It is generally accepted that a firm is responsible for publicizing proper information related to its owner’s equity. The information will be presented separately in the owner’s equity section of the firm’s balance sheet. This section of the balance sheet reports the owner resources invested in a firm. Its book value at any point in time can be simply obtained by subtracting book value of liability from book value of assets (Meigs and Meigs, 1993; Penman, 2007). According to Meigs and Meigs (1993), the value of book equity will be increase as a result of additional investment from the owners and new profit from operating activities, in opposite, capital withdrawal and operating loss will inversely affect its previous value.

Similarly, it was conversed by Downes and Goodman (1990, p. 102):

…the book value of their shares stands to grow as net worth (shareholders’ equity) expands through earnings retained in the business. Common shareholders in publicly traded companies also stand to profit from increases in market prices of shares, which normally reflect expectations of future earnings.

This logically and theoretically reflects the association of the book value of equity with operation and firm value, finally influences its market price.
As cited by Brigham and Ehrhardt (2005), the management can magnify firm value or shareholders’ wealth by enlarging and speeding flow of cash, and minimizing risks. Logically, increment of the assets size will enlarge book value. As the basement of the market value of equity, thus the book value size combining relevant information and expectation of investor will typically influence its market price; this is true in a sense. The firm of which the market value of equity is more than its book value reflecting the optimism of investor to the firm future, whereas the opposite shows investors’ negative views to the firm’s operation at that time.

Since the book value is a record of the past, showing the cumulative amount that stockholders have invested, either directly by purchasing newly issued shares or indirectly through retaining earnings. In contrast, the market price is forward-looking, incorporating investors’ expectations of future cash flows (Brigham and Ehrhardt, 2005, p. 456).

Comparing these two factors, the managers can assess their performance perceived by investors. This also is one measurement widely used among financial analysts to evaluate the firm performance and assess investors’ view and expectation on the firm.

In accordance with Penman (2007), the book value of equity basically is used to measure stockholders’ ownership in terms of recorded balance; the value itself does not convey its intrinsic value. Nevertheless, it is realized as the based value that is used together with its market price to measure market premium. This premium as cited by Penman is generally recognized as non-recorded goodwill. The relationship of the market value and the book value can also be identified based on Penman’s citation that investors find market value by anchoring their valuation on the book value of equity on balance sheet, then proceeding to conduct assessment of unrecognized value or combining extra value from forecasting future excess profit. In his view, “book value captures value and residual earnings captures value added to book value” (p. 175). In addition, regarding price-to-book value ratio (P/B ratio) described by him (p. 155), the connection of market and book price is quite prominent:

Price, in the numerator of the P/B ratio, is based on the expected future earnings that investors are buying. So, the higher the expected earnings relative to book value, the higher the P/B ratio. The rate of return on book value---sometimes referred to as the profitability…
Lastly, Penman (2007) suggested there are three basic factors required for valuing the equity. Those are today book value, residual earnings, and premium, where the last two factors are the forecasted value till the horizon and the predicted value at that future time respectively.

Additionally, Stowe et al. (2002) posited that based upon the survey about the practical ratio widely employed in valuation analysis, book value and P/B ratio is among a few measurements popularly used the analysts. They explained that it may be because of stability and its positive value comparing to the volatile nature of earnings. However everything has drawback and so does the book value. Stowe et al. (2002) added that in service industry, human is the key operating factor. Physical capital represents by book value then is less important and cannot be considered as value indicator. Also, book value poses historical record and absorbs accounting accumulated depreciation effect. Thus, “inflation as well as technological change eventually drives a wedge between the book value and the market value of assets” (Stowe et al., p. 208). Consequently, oftentimes, book value per share poorly mirrors investments performance of shareholders. The distortion of book value caused by accounting assumption and inflation is as well discussed by Copeland et al. (2000) regarding non-cash practice in evaluating value continuity of firm.

Damodaran (2002) described that the association of book value of equity and its market price has often catch investor’s attention; stock sold lower than book equity generally is targeted and considered as undervalue. The existence of advantage and downside of book value of equity was also similarly mentioned by Damodaran.

For the relationship between stock price and interest rate, Meigs and Meigs (1993) conversed that stock prices of both preferred and common stock are found to be relevant to the movement of interest rate. These two factors have inverse relationship to each other. When interest rate moves up, stock price will decline and vice versa. For the relationship between stock price and book value, they contended a similar view for an existence of the relationship between these factors. According to them, book value can be employed to evaluate reasonableness of stock price. Nevertheless, this must be done under great care because the market price dealt below book price sometimes does not infer a good value, reflects the negative feeling of the market, instead, to the undervalue of firm’s resources and to the current control of management (obviously, book value is another measurement illuminating investors’ confidences on the management’s performance). In this regard, stock price traded higher than book value conveys a good sign of firm success as perceived by investors.
However, the traded price should not be too high comparing to the firm’s underlying book cost.

According to Damodaran (2006), each year retained earnings together with accounting adjustments will be included into prior year book equity to reflect the current status of shareholder’s equity on the balance sheet. Hence, book value is an important part that investors cannot ignore because logically, market price of equity is placed on book value of equity. To find fairly priced stock, investors intuitively relate market price to equity book value and earnings. As discussed by Damodaran (2006), market value of equity of any firm can be broken down into two big components: book value of equity, and goodwill. As for this view, book value of equity is the one component logically influenced firm value.

As also discussed by Stowe et al. (2002), book equity is an important factor in the residual income valuation model; “under this model, the estimated value of a share is thus the book value per share plus the present value of the expected level stream of residual income” (p. 275). This is evidence emphasizing value relevance of book equity.

2.2.1.2 Earnings (net income) growth rate

Based upon the rudimentary objective of the profit-oriented business (the business involves an effort to gather an income to increase owner’s equity from the assets invested), it can be clearly seen the chain tightly link net income to the value of the equity. According to Meigs and Meigs (1993, p. 105), “net income is a computation of the overall effects of many business transactions upon owner’s equity”. Also, as explained by Keown et al. (2003, p. 378), “earnings is one of the key variables that influence the market value of the firm’s common stock”. The point that Meigs and Meigs tried to make is net income expresses the value added to the equity.

Looking into income statement, investors can be able to trace the rudiments that form the net income. Basically net income derives from subtracting net expenses from net sales or revenues. Thus, net income is one financial component picturing operating performance. The relationship between accounting number of net income and stock prices was also reaffirmed by Meigs and Meigs (1993). According to them, net income is measured as the economic performance, which reflects enterprise’s accomplishment or failure; the firm’s stakeholders
Typically, investors will invest their money in a firm with a prosperous future. The practical and reasonable way to foresee future of any firms is to trace their historical earning records, whereas the most recommended source widely accepted by the investors as the appropriate one used for assessing firm’s performance is earning per share (EPS). High ratio expresses a good sign, whereas declining of earning per shares generally raises doubt about the firm’s future and development. To some extent, it signals poorer potential growth. The ratio of (EPS) reflects the net income applicable to each unit of common share and can be calculated by dividing the numbers of outstanding common shares into net income available to common shares. This is the conventional approach described by Cottle et al. (1989), Downes and Goodman (1990), Meigs and Meigs (1993), Damodaran (1996; 2002; 2006), Brigham and Gapenski (1997), Copeland et al. (2000), Stowe et al. (2002), Keown et al. (2003), Brigham and Ehrhardt (2005), Penman (2007), Hirschey and Nofsinger (2008).

The recognition of the association between stock price and earnings is widely and can also be seen through the price to earnings ratio, or the market value ratio (these ratios are employed to determine the market’s attitude to the firm’s growth prospects). The ratio derived from dividing earnings per share into the market price per share (Downes and Goodman, 1990; Meigs and Meigs, 1993; Copeland et al., 2000; Stowe et al., 2002; Brigham and Ehrhardt, 2005; Penman, 2007; Libby et al., 2009). The combination of these ideas illuminates the connection of stock price and net income. With this relation and the importance of the firm’s net income theoretically shapes investors’ views on the firm’s growth performance, it was widely researched to see how the market price of the stock reacts to earnings. All these matters, which demonstrate the significance of the net income concerning investors and owners, inspire the author of this research to examine the relationship of net income to stock value of media and publishing industry of the Thailand market.

### 2.2.1.3 Dividends

People put money into a financial institution in exchange of interest and saving for future consumption. Likewise, risk-taking investors in financial market trade off their money against expected future selling price of the securities and dividends.
As reflected in the discussion of Meigs and Meigs (1993, p. 699), “The prospect of receiving cash dividends is a principal reason for investing in the stocks of corporations”. As to its definition, dividend is among various factors representing firm’s operating achievement because it is the earnings partially distributed to shareholders. Practically, the firms will limit dividend payment proportionately to net income, whereas the main portion will be reserved to grow the business (Meigs and Meigs, 1993). This information rationally pictures in people’s mind the value relevance of dividend.

It is very true that demanded products can always play with purchasers’ emotions in terms of selling prices. Generally, people perceive that attractive dividend policy is the appeal of the firm, consequently causing high demands. Thus, it is sensible and, to a large extent, is possible that the securities with attractive dividends can also have higher selling prices. This sensibly implies connection between dividend and share price performance.

These evidences may be the main reasons standing behind dividend discounted model (DDM) and the issue pertaining to value relevance of dividends (as argued among several authors). The relationship between dividend and stock price is prominent in the perceptions of investors. As described by Meigs and Meigs (1993), in addition to earnings per share (EPS), another accounting statistics usually focused by stock investors is per share dividend because it represents income investors receiving for each stock hold. The changing of established dividend rate typically causes fluctuation in the market price of stocks. Generally, generous dividend policy is favorable to shareholders, and prospective investors.

According to Meigs and Meigs (1993), the critical factors influencing dividend amount are recent profitability, excess cash, and the firm management’s philosophy. Hence, examining the relationship of these factors by scrutinizing financial statements, investors will be able to understand the attitudes of top management, in consequence, can evaluate future opportunity to receive dividend.

It is also evidenced in Meigs and Meigs’s work (1993) based on their empirical observation on the relationship among earnings, dividend, and stock price: the result shows that declining of market value of stock presumably associates with the falling of per share dividend and earnings. In their opinions, some investors are likely to evaluate future earnings performance and relate it to future dividend, and stock price. Nevertheless, Meigs and Meigs (1993) also expressed another view as to these three factors: dividend yield is very significant to the
investors, whose the prime objectives are to maximize dividend revenue. To certain groups of investors, however, capital gains are the main requirement. The latter investors then tend to favor reserving the profit for future expansion with the reason that the expanded operation will increase net income, and finally rise up the value of the stock. In that regard, dividend is both relevant and irrelevant.

The association between free cash flow and dividend payment can also be seen through the discussion of Brigham and Ehrhardt (2005) about distribution of free cash flow to investors (Free cash flow is the excess cash or remained amount of NOPAT after subtracting operating capital invested). They cited that such free cash flow generally can be used to pay interest or settle debt, purchase marketable securities, buyback stock, and pay dividend. These distribution choices, to a certain extent, express that dividend distribution is dependent on the availability of free cash flow. Even if free cash flow drive value of the firm and stock price, whether dividend distribution policy (relates directly to free cash flow) can raise value of firm also depending on preferences of investors.

Brigham and Ehrhardt (2005) pointed out that distribution policy can be dividend payment or stock buyback. Each way has two-side effects on both groups of investors. When a firm chooses to pay dividend instead of repurchasing stock, dividend yield will be high (this results low capital gain). This situation favors the investors, who are keen on dividend. In opposite, if the firm chooses to use up excess cash on stock buying back, this decision results low dividend yield (but high capital gain). In their opinions, a firm can maximize market price of stock at optimal level of distribution policy, in which the appropriate levels of capital gain and dividend yield are balance.

The proposition of dividend has been well established in the corporate finance theory. The popularity of this factor was triggered by the seminal paper of Modigliani and Miller (1961). They proposed the theory of dividend irrelevance that value of a firm is independent from dividend policy under the assumptions of no brokerage cost and tax. They cited that investors can reinvest their dividends to acquire additional stocks when the firm offers attractive dividend policy. In opposite, the investors can create dividend income by selling their stocks when the firm announces no dividend payment. According to Modigliani and Miller (1961), if these transactions can be done freely without transaction cost and tax charged, then, dividend policy is irrelevant to the firm value. However, other theorists argued that Modigliani and Miller’s assumptions are unrealistic.
According to bird-in-the-hand theory discussed by several scholars including Brigham and Ehrhardt (2005) and Siad (2007), dividend yield make a favorable safety comparison with capital gains. Because of less risk feature of dividend, the investors prefer dividend yield to capital gain and value it more. The idea underlying in the dividend bird-in-the-hand theory is obviously reflected in the valuation model, where the present value of the security derives from discounting anticipated future flows of dividend with required rate of return of investors on common stock assuming constant growth rate.

However, tax preference theory gives better credit on capital gain than dividend yield. According to the tax preference theory, even if capital gain and dividend yield are taxed equally, the effect of time value of money causes dividend tax to be higher than tax from capital gain. The reason is cash paid today having higher value than cash paid in the future. This means dividend having higher tax. As a result, investors value and pay higher for the firm having minimal dividend pay-out ratio (Brigham and Ehrhardt, 2005).

Dividend theory is also discussed regarding the extent of informational-asymmetric signal. The following information is discussed by Brigham and Ehrhardt (2005), which is in accordance with the discussion of Siad (2007) about dividend signaling hypothesis. Based on observation, stock price responded to increasing of dividend, this implies that investors are keen on dividend than capital gain. However, this idea is argued that the reaction of the market to dividend announcement does not imply favorable condition of dividend perceived by investors. Instead, this situation dictates that, probably, there is the information content of announcement realized by the market. That is that dividend announcement signals the management’s optimistic view on the firm’s growth prospect. Investors realize this information, and thus convey their feelings through stock price. This indicates that the market actually reacts to the information clipped to dividend announcement. As to this view, the managers tend to avoid rising of dividend payment, if they are unsure about the firm future prospect and the continual profitability whether they can guarantee such dividend payment.

Interestingly, Brigham and Ehrhardt (2005) also discussed about announcements of cutting dividend: even, there is empirical evidence showing that the informational content of announcements have influences on falling of equity price, the inverse statement is not always correct. In addition, as pointed out by Brigham and Ehrhardt (2005), validating signaling theory relating to dividend does not strongly confirm that actually, the response of the market to announcements implies absorption of informational asymmetry effect in equity price;
instead, the market may respond to both informational asymmetry and bird-in-the-hand effects.

In addition to signaling and bird-in-the-hand theory, Brigham and Ehrhardt (2005) and Siad (2007) also discussed that dividend is value irrelevant according to the postulate of clientele theory. The clientele suggests that investors select the stock based on their individual preferences rather than dividend policy. The existence of these sorts of investors in the real world, dividend announcements are then value irrelevant, for example, risk-averse investors prefer the mature firms rather than the young growth firms with high capital gains opportunity. Thus, with or without dividend payment, it plays no effects on risk-averse investors. Also, attractive capital gains in the high growth firms are meaningless for this group of investors.

According to the discussion by Damodaran (2002) relating to dividend discounted model (DDM), dividend is the only cash flow investors received when they buy stocks. Hence, the simplest way to find equity value is to find the present value of expected future dividends. This is the intuitive logic playing active role of the model. As pointed out by Damodaran (2002), DDM is proved as an adaptable tool in finding value under various circumstances; also, testing of the model indicates its advantage in gauging value.

Penman (2007) discussed dividend conundrum that there is no an indication of value from forecasting dividend over a finite time horizon. Additionally, changing in dividend payout policy may not be related to value. Dividend will work best in valuation if payout is tied up permanently with the value generation as reflected in a fixed payout ratio (the function of dividends to earnings).

As argued by Copeland et al. (2000), from examining, the result shows that expected dividend can minimally explain a firm’s current share price (The study was based on examining the share prices and the present value of expected dividend over next five years of 20 companies). Also, the result demonstrates that average percentage of dividend to stock price is come up only 9.2 percent; two highest numbers of 18% and 20% from 2 out of 20 firms appeared from investigation. In addition, Copeland et al. (2000) discussed dividend policy with respect to dividend imputation system (in this system, tax credits are provided for shareholders by government). This policy helps to increase cash flow of dividends due to decreasing of dividend taxes. It was revealed by Copeland et al. (2000) that this system has
two value implications. Firstly, due to higher cash flow to shareholders, a firm in a country implementing dividend imputation system should be more valuable than a company in a country employing double dividend taxes system. Secondly, dividend policy engaged by a firm in dividend imputation system will impact value of entire firm because it determines the proportion of earnings distributed and the potential tax credit received by shareholders. However, it was argued that dividend imputation system may be value irrelevance if the key investors influencing stock price are institutional or foreign investors, who did not get the taxes benefits.

These controversial agreements on dividend and stock price and undecided situation of this financial factor attract the current researcher’s attention. Dividend factor is then selected as one independent variable among others.

2.2.1.4 Capital expenditure

Similar to NOWC, long-term operating capital is the operating assets used to support core business operations to produce new cash; nevertheless, they are different in terms of assets lives – NOWC is the short-term operating capital (Downes and Goodman, 1990; Meigs and Meigs, 1993; Brigham and Ehrhardt, 2005; Damodaran, 2002; Libby et al., 2009). As pointed out by Brigham and Ehrhardt (2005), capital expenditure is exclusive of long-term investment yielding dividend or interest received. Capital expenditure as the manifestation of long-term operating capital investments reflects year to year movement of long-term operating assets investment decided by the management.

Its importance was discussed in several angles. It is a value driver as contended by Downes and Goodman (1990): in general, the level of sales growth is pushed by sufficient capacity of capital expenditure, especially in capital-intensive business; hence, the firm capacity to grow in the market can be directly assessed by taking capital expenditure into account. Additionally, Downes and Goodman (1990) discussed that capital expenditure is the key accounting component influencing acquisition. The below discussion uncovers underlying essence to the firm’s value of fixed assets, partly long-term operating assets, in the eyes of acquirers:

The existence of fully depreciated assets on a company’s balance sheet may signal that the company is a likely candidate for a takeover attempt or a leveraged buyout.
The company’s plant, for instance, has most likely appreciated in market value over
the years and the depreciated basis on which it is carried on the balance sheet may
have no relationship to reality. Thus, new owners could in part finance the purchase
of the company by selling some assets at their higher market value (Downes and

In addition, the significance of NOWC and CAPEX to the firm value and stock price is
manifested as discussed by other scholars. Damodaran (2002) cited that existing assets is the
investment already made to generate today cash; this factor together with the new operating
assets (projected to be acquired in the future) will drive growth prospects and makes the firm
more valuable. According to Damodaran (2002), the ability and the quality to reinvest in the
new assets to acquire market opportunities, to expand channel of distribution, or even to
acquire other firms, will determine a firm’s growth rate. All these business activities partly
are regarded as firm’s operating activity lying on operating assets and typically they are the
main focus of the firm’s manager (Libby et al., 2009).

Interestingly, Libby et al. (2009, pp. 115-116) discussed stock market reactions to accounting
announcements. Their discussions give a strong chain linking stock performance and
operating activities that are logically driven by working capital as follows:

Stock market analysts and investors use accounting information to make their
investment decisions. Thus, the stock market, which is based on investors’
extpectations about a company’s future performance, often reacts negatively when a
company does not meet previously specified operating targets.

The association between NOWC, CAPEX and stock performance can also be seen through
the explanations made by Brigham and Ehrhardt (2005) about the relationship of total net
operating capital (the sum of NOWC and operating long-term assets), free cash flow (this
was identified as the result of subtracting NOPAT with the net investment in operating
capital), and Economic Value Added (EVA). According to them, EVA is realized as the tool
to measure managerial effectiveness in maximizing shareholders’ wealth (EVA is the
difference of NOPAT and after tax cost of operating capital).

The vitality of NOWC and CAPEX having been discussed in this section inspires the current
researcher to examine how the stock price responds to the changing of these financial factors,
especially the role of CAPEX factor to the informational content industry like the media and publishing industry of the Thailand market.

2.2.1.5 Net operating working capital

As realized, it was the primary objective of the management team to turn capital invested to be shareholders’ wealth. Because of this mission, the requirement for the capital of any business vehicles then was unavoidable. The few statements mentioned here illuminated logical connection between shareholder value and the capital invested, as the value driver.

In financial theory and the real business world, the firm’s core business operation was the key factor shaping operating assets investment direction. It was widely known that in the capital-intensive industry, the requirement on large investment of fixed assets was in a higher proportion than the labor-intensive industry (Downes and Goodman, 1990). Based upon this information, obviously, investment decision on operating assets altogether sufficient level of this type of assets would logically drove the firm’s financial performance. Because of this vitality of operating assets, two financial factors realized as its manifestation were selected. To examine how the stock price responded to the level of operating working capital, the researcher focused the changing of net operating working capital (NOWC). Also, to see how the stock price reacted to the movement of long-term operating assets, the changing of capital expenditure (CAPEX) was then focused.

Definitively illustrated by Brigham and Ehrhardt (2005), total assets of any firms could be categorized into two classes. The one was operating assets and another was non-operating assets. Operating assets could be further divided into operating current assets and operating long-term assets. As mentioned, the one among the financial factors focused in this research was net operating working capital (NOWC), which referred to the net amount resulted from subtracting operating current assets used in fueling operations with operating current liabilities naturally incurred from such core business operation. Long-term operating assets as described by Brigham and Ehrhardt (2005) were realized as property, plant, and equipment supporting the business in the long run.

Theoretically NOWC was the capital used to fuel the firm’s operation to produce finished goods, and then turn it into revenues, finally new cash inflow. In other words, NOWC was really the cash generator, a key driver of firm value and stock performance (Downes and
Goodman, 1990; Copeland et al., 2000; Stowe et al., 2002; Brigham and Ehrhardt, 2005; Damodaran, 2006; Reilly and Brown, 2006; Fabozzi, 2007; Hirschey and Nofsinger, 2008). In any business firm, importantly, the firm’s manager needed to maintain appropriate level of this type of assets to smoothen the business operation while trying very much to minimize managerial cost incurring from handling these assets. As commented by Brigham and Ehrhardt (2005), maintaining over-needed assets, manager then raised unnecessary capital cost that would reduce the rate of return on capital. During constraint period, this might further affected the firm’s debt service capability, put the whole firm in jeopardy and then brought the firm to bankruptcy.

2.2.1.6 Debt service capability

It was expressed clearly in the previous section that free cash flow drove the firm’s value. Hence, all underlying financial components forming free cash flow were logically value relevant. Even though credit health & liquidity or ability to pay creditors did not present as a factor formulating free cash flow but in reality, it could be considered as the manifestation of free cash flow in a sense that liquidity was having enough money to service creditors and to fund the projects. Particularly, in the eyes’ of creditors, the firm’s credit health was a major factor attracting their new money to finance the firm’s project or new investment. As a consequence, the investment created the flow of cash and ultimately value to the firm, which would influence stock price. Therefore it was sensible to claim that debt service capability as one factor, supporting the investment and causing an inflow of money through investing activities, should be recognized as an indirect value driver.

Meigs and Meigs (1993) contended that the fundamental objective of the financial statements was to provide the company’s financial information to both internal and external users. Internal users utilized financial statements for planning and managing while using of financial statements for external stakeholders varied according to underlying purposes of each individual party. Typically, the company’s conditions would be of concern to the stakeholders by two major ways. The firm’s shareholders or prospective investors, who interested in the return rate of their invested capitals, were most likely to concern more on how the firm could operate profitably to create the value of their stocks. Instead, the firm’s creditors (suppliers, short-term and long-term lenders), whose concerns were on the capability to service debt principle and interests, were likely to interest more on the firm’s
solvency. Accordingly, the financial indicators disclosed on financial statements would then be focused differently among these stakeholders. To grant credit, supplier or short-term lender would assess the firm based on the financial factors associated with the firm’s liquidity, said, quick ratio or liquidity ratio. The financial factors expressed long-term service ability such as interest coverage ratio or debt ratio seemingly was observed by lenders, whereas, financial profit indicators were to be used mainly by investors and shareholders. As conversed by Meigs and Meigs (1993, p. 27):

Solvency is critical to the very survival of a business organization—a business that becomes insolvent may be forced into bankruptcy by its creditors. Once bankrupt, a business may be forced by the court to stop its operations, sell its assets (for the purpose of paying its creditors), and end its existence.

Thus another key responsibility of the managements in addition to raising fund to run business wisely, they needed to be good in balancing financial operation and having disciplines to meet debt obligation. In the short-term, a business organization had to maintain liquidity in response to supplier’s claims whereas it was necessary for the firm to strengthen its ability to service financial institutions or lenders for long-term debt coming due. Meigs and Meigs (1993) also emphasized that in reality, it was very possible to see independency between profitability and solvency. That was, the firm operated profitably but was running short of cash to payback suppliers and vice versa. Both cases ruined the firm’s growth prospects. According to Meigs and Meigs (1993), for long term survival, those factors supported to each other; profitability caused the business solvency, in turn, solvency encouraged the firm profitability. This aligned with the well established investment theory that the consistent flow of capitals from investors assisted the firm to stabilize the flow of cash and wealth that finally returned to those investors.

Profitable-oriented behavior of investor mentioned by Meigs and Meigs (1993) in the previous discussion actually was very reasonable and logical. Similarly, Brigham and Ehrhardt (2005) cited that, most investors focused mainly on profitability and were willing to bear on risks adhering to profitable project because most of them typically could diversify their portfolios to mitigate risks while the firm’s manager could not; their reputation were bound to a single firm. The firm’s suppliers or lenders tended to share the same situation with the manager. This caused them to view one firm differently.
Debt service capability was vital to a firm itself, investors and other related parties since it was the influential factor causing or escaping the bankruptcy risk. Bankruptcy cost a lot the country and economic system; it not only directly destroyed the firm and its suppliers but also brought together disastrous chain that eroded confidence and public interests (Brigham and Ehrhardt, 2005). It was documented in Brigham and Ehrhardt’s work (2005) that the major problem causing failure of the business was difficulties in the firm’s source of capital and overwhelming debt. According to Brigham and Ehrhardt (2005), potentially financial constraint of a firm typically signaled in financial ratio; a skillful financial analyst would be able to foresee and predict bankrupt possibility based on the information disclosed on the financial statements long time before the company went bankrupt.

Copeland et al. (2000) discussed credit health and liquidity of the firm that this factor even did not create values itself but it made for fund used to finance value creation. As per Copeland et al. (2000), interest coverage was one tool used for measuring credit health since the number represented earnings available to service interest expense. In general, interest coverage could be measured by dividing EBITA by interest expense and required payment of preferred dividends.

Damodaran (2002) claimed that there were two questions that investors needed to pay attention in an investment analysis. The first was how risky of investment the firm had involved. The second was about the degree of risks that the firm’s equity investors had faced. Damodaran discussed these questions in terms of the capacity of the firm to supply debts obligation at any points of time. A number of ratios were provided in his discussion. Current ratios, quick or acid test ratios and turnover ratios were advised for measuring short-term liquidity risk while interest coverage ratios was recommended for long-term solvency and default risk measurements. Similar to Copeland et al. (2000), Damodaran pointed out that interest coverage ratios measure the firm’s capability to service interest payments with pre-debt, pretax earnings. The ratio was expressed as EBIT divided by interest expenses. The higher ratio suggested the more secure the firm was. He commented, however, that the numerator of this function (EBIT) could drop rapidly during economics recession. This implied volatility of EBIT that could affect financial condition analysis. In addition, two firms having the same ratio might be viewed far different in terms of risks.

As to Brigham and Ehrhardt (2005), the times-interest-earned (TIE) or interest coverage ratio could be used to assess a firm’s capacity to pay back interest expense however there were
some drawbacks of this ratio. The first thing was this ratio ignoring some other cash fixed charges: debt principal repayment or lease payment. Practically, the firm needed to meet debt obligation on schedule not only interest expense but also principal repayment. On top of that if payment behind the schedule was not allowed, the creditor could force the firm to bankruptcy. Another shortfall discussed by Brigham and Ehrhardt (2005) was the cash flow concerns since EBIT did not reflect available cash flow of the firm to service debt especially the firm with high depreciation and amortization. Because of these shortfalls, the EBITDA coverage ratio had been proposed to solve these issues. Its function could be expressed as the sum of EBITDA and lease payments divided by the sum of interest expense, principal payments, and lease payments. It could be symbolized as follows.

\[
\text{EBITDA Coverage Ratio} = \frac{(\text{EBITDA} + \text{Lease Payments})}{(\text{Interest Expense} + \text{Principal Payments} + \text{Lease Payments})}
\]

Considering the combinations of these theoretical and empirical discussions pertaining to the vitality of debt service capability to the firm sustainability and growth, the researcher brought this factor to the research framework to see how the stock price responded to this financial factor based upon empirical data collected from the media and publishing industry of the stock exchange of Thailand.

2.2.1.7 Investment in non-core business

As to the definition given in several academic sources, investment was a mean to create wealth by involving some levels of risks or uncertainty (Downes and Goodman, 1990; American Heritage College Dictionary, 1993; Reilly and Brown, 2006). Due to its vitality to the value of the firm as the value generator, theoretically it was assumed to be the one of the financial principle that needs attention from financial managers.

In reality, the firm’s value could be driven by two major factors. The first one was value added from the firm’s core business. Another way was through non-operating activity, which basically involved investing firm’s assets in non-core business. According to Damodaran (2002), the ability and the quality to reinvest in the new assets to acquire market opportunities, expand channel of distribution or even acquire other firms would determine a firm’s growth rate. Additionally, value association of investment was prominently discussed by Damodaran (2006, p. 218):
Thus, the value of a firm can be written as the sum of three components: the capital invested in assets in place, the present value of the economic value added by these assets, and the expected present value of the economic value that will be added by future investments.

This was very consistent with Hirschey and Nofsinger (2008) that the value of assets in essence was brought out by additional profits created by investing such assets.

Investment played a central role in the perception of the financial managers, analysts and investors with good reasons. According to Meigs and Meigs (1993), certain companies chose to grow through acquiring or combining another company as an associated legal vehicle; by this way the company was be able to alleviate the competitive forces, to penetrate into the new line of market or even to gain new technical know-how in addition to getting tax benefits and double or triple size of assets and capitals.

Damodaran (2002) cited that some profitable companies invested to gain the whole voting control on unprofitable corporation with an intention to relieve tax burden by absorbing operating loss to repel future profits. In Damodaran’s opinion, this is the way of increasing the firm and stock value using tax burden through investment in non-core business.

Interestingly, Brigham and Ehrhardt (2005) pointed that investing in another corporation could serve as the one of several ways to minimize tax for the firm with excess cash but lack of internal chance of investment; this was because the losses shared from another firm could currently turn to be tax savings for another profitable firm. Considering these advantages and the value linkage of investment in associated firm, the researcher was inspired to scrutinize whether investment in non-core business could influence the stock performance of the firms under media and publishing industry.

### 2.2.1.8 Capital structure

The discussion of capital structure so far has been surrounded by several issues related to the target capital structure level (Hull, 1999), its effect on profitability (Abor, 2005), its influence on new financing decision (Pilotte, 1992) and so forth. To understand capital structure theory, it was useful to initially ground some underlying ideas related to the censures and compliments of debt and equity financing.
To gain the competitive edge and to keep the business growing, all firms had to be supported by a consistent flow of existing products and innovation (Brigham and Ehrhardt, 2005). In accomplishing that, the firm had to maintain enough capitals to cover operating costs. Generally, there were three sources of funds, by which the capital requirements could be supplied. Firstly, the operation could be fueled by way of reinvesting retained earnings or retiring marketable securities. This was considered as raising funds internally. Secondly, the firm could propose the new project to financial institutions to get loan or issue somewhat fixed income security (debt security or preferred stock). Lastly, the fund could be acquired through publically offering fresh common shares to the market. Pros and cons were inherently attached to those methods, by which the firm would be differently affected.

Brigham and Gapenski (1997) contended the good features of debt in terms of tax deductibility of interest expense that in turn could reduce the cost of debt. Another good point was the fixed return feature of debt that limited the future profit to be shared only among shareholders. For the dark side, raising debt also possibly brought in consequent financial contraction. Additionally, too much debt could result higher bankruptcy risk. Finally, such higher risk would increase the cost of debt since new debt holder might expect higher return to cover the higher risk.

According to Brigham and Ehrhardt (2005), risk of bankruptcy could further shrink the firm value due to decreasing of free cash flow caused by losing of customers from such bankrupt rumor. Nevertheless, they pointed that too much debt could positively affect the firm’s manager to be more careful on their spending, which would higher free cash flow. However that situation could also negatively dominate the firm’s manager to ignore profitable but risky project. Then underinvestment problem as a new issue would be imported to the firm.

Theoretically and practically avoiding bankruptcy risk adhering debt capital, the firm could alter its option to raise equity capital. However the firm without debt might face business risk incurred by shortage or volatility of capital resort required to support future project, consequently fluctuating the consistency of ROIC (Brigham and Ehrhardt, 2005).

As to the mixture of advantages and disadvantages of debt and equity financing, for long time the topic of capital structure had been debated. The discussion was formally kicked off by Modigliani and Miller.
Modigliani and Miller (1958) argued that in the world of free of tax, default risk, agency problem, the firm value was not affected by the firm capital structure; it was the firm’s investment quality that influenced value. The reason was the cost of capital, the significant factor in valuation model would be constant since cost saving from engaging debt would be offset by cost increased by posting riskier when using more debts. Nevertheless in the later paper of 1963, Modigliani and Miller introduced bankruptcy risks and corporate taxes to relax their earlier assumptions and found that corporate tax benefit adhering to debt financing could drop the level of WACC (weighted average cost of capital). As it was theorized that value of the firm could be derived from discounting expected future cash flow to the firm at the WACC through infinity, thus if the cost of capital was changed, logically it should have some affects on firm value. This logically brought out the implication that firm value was affected by level of leverage usage.

In Graham & Dodd’s security analysis, Cottle et al. (1989) documented their views on the chain that link capital structure to the firm’s share price as follows:

The preponderance of academic opinion and empirical data support the position that typically the appropriate use of debt will maximize the market value of corporation. In other words, there is an optimum capital structure, and leverage does affect value. Thus a corporation’s capital structure will, indeed, impact its market value, and an optimum capital structure will maximize the value of firm. (p. 584)

The conversation of value connection of capital structure was as well picked up by Brigham and Ehrhardt (2005). They exposed that the revenues of any firms derived mainly from sales, which must be funded by some amounts of capital. The source of fund typically was from raising debt and/or equity. The combination of these two financial factors theoretically referred to the firm’s capital structure. According to Brigham and Ehrhardt, there was mutual believing around the financing decision that each firm had its own optimal capital structure. The optimum level instead of steadying would vary across time in accordance with the company’s operation. In addition, to identify the optimal structure was uneasy and the broad deviation range from the best level might happen with immaterially impact to the stock price. However it was commonly realized that such optimum existed and would maximize firm’s value and stock price.
Similarly, Damodaran (2006) explained that financial leverage level could influence firm value with the same reason that cost of capital was affected by the proportion of debt and equity that the firm raised to finance their project. He extended that with regarding to the valuation model, prominently, value of a firm could be obtained from the interaction between free cash flow and cost of capital that was directly influenced by embedded tax benefit factor and the anticipated leverage risk. Thus capital structure logically should affect share price.

The argument related to capital structure influenced the establishing of trade-off theory. The theory discussed the balancing of usefulness of debt and its side effect of bankruptcy risk; the materiality of the theory was clearly emphasized that capital structure decision of each firm should be based on its financial condition; the company’s manager must consider the company’s current financial status, volatility of earnings, operating leverage and business risk that might involve. Additionally as per Brigham and Ehrhardt (2005, p. 560), trade-off theory suggested that “the value of a levered firm is equal to the value of an unlevered firm plus the value of any side effects, which include the tax shield and the expected costs due to financial distress”. This vital clue insisted that value of a firm was influenced by capital structure.

Another theory was discussed by Brigham and Ehrhardt (2005) that signaling theory was also brought out for the arguments. The theory discussed asymmetric information between firm’s manager and investors. Internally realizing the positive prospect of the firm, manager preferred to issue debt instead of fresh equity to finance the project. This was to avoid sharing the prospective profit with new stockholders. The theory gave the implication that debt financing signaled good prospect of firm and kept stock price rising whereas equity financing inferred opposite situation.

The mixed arguments together with good and bad sides of raising capital inspired the researcher to scrutinize whether stock price responded to the change in the combination of capital structure regarding the investors under media and publishing industry of Thailand equity market.

2.3 Empirical studies

The fundamental objective of constructing accounting reports was to provide the stakeholders the firms’ financial information (Brigham and Houston, 2007). A few pages of the statements contained numerical data that would allow the ones, who understood to visualize the firms’
prospect (Brigham and Houston, 2007). According to Stanga (1976, p. 42), “published annual reports are extremely important sources of corporate information”. Stanga (1976, p.43) also discussed that “the role of accounting data is to prevent superior returns' accruing from inside information...it helps to eliminate insider profits and the related legal problems.” However, to utilize these data effectively required some working knowledge. This fact addressed a question that how much the investors utilize these data to assist their investment decision. To answer this question, many scholars observed the equity markets’ behaviors responding to this forms of financial information disseminated.

From observation, several previous studies spanned various aspects; the major strands relating to this paper were the attempts to determine the market reactions to these disclosures both in terms of the market’s perception on the usefulness of the corporate reports and the relationship between stock prices and accounting variables revealed on the firms’ financial statements. The results of the previous researches with similar objective to this paper were briefly summarized and organized as follows. At first, the researcher reported the findings relating to the role of the corporate reports perceived by the investors. Then, the findings pertaining to stock price reaction upon the published financial variables revealed on the accounting statements were briefly narrated. Together, in this section, other previous papers reporting the role of other financial factors influencing the firms’ performance (dividend, capital expenditure, and so forth) which were of interest of the present paper, would be presented.

### 2.3.1 Usefulness of corporate reports

Stanga (1976) examined disclosure practice of 80 sample firms, which were on the list of Fortune 1,000 for the year of 1973. To come up with his conclusion, Stanga reviewed annual reports of every firms selected and randomly distributed 800 questionnaires to Chartered Financial Analysts, where 34.4% of the total questionnaires were returned. Stanga reported that the disclosure practices amongst firms of the sample industry was found to be indifferent; in terms of the contents, it seemed the small firms tried to disclose the information following the leading firm rather than regarding informational needed of the investors.

The results were reported differently by Epstein and Pava (1995). They studied shareholders' perceptions on the usefulness of the management discussion and analysis section (MD&A) of annual reports by examining questionnaire responded from the sample shareholders, who
owned at least a hundred shares of a stock listed on the American Stock market or the New York Stock Exchange. They revealed that the shareholders perceived the usefulness of the disclosure even the more disclosing also provided competitive disadvantage to the firm; finally, they concluded that this section was tremendous useful tool of investment however in such period of time the investor overlooked its potential, rather, regarded more advantages of the financial statements; in addition, they also reported that according to the demographics of the sample, it was shown that inexperienced but wealthy investors, who did not get used to the accounting figures on the financial statements seemed to consulted and relied more on this section of the report.

Users’ perceptions on corporate reporting were investigated by Naser, Nuseibeh, and Hassaini in 2003 by disseminating 400 questionnaires to eight target users including institution and individual investors, bank and government officer, analysts, stock brokers, academics, and auditors. According to the research, Kuwaiti users viewed that the traditional accounting statements incorporated in the corporate annual reports were the most reliable section while they did not stress the importance of nonfinancial data included in the same corporate report due to its less credibility. In addition, other findings were also reported that in making decision, the respondents relied heavily on such the information communicated by the firms without consulting other external sources of information and information timeliness and data reliability were the most significant regarding the Kuwaiti users’ concerns.

Another paper was researched by Razeen and Karbhari in 2004 to investigate the opinions of the users utilizing the corporate annual report in Saudi Arabia. The findings derived from descriptive statistics and non-parametric analysis based on 303 questionnaires gathered from various parties involving in the financial investment. It was reported that income statements and balance sheet were the significant source employed by these respondents to assist investment decisions whereas the statement of cash flow was far less useful in the eyes’ of these stakeholders.

Similar to Razeen and Karbhari, Alattar and Khater (2007) conducted the research to see how the stakeholders in the capital market in Qatar perceived the benefit of the firms’ annual reports. Descriptive and non-parametric statistics were employed to analyze the data. Based upon the 150 questionnaires that were distributed to several parties of interest such as private and corporate investors, analysts, financial institution officer and government officers, the researcher reported that the usefulness of annual report was realized from the respondents
especially the mandatory financial statements comprising balance sheet, income statements, statement of cash flow, and the note to these statements were rated as the key and understandable sources of the firm’s financial information.

Obviously, several researches discussed so far had the similar conclusion that investors perceived the usefulness of corporate reports together with financial and accounting information incorporated as a useful tool in decision making. Nevertheless, stock price relevance of the financial variables expressed on the accounting statements was also of interest. As presented in the following section.

2.3.2 Market reaction to financial variables

2.3.2.1 Book value and Earnings

Varaiya et al. (1987) researched to examine firm value relevance of growth and profitability. The researchers employed multiple regressions to estimate the model, where the ratio of market to book value was regressed on return on equity and growth rate. The sample firms must be equipped with data availability used to estimates of their values (earnings growth rate, cost of capital and expected return on equity). As a result, 362 and 302 firms in 1978 and 1983 respectively were drawn from the list of industrial firms provided by Standard and Poor's 400. Two separated years were studied with an intention to investigate the predicted effect stability of the model. The findings indicated that shareholder value was influenced by earnings growth rate and profitability.

With the concerns whether the stock markets of different countries adopted the same International Accounting Standards (IAS) similarly perceived the benefit of accounting information, Graham and King (2000) investigated value relevance of accounting variables perceived by the investors of six countries in Asia: the Philippines, Indonesia, Malaysia, Thailand, Taiwan, and Korea. Their curiosities were aimed on the valuation of book values and earnings based on the residual income model popularly employed by the other researches of this field. The data pertaining to the analysis were obtained from the database of the Worldscope Global Researcher covering the fiscal years of 1987 to 1996. Accounting data were mainly retrieved from the financial statements of the listed firms exclusive of financial institutions and insurance companies. For Thailand, the dataset contained 596 firm-year observations. Stock prices were regressed on per share values of book value and earnings and
the results indicated the existences of the relationship between stock prices and accounting variables across the countries even there were different in the powers to explain the phenomena. The result also showed that in Thailand, the explanatory power of book value was greater than earnings in most of the periods in focus.

With the question whether accounting information was really useful for investors or was only the required documents provided according to the regulation, Ibrahim et al. (2002) conducted the research examining investors’ consideration to use accounting information in determining the firm’s market price. The data were pulled from the Corporate Handbook database during the period of 1990 – 1997. Excluding banking industry, the researchers selected 100 top market capitalization firms listed in Malaysian equity market. The data were regressed over market valuation model first introduced by Landsman (1986). The model allowed a separated regression coefficient of total book value of assets and total book value of liabilities, which both were balance sheet entities and presented as the predictors of market value of equity. This study concluded that investors perceived the usefulness of balance sheet numbers and utilized them to determine the market value of all firms. This result contributed further evidence to current issue of Malaysian capital market about value relevance of balance sheet numbers.

According to El Shamy and Kayed (2005), the relationship of accounting data and market price of equity was validated based upon crossectional and time-series data of 559 firm-year observations during 1992 – 2001. All firms were listed on the Kuwaiti Stock Exchange (KSE) and were partitioned into different industrial sectors. The regression analysis was employed to estimate the parameters in the valuation model and examine the relationship between the variables of interest. To scrutinize the value relevance of accounting data perceived by Kuwaiti investors, the accounting variables of earnings and book values were selected to yield the general conclusion. The findings were revealed that these two accounting variables were positively associated with the market price of stocks. Whereas earnings information assumed greater influence on the stock price in the normal circumstance, book value content appeared to be stronger in the situation of the firm experiencing negative earnings. The model was more suitable for explaining the relation in the food and industrial sectors than financial and service sectors. Earnings added more explanatory power to the model than book values in investment-financial, real-estate, and service sectors while book
values was better for industrial firms. The greater information content of earnings beyond book values was a special highlight found by this research.

With an intention to investigate how local and foreign investors in the Egyptian equity market related published accounting information to stock price when deciding their investment, Ragab and Omran (2006) empirically examined value relevance of accounting information and investors’ behavior. 59 out of 66 listed firms were picked from the emerging market database during 1998-2002. Such numbers excluded 3 firms with incomplete data availability and other outliers. All data were scaled on the stock return model and price model by pooled cross-sectional and time series analysis. The return model employed to assess the usefulness of earning levels and earnings changes as the stock return determinants. The price model then had been utilized by plugging book value of equity and accounting earnings (EPS) into the model with an intention to determine the relationship between such variables and market value of the firm. Both models provided consistent result of value relevance of accounting information in the Egyptian market that firstly, Egyptian investors concentrated more on contemporaneous earnings level than earnings changes in stock valuation; this implied short-term horizon characteristics of the market. In addition, no significant relationship of earnings changes to stock return; this contradicted previous researches. Secondly, earning level and earnings changes are not substitute since stock return cross-sectional variation can be better explained by both variables not alone. Thirdly, price model expressed the same by showing positive & significant result, meaning that earnings level is relevant to market price of stock. Consequently, this study provided investment implication that complementary information was of the essence for the market rather than only relying on published accounting information for better stock valuation.

Tan and Lim (2007) studied the response of market participants on accounting variables announced of biotechnology organizations. The samples were pulled from Compustat, AMEX, and NASDAQ, of which the final sample of firm-year of 2,229 observations were yielded. The basic valuation model of Ohlson was employed by allowing other accounting variables into the model (R&D expenditure, selling and admin expenses, earnings and growth forecasted by financial analysts). Earnings and book values were still assuming the consistent role in explaining the phenomena however for biotech corporations, even the value relevance was detected for book values and earnings, the relationships were non-linear. The other financial factors from income statement (spending on R&D and sell, general and
administration) were also considered as stock price determinants but the analysts’ forecasted factors included did not enhance the model explanatory power.

Concerning on the performance of residual income model widely used in many empirical studies, Pirie and Smith conducted their 2008 research with an intention to clarify their concerns through theoretical background review and the empirical evidence of examining value relevance of accounting variables using residual income model. Malaysian equity market was targeted. All firms in the covering of ten year periods during 1987-1996 with availability of each variables data were incorporated regardless of any individual characteristics. The per share data of market price, book value, earnings, dividend and net capital contribution were collected and regressed over seven models modified from basic price model, which restricts to only book value and earnings. The rest variables mentioned were plugged into the basic model to create the new model. The model was also modified to capture the variation by allowing fixed effect and random effect.

Pirie & Smith empirically revealed the finding as follows. The residual income model being examined in their research, which allowed for two ways fixed effects of firm-time, provided a theoretical framework for exploring the relationship of accounting variables to share price. The results indicated that the preferable model for Malaysian market is two ways fixed effect that incorporated both individual firm and time period effects into the model. Such conclusion was from the surfacing of higher explanatory power from 32.95 to 71.37 percents when plugging into the basic model the two specific effects as mentioned. Other findings also had been suggested that current book equity value and current earnings have explanatory power for market price of stock beyond other variables. However some variations in stock price remained unexplained and major part of variation that could be explained caused by fixed effects, this implied value relevance of other variables beyond some presented in this paper.

Lastly, Pirie and Smith’s research shared mutual findings with others and the work of Ragab and Omran (2006) that it was more effective to estimate value by focusing both book value of equity and earnings instead of focusing one variable alone. An effectiveness of residual income model proved by this paper benefited related parties (researchers, investors and managers) who intended to use it for business performance monitoring.
2.3.2.2 Dividend

Pettit (1972) conducted his research to examine market efficiency hypothesis through investigating whether the dividend announcement information was reflected in the security prices. The monthly data of approximate one thousand of ordinary dividend announcements of 625 listed New York Stock Exchange companies were gathered during the periods of January 1964 to June 1968. Daily scenario also was investigated based on the daily data of 135 announcements during 1967-1969. The regression results lent support that market participants employed dividend information to assess security prices. That was the market was efficient since the stock prices reflected dividend contents on both scenarios.

Watts (1973) examined the crosssectional and time series data of 310 companies in US during June 1945 to June 1968 to investigate how the market responded to dividend information and found the result differently from Pettit (1972). His study suggested that the relationship between future earnings and dividend announcement was existed; this was in accordance with the established hypothesis about earning and dividend. Nevertheless, the researcher further pointed that, in turn, regarding the investigation on the response of the market to dividend announcement; the conveyed information of dividend could not influence the investors’ opinion on the firms’ stock prices.

Asquith and Mullins (1983) analyzed dividend payment records of 168 corporations listed on NYSE and ASE. To study the impact of such payments on shareholders wealth, the researchers investigated the data collected from the firms with their initial payments and the firms with their resumed payments after hiatus periods of 10 years. The periods of interest covered the payment after the year of 1963 and lasted to 1980 thus the 10 years hiatus was during 1954 to 1963. After examining of the daily average cumulative excess returns, which were calculated from daily stock return behind announcement dates, the results suggested the positive association between the size of dividend and excess return. In addition, the increasing of payments after the prior payments for the same firms indicated larger relation among the variables. The results of this research reflected the valuable contents of dividends announcements perceived by the investors.

Lonie et al. (1996) examined the association of the stock market to dividend information for the firms listed on the United Kingdom capital market. With an intention to study consequential reaction to the dividend-earnings signals through dividend announcements, the
researchers employed event study in scrutinizing informational content of dividend and also utilized the regression analysis to check the interaction between abnormal return and earnings-dividend news. The sample of 620 firms that announced dividend during 1 January to 30 June 1991 was focused. As to the conventional methodology of event-study; daily share return surrounding announcement days of the focused period were observed by the researchers. For the second stage of interaction testing, the researchers had regressed abnormal stock return on the predictors, which were the percentage change of earnings and dividends together with dummy variables. To the event study, the researchers reported that dividend announcements affected share return performance. To the interaction analysis, earnings news constituted signal to the market while dividend played a partial substituting role of signaling mechanism.

Hughes (2008) investigated the response of firm value on dividend of both ordinary and special payments in the United Kingdom stock market by adopting General Method of Moments to estimate the model with an intention to control the effects of firm-time specific. The research was based on the panel data of the firms in United Kingdom collected during the period of 1994 – 2005 totaling 8,559 observable samples. Hughes’s finding showed statistically significant relation between dividend payment and corporate value. This suggested that United Kingdom investors absorbed the information contents of dividend payment to adjust their views about the firm value or stock price. Hughes also pointed that the result also implied that dividend information was used to signal profitable prospect of the firm by the managements.

Except for the finding pertaining to dividends and stock prices suggested by Watts (1973), other researchers found that the market reacted upon the dividend informational announcement.

2.3.2.3 Capital expenditure

McConnell and Muscarella (1985) examined the relationship between corporate capital expenditure decisions and the market value of the firm of 658 organizations including industrial and public utility organizations publicizing their plans of future investment in capital expenditure. Based upon their findings, such investment plan had significantly positive relation with the firms’ stock price for the industrial corporations while the association of both factors was not exist in public utility corporations. Regarding these
evidences, they interpreted that the firms’ managers employed capital expenditure decisions announcement as a tool to maximize stock return.

Kerstein and Kim (1995) primarily concerned whether changing of capital expenditures signaled incremental value of firm as to the traditional views pertaining to capital investment. The researchers pulled 14 years data during 1976-1989 of 153 manufacturing firms totaling to 2,142 observations of firm years data to examine their concerns. OLS was employed to analyze the relationship between earning growth and capital expenditure by also allowing growth and risk effects into the model and finally the researchers came up with the results that were consistent with the conventional view of value relevance of capital expenditure.

Kim (2001) studied the firms’ future performance association of capital expenditures by regressing future earnings on capital expenditures. The observations of this study comprised 515 firms covering the time period of 1976 to 1994. The researcher focused especially on manufacturing industry due to its capitalized nature. In Kim’s study, firstly based upon entire samples, it was not found linear relation between the variables of interest. Also, after the samples were partitioned into two groups, success and nonsuccess, which were identified by their profits and losses after committing such capital investments, the finding then showed weak association between the factors. However, after further eliminating the losses performance from the observations with the view that losses was not perpetuate, in turn, positive coefficients of capital expenditure were resulted; this finally provided positive association between future earnings and capital expenditures.

Seeking for insight of the firm earning performance and capital expenditure decision in the Taiwan Stock Exchange, Jiang et al. (2006) investigated the effect of capital expenditure investments and earnings performance based on panel data of 357 listed manufacturing companies across the sample time series of 1992-2002. They separated the data into two periods: investment periods and performance tracking periods. The regression model was employed to analyze the data and the result reaffirmed the traditional results indicating the significantly positive relation between the two factors of interest. According to their results, the researchers also discussed that the announcements plans provided a good omen for Taiwanese investors regarding the investment context.

Echevarria (2007) discussed the dark side of investment decision of any firms as a trigger of agency costs because in many cases it was questioned by owners about the value of such
investment. Whether it caused the company overly growing and instead benefits managers themselves rather than the company. However it was generally accepted that capital investment could change the fate of the firm. This motivated Echevarria (2007) to conduct the research on capital investment and the profitability, in other words, examining capital investment performance of sample firms.

Echevarria (2007) examined capital investment and the profitability to support different hypotheses. One related to capital expenditures and was hypothesized that there was positive relationship of capital expenditure level and the operating profit margin. A sample of industrial companies in Fortune 500 was aimed. The unique set in terms of profitability and growth opportunities was held. In addition, these firms possessed different levels of capital investments and sales. All samples have been required availabilities of operating results for twenty years during 1971 to 1990. The first ten years formed baseline period; the rests were the period of performance analysis. The data were pulled from the Compustat PC-Plus CD ROM-based data set. The final sample set of 380 firms were resulted after filtering out 8 outliers and some firms with less than six years data. Based on operating profit improvement, these data then were divided into 4 quartiles containing 95 firms each. The firms in quartile one were highest improved means in operating profit margins and those in quartile four represented the lowest. In examining the relationship, operating profit margin was assumed as a capital investment function, which was expressed as a fraction of capital expenditure and sales level.

According to Echevarria (2007), the output of data processing suggested positive correlation between changes in capital expenditure level and operating profit margins. This could be traced from the resulted figures showing the increased level of capital expenditure of the firms in quartile one from 5.65% to 8.23%, which was consistent with the increasing from 12.39% to 16.47% of operating profits level. In opposite, capital expenditure of the firms in quartile four dropped from 9.18% to 7.45% resulted falling of operating profit level from 17.08% to 11.49%. However according to regression analysis to test the robustness, it was shown that capital investment did not tend to produce higher operating performance as expected. In this case the researcher concluded that agency problem effect might cause incurring of this incidence. In addition to affirming the benefit of capital investment and the situation of Fortune 500 industrial firms pertaining to this matter, the research provided the
pathways to extend the research such as constructing specific data subsets to derive optimal capital expenditure rates.

Based upon the various papers discussed so far, the mixed results were reported regarding the relationship between firms’ value, stock return, future profitability, and capital expenditure.

2.3.2.4 Operating working capital

Rayburn (1986) conducted the research with the fundamental interest in the market response to the information of the firms’ operating performance. The researcher anchored her examining into the equity market reaction to the information contents of operating cash flow and accrual. The sample comprised 175 U.S. firms over the time span of 1962 to 1982 exclusive of bank and utility members. Financial data were obtained from the financial statements, where earnings before extraordinary transactions adjusted by accrual items of depreciation, deferred taxes and working capital changing was the proxy of cash flow from operation. Stock return data during the focused periods were regressed on the independent variables of interest to estimate the model. The research’s findings provided the direct evidence to support the theory of the incremental information content of operating working capital and accrual adjustments, of which the explanatory power of operating cash flow was significant beyond the 20 years periods covered and more consistent than the accruals. In sum, the distributed information of operating cash flow was included in the informational sets by the market in assessing the security values.

Extending the research of Rayburn done in 1986, Ali (1994) distinguished his work by proposing nonlinear relation of stock price and operating performance regressors: cash flow, working capital from operation, and earnings. Accounting factors on balance sheets and income statements were assumed as the data proxies. Pooled regression analysis had been conducted on the dataset of 468 to 816 NYSE and AMEX firms spanning 1974 till 1988, totaling 8,820 firm-year observations yielded. Nonlinear relation between the factors of interest was detected as expected; the results were in accordance with the financial theory that operating working capital provided informational contents to the market participants.

Teruel and Solano (2007) investigated whether the management of working capital could influence the firm’s profitability. The Spanish panel data of 8,872 firm-year observations of small and medium-sized enterprises (SMEs) during 1996 to 2002 were obtained to examine
the phenomenon of interest. These dataset were filtered from the original base, AMADEUS database, where those firms selected must have less than 250 employees with smaller than 27 and 40 million Euros of total assets and turnover respectively. The return on assets (ROA) represented firms’ profitability, the endogenous variables and derived from earnings before interest and tax divided by assets. The proxies of working capital management were defined as accounts receivable turnover, inventory turnover, accounts payable turnover, and the joint of these ratios (cash conversion cycle). In addition to these, other variables also were introduced into the model: firm’s size, sale growth, debt level, and GDP growth. Teruel and Solano (2007) allowed two ways fixed effects of firm and time in estimating the model. From analysis, the researchers founded the positive relation between profitability and firm size, sale growth, and GDP growth. As expected, big firms tended to generate more favorable profitability and this got along with the growth indicators both internal indicator (sale growth) and external indicator (GDP growth) while the firms with unfavorable profitability were likely to have higher level of debt caused from delay of payments. The main concern was also clarified that the ROA of SMEs could be better when the managements shortened the cash conversion cycle.

Nobanee and AlHajjar (2009) investigated whether there was the association between working capital management and the firms’ profitability. The researchers obtained firm-year data of Tokyo Stock Exchange firms listed during the time period of 1990-2004, where the final dataset of 2,123 firms were exclusive of financial Japanese firms. Account receivable (AR) turnover period, inventory turnover period, cash conversion and account payable cycle represented working capital management factors. The financial data on accounting statements relating to sales, inventory, account receivables, account payable, and investment return were the main panel of data proxies. All of these explanatory variables were regressed on investment return separately. The results indicated the strong negative association of cash cycle, AR and inventory cycle to the return on investment; this suggested that the shorter the cash cycle was, the higher the profit resulted. Also, the negative relation between payable period and return was as expected; this suggested that if the manager could properly manage to extend the payment period while maintaining credit reputation, then the firms’ profitability would be improve.

All the previous papers discussed in this section contended that the managers could improve the firm’s performance, which, finally resulted in better stock performance by managing the
firm’s working capital. This confirmed the association of market perceptions and working capital.

2.3.2.5 Debt service capability

Elston (2002) investigated the association of growth, size to the firm’s liquidity by observing the firms listed on the German Stock Exchange and on the Neuer Markt, which was the new capital market established to supply fund to the new technological and innovative young firms. The sample unbalanced panel data were drawn based on their availability during 1997 until 2000 from several databanks including Deutsche Bundesbank, and the Hoppenstedt, which resulted the final 820 observed data of 341 firms traded on the Neuer Markt. The additional 295 German firms listed on the German Stock Exchange were from the Bonn database. The firm-year fixed effect regression analysis was utilized. Employee number was the proxy of growth. Cash flow, which derived from the sales revenue after taxes, was the liquidity constraint proxy. To this notion of impact of liquidity on the firms’ growth, the researcher specifically took into the account the new smaller firms listed on the Neuer Markt in comparison to the old firms listed on the traditional market. The reason for that was from the idea that the smaller and younger firms typically faced difficulty in accessing into the traditional public capital and possessed little capacity to secure their debts. To formulate the conclusion on this, the growth of employment then was investigated in relation to the liquidity for two markets and the results were yielded consistently to the expectation to confirm the effect of liquidity on growth.

According to Elston (2002), for the Neuer Markt, the small firms had higher growth rate than the large firms, whereas, the large firms were growing faster than the small ones in another old market, which implied that seemingly, the objective of establishing the Neuer Markt as the source of fund to the new industry was accomplished. In addition, the results reflected that the new technological industry started to play important role in today German industry.

Fagiolo and Luzzi (2004) studied the effect of liquidity constraints on the firms’ growth and size based on the financial data reported on the balance sheets of all Italian manufacturers. The dataset spanned 1992 to 2000 containing all firms with more than 1 million Euros sales for at least one year during the period covered. Cash flow ratio was assumed as the proxy of liquidity; annual employee data, sale, and net operating profit after taxes were then employed as the measures of size and growth. The panel data analysis yielded the regression results,
which indicated the linkage of liquidity and firms’ size and growth. That was that the constraint of liquidity negatively affected the firm growth rate and the firms encountering more liquidity problem appeared to have less growing and more unstable pattern of growth. Additionally, the firm sizes tended to have more negative impact on firms’ growth when the firms faced more severe constraints.

The result reported by Elston (2002) was similar to Fagiolo and Luzzi (2004) that liquidity had direct impact on growth performance.

### 2.3.2.6 Investment in non – core business

Gathering inter-firm partnering announcements reported in the Financial Times and the Wall Street journal newspapers spanning 1987 to 1991, Das et al. (1998) examined the data to study the impacts of inter-firm associations on the market price of firms’ equities. The final sample of 119 announcements comprised 40 and 79 announcements of technological and marketing cooperation respectively. Based on event study, the researchers utilized the stock return around the announced date to observe the value relevance of the information released. The regression analysis was also used to identify the relationship between stock return and the firm’s profitability and size relating to the announcements. The results surfaced that the stocks of the member firms with the technological cooperation possessed better performance in the market than the marketing alliance, of which, the smaller member appeared to gain better benefit than the larger member.

Chen et al. (2001) based their studies about stock prices effects of investment opportunities and free cash flow upon all the Taiwanese firms traded on Taiwan Stock Exchange with the condition that those sample firms had to initiated the investment announcements in China during the years of 1991 to 1995. The Excellent Business Database provided the information of the firms’ announcements and finally, the database yielded 71 business corporations with 95 announcements, of which, the main data of investments belonged to food and textile industry. The empirical results demonstrated the conclusion that the market positively responded to the firms’ announcements for the firms having bright opportunities of investment whereas the opposite response arose for the firms with unfavorable opportunities. In addition, free cash flow did not found to be the influence of firms’ wealth in Taiwanese firms.
Morgado and Pindado (2001) obtained the panel data during 1990 – 1999 of 135 listed firms from two main sources (Spanish Security Exchange Commission and Madrid Stock Exchange) to examine the association between firm value and investment. The researchers used generalized method of moments (GMM) to estimate the model and found that the relationship between the variables of interest was nonlinear or quadratic, which implied the existence of optimal investment level. The researchers concluded that with the presence of the optimal level, any firms with the investment lower or higher than this level would be suffering from their investments. In addition, the firms having bright investment opportunity could enjoy with higher level of optimum than the firms lacking of valuable opportunity.

Campart and Pfister (2002) researched whether the inter-firm formation announcements provided the informational content to the stock market participants by basing their investigation on the 18 and 47 of pharmaceutical and biotechnological firms respectively with 237 announcements on Reuters. At that time, all firms were traded on New York Stock Exchange or NASDAQ and the dataset spanned the years of 1995 through 2000. Event study and regression analysis were employed as the tools to analyze the data and the results were turned to be consistent with their expectations. The market positively responded to the announcements of collaboration. The market value of equity together with profitability among the alliances was created higher resulted from the partnering. The researchers also indicated that the smaller member firm retaining the crucial assets of technological know-how could generate more stock return related to the integration.

Brio et al. (2003) researched to investigate the association of the investment to value of the firms traded on the Spain equity market. The researchers employed the Generalized Method of Moments (GMM) to estimate the parameters based upon the panel data of 553 crosssectional and time-series observations derived from 80 listed Spanish companies during the periods of 1990 to 1997. The finding reaffirmed the incremental information contents of investment announcement whereas divestment announcement possessed opposite effect on stock price. Also, the researchers discussed that the market evaluated the firms differently regarding the perceived opportunity derived from the investment.

In sum, the research’s findings were consistent with the investment theory that the market perceived the prospect affecting the firm’s growth opportunity from the investment announcement.
2.3.2.7 Capital structure

Pilotte (1992) studied the stock price response to new financing. 397 listed firms on NYSE and AMEX during 1963 to 1984 were selected containing four categories based on their dividends announcements: 120 no-dividends, 100 initiating, 84 suspended and 75 high-stable firms. The result that share prices positively reacted to the various types of growth measurements indicated that the market concerned the growth opportunity related to debt financing, rather than the kinds of debt offered (ordinary or convertible offerings). The investors reacted differently to the firms in different category (growth or mature); for the firms offered new security both debt and equity, the investors reacted more positive to the growth firm than the mature firm. Then, after assuming the constant of various growth opportunities throughout the samples, the security’s riskiness turned to play important effect to shape market participants’ view. That was, in the perception of investors, it was different between debt and equity offerings and also the level of riskiness of the debt instruments as evaluated by the rating agency was of the concern.

Additionally, Pilotte (1992) found that the market reaction to debt/security financing did not associate with the level of the firm’s free cash flow before financing offering. Overall result supported two aspects of security offering. Firstly, the market regarded the riskiness of instrument and growth opportunity resulted after new financing. Secondly, in comparison to debt offering, it appeared to be consistent with the signaling theory that stock market reacted negatively to equity offering.

Lewis et al. (1996) examined the response of the market participants to the firms’ management decision to issue convertible debt to finance the project and growth opportunity after financing. The researchers gathered the financial data of 422 firms that issued convertible debts to finance their projects during the periods of 1978 till 1986. 297 out of 422 firms were traded on NYSE and AMEX and the rests of 125 firms were listed on NASDAQ. Multivariate regression analysis was utilized to analyze response of stock price to the variable of market to book ratio, which represented the firm growth opportunity, and other variables including the dummy variable of credit quality. The regression results were consistent with the investment theory. That was that the price of a firm was influenced by the opportunities of growth or the profitability of the firm raising capital through debt offering. Especially, the
relationship between the variables appeared to be stronger when analyzing the data of the firms in the same industry.

Hull (1999) examined market reaction to a firm debt ratio regarding industry leverage norms. The U.S. Firms with new offerings of common stock during the periods of 1970-1988 were targeted. The final panel data contained totaling 338 observations. The researcher employed OLS to estimate the empirical model and examined the reaction of market participants to the firm having debt to equity ratio away from and close to the industry leverage norm. The finding indicated that market reacted positively to the firm with the leverage ratio close to the norm. The result implied that to a certain extent the market assumed the industry norm as the target capital structure and also it was reasonably estimated. The researcher, consequently, concluded that the results were consistent with the capital structure theory, which emphasized pros and cons trade-off of debt effect and the wealth maximization of the optimal debt to equity structure.

Joshua Abor (2005) observed the listed firms in Ghana to study the profitability relevance of capital structure. All listed firms on the Ghana Stock Exchange during 1998-2002 were aimed and 22 firms were qualified profitability. Leverage ratios were analyzed included firm size and sales growth as control variables. EBIT to equity the ratio was assumed as a proxy of profitability. Leverage ratio was measured by three ratios: short-term / long-term / total debt to the total capital. The findings were revealed that significantly positive relationship existed between short-term debt and ROE, and total debt to total assets and ROE while negative relationship presented for long-term debt to total assets ratio and ROE.

The mixed results and non-compelling conclusion regarding value relevance of capital structure are the underlying reason inspired Cécile Carpentier to conduct the research on the valuation effects of long-term changes in capital structure. As documented in Carpentier’s research (2006), most of the researches had been done so far restricting to short term window investigation and having not truly ascertained the relationship of capital structure to valuation. The researcher based the study on French firms for the period of 1987-1996. Such data was from Corporate Information on the World’s Leading Companies, organized by Worldscope / Disclosure. The final sample was limited to the firms with availabilities of market-to-book ratios data for the whole interested period. Thus only 243 firms out of 660 French firms were selected. An effect of debt and equity structure changes on firm value was
examined in the long-run. The null hypothesis of this research was “capital structure changes did not affect firm value”. The researcher employed bivariate non-parametric model to test the hypothesis. According to the data of the research at the error level of five percents, the statistical null hypothesis would be rejected when the Chi square valued greater than 3.84. To this research, with the Chi square of 0.52, it was fails to reject the null statistical hypothesis; meaning that it was independent between changing in debt and changing in value. Multivariate parametric regression model was used to test reliability of the hypothesis. It was shown that no significant relationship between the debt level and firm value. Consequently, multivariate non-parametric model was utilized to check the strength of finding and it was resulted the same conclusion. This paper was the initial one benefiting related parties as the empirical source of information affirming the independence of capital structure and valuation as to long term effect.

The empirical researches relating to capital structure and firm value discussed in the section provided mixed results. Most insisted the value relevance of capital structure. In reverse, Carpentier (2006) found that capital structure was irrelevant to the firm value while Abor (2005) found negative relation between long-term debt ratios and return rate but positive association of short-term debt ratios and return rate.

2.3.2.8 Previous value relevance researches relating to media and publishing industry

After conducting the literature review, it was found that previous value relevance studies in media and publishing industry are still rare, particularly the studies in Thailand. Most of the past value relevance studies as discussed in this chapter were conducted by relying heavily on large sample (cross-industrial analysis) or the whole equity market-based analysis.

In addition, some of prior media industry researches in other countries have involved mainly in social issues. For example, Wilkinson (1999) examined the contents in new media and social perception of risk. Byrne and LeMay (2006) investigated organizational perceptions of quality of information communicated through different media. Vickery et al. (2004) examined the performance of different media in carrying rich information.

Similarly, prior researches in Thailand media and publishing industry also have mostly related to social or non-financial studies. Such studies include the following examples.
CHAPTER 3

RESEARCH FRAMEWORK

The chapter contains three sections. In the first section, the theoretical frameworks from acceptable sources are presented. These frameworks ground the concept, which supports the conceptual framework of the current paper. The second section formulates the present research’s conceptual framework based on the theories discussed in the first section. The final section of this chapter introduces the established research hypotheses, which correspond to the research questions of this study.

3.1 Theoretical framework

The conceptual framework of this paper was built on two theoretical bases. The first base relates to the role of financial statements in financial reporting system and the second base relates to the equity valuation concept and the residual income model.

The proposition of the relationship between fundamental financial components of firms and security valuation has been widely discussed for decades. The discussions were based on the general facts that accounting statements are provided with the purpose of reporting the firms’ financial conditions and profitability performance (Meigs and Meigs, 1993; Brigham and Gapenski, 1997; Stowe et al., 2002; Brigham and Ehrhardt, 2005; Damodaran, 2002; 2006; Penman, 2007; TAS1, 2009).

Regarding the role of financial statements in mirroring the firms’ financial status, it was argued that, theoretically, the value of securities of any firm should absorb the financial information released on the firms’ financial statements in addition to absorbing the effects of other information. In the past thirty years, several researchers such as Stanga (1976), Epstein and Pava (1995), Naser et al. (2003), Razeen and Karbhari (2004), and Alattar and Khater (2007) have tried to address the role of corporate reports and found that such reports maintain important positions in the perceptions of investors. The notion of this proposition was also exhibited by Damodaran (2006) as the basic premise of a firm, where its value is the integration of financial components presented on financial statements. Damodaran (2006) depicted financial statements of an ongoing firm in Figure 3.1. According to Figure 3.1, the
firm values of any firms are the combination of the value of existing owners’ assets and the anticipated additional value of assets to be generated from future opportunity. With respect to this fact, the current conceptual framework is theoretically founded that the fundamental financial factors on the published financial statements are value relevant.

Figure 3.1: A firm value as the combination of existing assets and growth assets.

\[
\text{Stock value} = \text{Book equity} + \text{Non-realized premium}
\]

Penman (2007) concluded that residual earnings valuation gives special respect to fundamental investors, who put hard weigh on the value of the equity on the balance sheet while honor less to uncertain continual value.

The value of the equity in the concept of abnormal income model can derive from combining the firm’s book equity with the value of anticipated residual earnings discounted at the anticipated required rate of return on stock (Stowe et al., 2002; Penman, 2007). Many other researchers, such as El Shamy and Kayed (2005), Ragab and Omran (2006), Rahman and Mohd-Saleh (2007), Tan and Lim (2007), and Pirie and Smith (2008) have adopted the RIM as the theoretical concept by expressing the market price of stocks as a function of current book equity and earnings. According to them, the basic stochastic regression form of this model is expressed as:

\[ V_{CS} = \beta_0 + \beta_1 BVE + \beta_2 E + u \]

Here,

- \( V_{CS} = \) Closing price of equity at the ending period \( t \)
- \( BVE = \) Disclosed book equity per share at the ending period \( t \)
- \( E = \) Disclosed per share earnings for the period \( t \)
- \( u = \) unobservable effects represented other information affecting equity price

As seen, the model shows a linear relation of stock price to book equity, earnings, and information relating to other accounting variables with an intention to explain the usefulness of such figures perceived by investors in valuing stock (Rahman and Mohd-Saleh, 2007). Stowe et al. (2002) posited that the RIM applied in the prior recent papers mostly has been influenced by the contributions of the endeavors of Feltham and Ohlson (1995) and Ohlson (1995). Nevertheless, the similar model was also found in the earlier researches of value relevance conducted by Landsman (1986), and Lev (1989). The application of the model is mainly in researching whether the market responds to financial statement variables. In other words, it assesses whether investors employ financial statement variables in stock valuation. Among prior recent studies, it includes the empirical studies of Graham and King (2000), Barth et al. (2001), Ibrahim et al. (2002), Hand (2003), Hand and Landsman (2005), El Shamy and Kayed (2005), Ragab and Omran (2006), Rahman and Mohd-Saleh (2007), Tan and Lim (2007), and Pirie and Smith (2008).

As to the basic form of the RIM, the model comprises two key components -- book equity and earnings. Penman (1997) explained that these two components are the bottom line figures
in financial statements, where the values of these numbers aggregate substantial piece of information. Also, according to Penman, book equity measures net value of balance sheet assets used for producing earnings, while income statement earnings measures return generated by the assets. In that regards, if the market value of the equity is influenced by book equity and earnings, other financial factors driving earnings should also influence the market value of the equity. This is consistent with Brigham and Ehrhardt’s dictum (2005) that residual profit after tax available to debt holders, investors, and shareholders is created and determined by free cash flow and that free cash flow derives from revenues and cost of operation. Brigham and Ehrhardt (2005) also pointed out that the firm’s profitability resulted from good decision of the management relating to operations, human resource, and future investment has a direct impact on a firm’s value or wealth of stakeholders. Figure 3.2 demonstrates that a firm’s value is the function of debt and equity and that its value is diluted by the cost of capital and operation, while being driven by free cash flow from revenues and future investment.

Figure 3.2: Value of a firm as a function of debt and equity and influenced by free cash flow and the cost of capital.

3.2 Research framework

In examining whether investors trade stocks regarding fundamental financial factors disclosed on the accounting statements, prior researchers (Feltham and Ohlson, 1995; Ohlson, 1995; Barth et al., 2001; Hand, 2003; Rahman and Mohd-Saleh, 2007) adopted the residual income model as their theoretical model, where the market value of equity is a function of current book equity and current earnings. They suggested that the existence of the relationship between the market value of equity and the financial statement variables (book equity and earnings) indicates that the investors perceive the usefulness of financial statement variables and employ them to adjust their views on equity value. This has been a practical method in researching whether investors employ financial statement variables in stock valuation and widely adopted by many prior researchers such as Landsman (1986), Lev (1989), Feltham and Ohlson (1995), Ohlson (1995), Graham and King (2000), Barth et al. (2001), Ibrahim et al. (2002), Hand (2003), El Shamy and Kayed (2005), Ragab and Omran (2006), Rahman and Mohd-Saleh (2007), Tan and Lim (2007), and Pirie and Smith (2008).

Similar to these prior researchers, the researcher of this paper adopts the residual income model as the theoretical base to formulate the current research framework to address the relationship between the market value of equity and financial statement variables. In addition to the residual income model, the researcher also adopts the theoretical model (Figure 3.2) as introduced by Brigham and Ehrhardt (2005) as another base to formulate the current research framework.

According to Brigham and Ehrhardt (2005), value of equity is influenced by several financial factors such as revenue, operating asset, required investment in operations, financing decisions, and other financial factors. In this respect, the current research framework then is formulated. Figure 3.3 illustrates the current research framework, where the market value of equity is driven by several fundamental financial statement factors (book equity, earnings (net income), dividend, net operating working capital, capital expenditure, debt service capability, investment in non-core business, and capital structure). According to the current research framework, the researcher includes other financial factors in addition to book equity and earnings into the model. This is based on an intention to extend prior researches by examining whether the market value of equity is also sensitive to the change of other financial statement factors in addition to book equity and earnings.
The attempts to explore whether other factors, in addition to book equity and earnings, affect stock prices were also made by several prior researchers: Amir and Lev (1996) studied value relevance of both accounting and non-accounting factors by adding into their model the factors of population coverage and penetration rate. Ibrahim et al. (2002) studied the relationship between stock value and book value of assets and liability. Rahman and Mohd-Saleh (2007) observed another angle by hypothesizing whether free cash flow agency problem can weaken the value relevance of earnings and book equity. Pirie and Smith (2008) plugged into his model other financial factors (per share dividend, net capital contribution, and expected earnings) in addition to book value and earnings.

Figure 3.3: Research framework

<table>
<thead>
<tr>
<th>Independent variables (Fundamental financial variables)</th>
<th>Dependent variables</th>
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<tbody>
<tr>
<td>Book Value of Equity</td>
<td>Market Value of Equity</td>
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<tr>
<td>Earnings (Net Income)</td>
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<tr>
<td>Dividend</td>
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<td>Capital Expenditure</td>
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<tr>
<td>Net Operating Working Capital</td>
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<td>Debt Service Capability</td>
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<td>Investment In Non-core Business</td>
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<tr>
<td>Capital Structure</td>
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3.3 Hypothesis statements

In the light of the major concern discussed in the problem statement of the first chapter and the above information, it is now appropriate to indicate the main research hypothesis that parallels the main research question.
The main research question stated:

*Do the investors trade the security regarding fundamental financial factors disclosed on the accounting statements?*

In this regard, I hypothesize the following statement.

The main research hypothesis stated:

*The investors trade the security regarding fundamental financial factors disclosed on the accounting statements.*

When investors employ fundamental financial statement variables to support their equity investment decisions, the relationship between financial statement variables and equity value exists (Barth et al., 2001). Also, the association of data on financial statement with stock value indicates that financial statements provide useful information to investors (Hand, 2003; Rahman and Mohd-Saleh, 2007). In accordance with these statements, the main research question and hypothesis are re-worded to the following statistical research question and hypothesis.

The main statistical research question stated:

*Is there a statistically significant relationship between the change in fundamental financial factors and the change in the market value of equity?*

The main statistical hypothesis stated:

*There is a statistically significant relationship between the change in fundamental financial factors and the change in the market value of equity.*

As discussed, similar to the prior researches, the current study incorporates book equity and earnings into the research framework. In addition, this research extensively examines value relevance of other financial factors. As a consequence, the main statistical hypothesis is cascaded down into the following sub-statistical hypotheses (Statistical hypothesis 1 to 8) regarding the independent financial variable on the research framework. This supports the tests of the relationship between each financial factors of interest and market price of equity.
With respect to the first two variables, book equity and earnings, the reason of sticking to these variables lies on their importance to the equity valuation. Penman (1997) said that they are the bottom line figures that investors need to anchor when valuing a stock. The theoretical relation between book equity and share price exists as presented by Downes and Goodman (1990), Meigs and Meigs (1993), Brigham and Gapenski (1997), Stowe et al. (2002), Brigham and Ehrhardt (2005), Damodaran (2002; 2006), and Penman (2007). Also, this was empirically confirmed by the investigations of Graham and King (2000), Ibrahim et al. (2002), El Shamy and Kayed (2005), Ragab and Omran (2006), Tan and Lim (2007), and Pirie and Smith (2008). In that regard, together with the first statistical research question, the first null form companied by alternative statement is established.

**Statistical research question 1:**

Is there a statistically significant relationship between the change in the book value of equity and the change in the market value of equity?

Given statistical research question 1, the first statistical hypotheses are:

**Statistical Hypothesis 1:**

H$_{10}$: There is no statistically significant relationship between the change in the book value of equity and the change in the market value of equity.

H$_{1a}$: There is a statistically significant relationship between the change in the book value of equity and the change in the market value of equity.

Theoretically, earnings (net income) growth drives value of a firm and its stock performance (Meigs and Meigs, 1993; Copeland et al., 2000; Keown et al., 2003; Brigham and Ehrhardt, 2005). Also, typically, stock analysts focus on net income and use it to figure out earnings per share when they evaluate a firm’s financial status (Cottle et al., 1989; Downes and Goodman, 1990; Meigs and Meigs, 1993; Damodaran, 1996; 2002; 2006; Brigham and Gapenski, 1997; Copeland et al., 2000; Stowe et al., 2002; Keown et al., 2003; Brigham and Ehrhardt, 2005; Penman, 2007; Hirschey and Nofsinger, 2008). Its connection with stock value were empirically researched and insisted by Varaiya et al. (1987), Graham and King (2000),

**Statistical research question 2:**

Is there a statistically significant relationship between earnings (net income) growth rate and the change in the market value of equity?

**Statistical Hypothesis 2:**

Given statistical research question 2, the null and the alternative statements of the hypotheses can be worded as follows:

\[ H_{20} \]: There is no statistically significant relationship between earnings (net income) growth rate and the change in the market value of equity.

\[ H_{21} \]: There is a statistically significant relationship between earnings (net income) growth rate and the change in the market value of equity.

The proposition of dividend informational contents has been widely discussed for long time by several scholars including Modigliani and Miller (1961), Meigs and Meigs (1993), Copeland et al. (2000), Damodaran (2002; 2006), Brigham and Ehrhardt (2005), Penman (2007), and Siad (2007), while the conclusions are varied between relevance and irrelevance. The controversial arguments caused establishing several theories relating to dividend (For example, bird-in-the-hand theory, tax preference theory, signaling hypothesis, and clientele theory). The past empirical results were found to support value relevance of dividend including the studies of Pettit (1972), Asquith and Mullins (1983), Lonie et al. (1996), and Hughes (2008). An interesting finding was discussed by Watts (1973) that the relationship between future earnings and dividend announcement exists; nevertheless, dividend information can not influence the investors’ opinion on the firms’ stock prices. In view of these situations, the researcher formulates the third question and statistical hypothesis.
**Statistical research question 3:**

Is there a statistically significant relationship between dividend growth rate and the change in the market value of equity?

Given statistical research question 3, the null and the alternative statements of the hypotheses are:

**Statistical Hypothesis 3:**

$H_3_0$: There is no statistically significant relationship between dividend growth rate and the change in the market value of equity.

$H_3_a$: There is a statistically significant relationship between dividend growth rate and the change in the market value of equity.

The theory establishes that capital expenditure is used to support core business to generate new cash and to create economic value to the firm in a long run (Downes and Goodman, 1990; Meigs and Meigs, 1993; Brigham and Ehrhardt, 2005; Damodaran, 2002; Libby et al., 2009). It is a value driver of a firm, particularly, in the capital-intensive industry (Downes and Goodman, 1990). Nevertheless, the previous researches reported the results that maintained to support and conflict the theory. McConnell and Muscarella (1985) found that the association of capital expenditure and stock price does not exist in public utility corporations, but it presents in the industrial corporations. Kerstein and Kim (1995) and Jiang et al. (2006) found that capital expenditure is value relevant, whereas Echevarria (2007) shown that capital investment does not tend to produce higher operating performance as expected. These arguments dominate the fourth question and statistical hypothesis.

**Statistical research question 4:**

Is there a statistically significant relationship between the change in the capital expenditure and the change in the market value of equity?

Given statistical research question 4, the following hypotheses were worded:
**Statistical Hypothesis 4:**

H4₀: There is no statistically significant relationship between the change in the capital expenditure and the change in the market value of equity.

H4ₐ: There is a statistically significant relationship between the change in the capital expenditure and the change in the market value of equity.

The connection found between the level of operating working capital, the firm’s profitability, and its stock performance is prominent and unanimous in the established financial theory suggested by several scholars including Downes and Goodman (1990), Copeland et al. (2000), Stowe et al. (2002), Brigham and Ehrhardt (2005), Damodaran (2006), Reilly and Brown (2006), Fabozzi (2007), Hirschey and Nofsinger (2008). The empirical evidences supporting the theory were also revealed by Rayburn (1986), Ali (1994), Teruel and Solano (2007), and Nobanee and AlHajjar (2009). This influences the fifth statistical research question and hypothesis, which are established to test the generalization of the theory in the Thai market.

**Statistical research question 5:**

Is there a statistically significant relationship between the change in the net operating working capital and the change in the market value of equity?

Given statistical research question 5, the null and the alternative forms of the hypotheses can be stated as follows:

**Statistical Hypothesis 5:**

H5₀: There is no statistically significant relationship between the change in the net operating working capital and the change in the market value of equity.

H5ₐ: There is a statistically significant relationship between the change in the net operating working capital and the change in the market value of equity.
Brigham and Ehrhardt (2005) pointed out that free cash flow impacts a firm’s value. In this respect cash flow is the factor that ties debt service capability to the market value of equity. This is based on the fact that credit health and the firm’s liquidity, though do not create values directly, make fund to be used to finance value creation (Copeland et al., 2000). Consistently, it also were quoted by scholars (Meigs and Meigs, 1993; Copeland et al., 2000; Damodaran, 2002) that debt service capability as the manifestation of a firm’s liquidity and credit health is an important factor attracting the flow of funds from creditors and investors. The empirical facts conspiring to confirm the connections of these variables were also documented by Elston (2002) and Fagiolo and Luzzi (2004). The question and hypotheses below are established based on these discussions.

**Statistical research question 6:**

Is there a statistically significant relationship between the change in the debt service capability and the change in the market value of equity?

Given statistical research question 6, the following null and alternative hypotheses are indicated:

**Statistical Hypothesis 6:**

H$_{60}$: There is no statistically significant relationship between the change in the debt service capability and the change in the market value of equity.

H$_{6a}$: There is a statistically significant relationship between the change in the debt service capability and the change in the market value of equity.

Theoretical evidences, which relates the value of equity to investment in non-core business are found in several academic works of scholars such as Downes and Goodman (1990), Meigs and Meigs (1993), Copeland et al. (2000), Damodaran (2002; 2006), Brigham and Ehrhardt (2005), Reilly and Brown (2006), and Hirschey and Nofsinger (2008). According to their citations, the investment makes continual flow of existing operation and also broadens new opportunity. The value relevance of investment opportunities were widely evidenced by researchers from other countries, for example, Das et al. (1998), Chen et al. (2001), Morgado
and Pindado (2001), Campart and Pfister (2002), and Brio et al. 2003. These postulations dominate the following question and hypotheses.

**Statistical research question 7:**

Is there a statistically significant relationship between investment in non-core business growth rate and the change in the market value of equity?

Given statistical research question 7, the null and the alternative statements of the hypotheses can be indicated as:

**Statistical Hypothesis 7:**

H$_{70}$: There is no statistically significant relationship between investment in non-core business growth rate and the change in the market value of equity.

H$_{7a}$: There is a statistically significant relationship between investment in non-core business growth rate and the change in the market value of equity.

The proposition of capital structure in relation to firm value has majorly been influenced by the seminal efforts of Modigliani and Miller (1958; 1963) for nearly half a century. The controversial arguments have been widely made and also the empirical evidences have been varied. This can be found in the academic documents of Cottle et al. (1989), Brigham and Gapenski (1997), Brigham and Ehrhardt (2005), and Damodaran (2006). Amongst several empirical evidences, capital structure is found to be relevant (Pilotte, 1992; Lewis et al., 1996; Hull, 1999; Abor, 2005) and appears to be irrelevant (Carpentier, 2006). Thus, it is appropriate to form the question and hypotheses as follows:

**Statistical research question 8:**

Is there a statistically significant relationship between the change in the capital structure and the change in the market value of equity?

Given statistical research question 8, the following null and alternative hypotheses are suggested.
Statistical Hypothesis 8:

H₈₀: There is no statistically significant relationship between the change in the capital structure and the change in the market value of equity.

H₈ₐ: There is a statistically significant relationship between the change in the capital structure and the change in the market value of equity.

In regard to 95 percent of confidence interval, the criteria of failing to reject the null statement or accepting the statistical alternative hypothesis can be stated as follows:

- Failing to reject the null when probability value is greater than the erroneous risk level of .05.
- Accepting the statistical alternative hypothesis when probability value is less than the erroneous risk level of .05.
CHAPTER 4

RESEARCH METHODOLOGY

This chapter intends to discuss research methodology of the present study. Without this chapter, an effort to investigate the problem, draw conclusions and deliver the results of this research could not have been possible. Regarding the main purpose and the conceptual framework, the researcher designed the research methodology to process historical data and pull out statistical information used in empirical analysis. This chapter contains four sections. Those of them are planned to communicate stepwise study methods. The contents range over the methods of the research used, data description and collection procedures, and statistical treatment of data. Further details associated with each section will be discussed later. In addition, the expected empirical model was, herein, constructed correspond to the research framework. The model characteristics and measurements of dependent variable and each predictor are as well described in this chapter.

4.1 Methods of research used

To the extent of research purpose as described by Sekaran (2003), a descriptive study engages an effort to understand the variables of the study. This effort is examination of the characteristics of variables, which naturally exist in a situation, and consequently enhances the knowledge about the phenomena of interest (Sekaran, 2003). For hypothesis testing, Sekaran (2003) pointed that the study itself involves analytical and predictive attempts that help enhance the knowledge of the relationship among variables of interest.

Also, it was advised by Arttachariya (2008) that descriptive research concerns with an attempt to explain both qualitative and quantitative data; matrices or tabulations are used to convey data features and report overall picture for further interpretation. For hypothesis testing, it involves an effort to predict relationship among variables based upon theories (Arttachariya, 2008).

Together with these, Buglear (2001) suggested that descriptive methods are the techniques utilized for describing data set; it is a very effective communicating tool in delivering the meaning of a set of observed data in just a few numerical numbers (Buglear, 2001).
According to Buglear, gaining data interpretation skill, a researcher could understand and communicate this statistical information at a glance.

Black (2004) explained that in studying statistics, people study the two key areas: descriptive statistics and inferential statistics. Black pointed out that descriptive statistics involves studying the data collected from any group to explain and discuss the characteristics of such similar groups; it included the efforts to measure central tendency, variability and shape of the data. Inferential statistics involves two main processes of estimating parameters and testing hypotheses with an intention to infer the phenomena of the population on the basis of the sample data taken (Black, 2004).

Gujarati and Porter (2009) postulated that in order to assume whether the statistical model could empirically determine the interested variables in the real world content, statistical criteria must be developed to assess peculiarity of a model to a specific data of study; this assessment process is in accordance with a statistical theory called hypothesis testing, which is one of the two branches of statistical inference.

Similarly Wooldridge (2009) documented in his work as follows:

Statistical inference involves learning something about a population given the availability of a sample from that population. By population, we mean any well-defined group of subjects, which could be individuals, firms, cities, or many other possibilities. By “learning,” we can mean several things, which are broadly divided into the categories of estimation and hypothesis testing. (p. 747)

With reference to the quotations of several authors relating to the research methods and the main purpose of this paper, the researcher employed descriptive and inferential statistics (hypothesis testing) as the investigating methodologies to examine and analyze the panel data and then draw the statistical implications of the present study.

4.2 Data description and collection procedures

The significant feature of economic data generally exploited in the empirically economic and financial researches can be classified into three types: time series, cross-sectional, pooled and panel data (Gujarati and Porter, 2009). Similarly, Wooldridge (2009) also structured the set of
economic data available for the applied work as a cross-sectional, a time series, a pooled cross-section and a panel data set. In the light of the meaning described by Gujarati and Porter (2009), cross-section analysis involves observation from various units at the same period of time. Wooldridge (2009) took the same view on this; however, he also narrated the additional character:

Sometimes, the data on all units do not correspond to precisely the same time period. For example, several families may be surveyed during different weeks within a year. In a pure cross-sectional analysis, we would ignore any minor timing differences in collecting the data. If a set of families was surveyed during different weeks of the same year, we would still view this as a cross-sectional data set. (p. 5)

In a time series set of data, the data of variables are gathered from one unit of interest for a given period of time (Gujarati and Porter, 2009). Wooldridge (2009) shared the same view that a time series data contain the related data for a unit in attention over time periods.

Furthermore, Wooldridge (2009) cited that for a pooled cross-section, the data possesses both aspects of time series and cross-section. Panel data also shares this feature. However, the key feature of panel data that distinguishes them from a pooled cross-section is that “the same cross-sectional units are followed over a given time periods” (Wooldridge, 2009, p.10). This is in accordance with Gujarati and Porter (2009, p. 591), who mentioned that “in panel data the same cross-sectional unit (say a family or a firm or a state) is surveyed over time”.

In the research field, the empirical data sometimes are not available for some variables or some periods of interest; that is the subject has different observation numbers; in this situation, the panel data is called unbalanced panel (Gujarati and Porter, 2009).

According to Wooldridge (2009, p.847), “unbalanced panel means a panel data set where certain years (or periods) of data are missing for some cross-sectional units”. Wooldridge (p. 835) also evidenced that in opposite, balanced panel is “a panel data set where all years (or periods) of data are available for all cross-sectional units”.

As discussed in the introductory section, in passing, this research anchors attention to the SET firms under the Thailand media and publishing industry with two reasons. The first is due to its influential role to citizens, societies, and economies both in the country and global
stages. Secondly, this industry generally is defined as the informational and content industry (based on ISIC Revision 4.0 developed by United Nations, 2008). People also realize that its value and stock performances are primarily driven by soft factors or intangible properties such as human (creative artist and the like), intellectual assets (creative content and so forth) (Biagi, 1994; 2010; Berman, 2004; Flew, 2004). Based upon this fact, the researcher wonders whether financial factors on financial statements can explain the movement of the equity prices of the content and media firms in addition to the intangible variables.

In that regard, the target observations are all the SET firms traded publicly under Thailand media and publishing industry. Thailand media and publishing firms were identified from two databanks: the web site of the Stock Exchange of Thailand and the Bloomberg database. According to the master list as of July 24, 2009 retrieved from the Stock Exchange of Thailand, there were 25 firms listed under Thailand media and publishing industry. The entire list of these firms with their names and tickers are demonstrated in Table 4.1.

According to the primary intention, the researcher aims to employ the balanced panel data set of the entire firms on the list (25 firms) across the periods of 1990-2008. The balanced dataset was required with an intention to mitigate the undesirable effect of the unbalanced panel most likely having been encountered by the statistical package (EViews). Such effect would cause the software to drop out unbalanced data in a specific year or firm from statistical processing. Nevertheless, regarding availability of financial statement and stock price data of the target industry in the Bloomberg database, the initial raw dataset was trimmed to yield the balanced dataset. As a consequence, the final set of the balanced panel of 20 different firms spanning 2004-2008 was resulted equivalent to 100 observations of firm-year data. Table 4.2 defines the final list of the firms targeted to be investigated.

Table 4.1

An Entirely Initial List of Thailand Media and Publishing Firms *Traded In the Stock Exchange of Thailand

<table>
<thead>
<tr>
<th>Firm Ticker</th>
<th>Firm Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>APRINT</td>
<td>AMARIN PRINTING AND PUBLISHING PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>AS</td>
<td>ASIASOFT CORPORATION PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>BEC</td>
<td>BEC WORLD PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>EPCO</td>
<td>EASTERN PRINTING PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>Firm Ticker</td>
<td>Firm Name</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------</td>
</tr>
<tr>
<td>APRINT</td>
<td>AMARIN PRINTING AND PUBLISHING PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>BEC</td>
<td>BEC WORLD PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>EPCO</td>
<td>EASTERN PRINTING PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>FE</td>
<td>FAR EAST DDB PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>GRAMMY</td>
<td>GMM GRAMMY PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>LIVE</td>
<td>LIVE INCORPORATION PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>MAJOR</td>
<td>MAJOR CINEPLEX GROUP PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>MATCH</td>
<td>MATCHING STUDIO PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>MATI</td>
<td>MATICHON PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>MCOT</td>
<td>MCOT PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>MEDIAS</td>
<td>MEDIA OF MEDIAS PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>MPIC</td>
<td>M PICTURES ENTERTAINMENT PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>NMG</td>
<td>NATION MULTIMEDIA GROUP PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>PFCB</td>
<td>PRAKIT HOLDINGS PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>POST</td>
<td>THE POST PUBLISHING PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>PSAAP</td>
<td>PONGSAAP PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>RS</td>
<td>RS PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>SE-ED</td>
<td>SE-EDUCATION PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>SMM</td>
<td>SIAM INTER MULTIMEDIA PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>SPORT</td>
<td>SIAM SPORT SYNDICATE PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>TBSP</td>
<td>THAI BRITISH SECURITY PRINTING PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>TONHUA</td>
<td>TONG HUA COMMUNICATIONS PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>WAVE</td>
<td>WAVE ENTERTAINMENT PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>WORK</td>
<td>WORKPOINT ENTERTAINMENT PUBLIC COMPANY LIMITED</td>
</tr>
</tbody>
</table>


Note:
* These companies are under media and publishing industrial sector of the master list of companies listed in The Stock Exchange of Thailand.

Table 4.2
The Finally Target List of Thailand Media and Publishing Firms

<table>
<thead>
<tr>
<th>Firm Ticker</th>
<th>Firm Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>APRINT</td>
<td>AMARIN PRINTING AND PUBLISHING PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>BEC</td>
<td>BEC WORLD PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>EPCO</td>
<td>EASTERN PRINTING PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>FE</td>
<td>FAR EAST DDB PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>GRAMMY</td>
<td>GMM GRAMMY PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>LIVE</td>
<td>LIVE INCORPORATION PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>MAJOR</td>
<td>MAJOR CINEPLEX GROUP PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>MATCH</td>
<td>MATCHING STUDIO PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>MATI</td>
<td>MATICHON PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>MEDIAS</td>
<td>MEDIA OF MEDIAS PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>MPIC</td>
<td>M PICTURES ENTERTAINMENT PUBLIC COMPANY LIMITED</td>
</tr>
<tr>
<td>NMG</td>
<td>NATION MULTIMEDIA GROUP PUBLIC COMPANY LIMITED</td>
</tr>
</tbody>
</table>
The financial data related to all the variables of interest were retrieved from the Bloomberg database. The closing price of a firm’s stock at the end of the calendar year was defined as the proxy of the dependent variable, the market value of the equity (MVE). Financial numbers disclosed on the firm’s financial statements (Balance sheet, Income statement, and Statement of cash flow) were assumed as the proxies of those independent variables of interest (BVE, NI, DIV, CAPEX, NOWC, DSC, INV, and CS). The aforementioned balanced panel data required the observations with the presence of the values of MVE, BVE, NI, DIV, CAPEX, NOWC, DSC, INV, and CS. In fulfilling this requirement, the missing values were set to the latest values available prior to the year of data missing. As tabulated on Table 4.3, the tickers of the firms labeled (EPCO, MPIC, and LIVE) on the table are referred to as the firms with missing data, where the row and the column express the variables and years of data missing respectively.

Table 4.3
Illustration of Firm-Year Observations with Missing Data

<table>
<thead>
<tr>
<th>Year</th>
<th>MVE</th>
<th>BVE</th>
<th>NI</th>
<th>DIV</th>
<th>CAPEX</th>
<th>NOWC</th>
<th>DSC</th>
<th>INV</th>
<th>CS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>EPCO1</td>
<td>-</td>
<td>-</td>
<td>EPCO1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>EPCO1</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>EPCO1</td>
<td>-</td>
<td>-</td>
<td>EPCO2</td>
<td>EPCO1</td>
<td>-</td>
<td>-</td>
<td>EPCO1</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2007</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>MPIC2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2008</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>LIVE2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Note:
1 The values of MVE, CAPEX, and CS of EPCO are missing in the years of 2004 and 2005.
2 DIV data are missing in the years of 2004 and 2005 for EPCO and in the years of 2007 and 2008 for MPIC and LIVE respectively.
As to the data measurements, all the variables were measured by taking account of the percentage change of the current value from the previous year value. Table 4.4 symbolically displays the formulae employed to transform the raw data of each variable of interest. In obtaining the percentage changes, there were some observations that such values could not be defined because they had zero as denominators. To tackle this issue and maintain the balanced panel for the specified 100 firm-year observations (20 firms spanning 2004-2008), those fields with indefinable values were set to one.

Table 4.4

Illustration of Variables of Interest and Measurements

**Dependent variable:**

**Market value of equity (MVE)** refers to ending price of equity at the end of the year. The change in the market value of equity is defined as:

$$\frac{MVE_t - MVE_{t-1}}{MVE_{t-1}}$$

**Independent variable:**

**Book value of equity (BVE)** means net assets owned and paid by a firm’s shareholders (year end amount of total shareholders' equity). The change in the book value of equity is defined as:

$$\frac{BVE_t - BVE_{t-1}}{BVE_{t-1}}$$

**Earning or Net income (NI)** refers to net income earned during the fiscal year and is available to common shareholders exclusive of extraordinary items. The change in net income or net income growth is defined as:

$$\frac{NI_t - NI_{t-1}}{NI_{t-1}}$$

**Dividend (DIV)** refers to dividend amount paid by a firm at any fiscal year. The change in dividend or dividend growth is defined as:

$$\frac{DIV_t - DIV_{t-1}}{DIV_{t-1}}$$
Capital expenditure (CAPEX) refers to the total yearend amount of capital expenditure. The change in capital expenditure is defined as:

\[
\frac{CAPEX_t - CAPEX_{t-1}}{CAPEX_{t-1}}
\]

Net operating working capital (NOWC) refers to the sum of yearend balance sheet value of cash, near cash (C), accounts receivable (AR), inventories (I), after subtracting accounts payable and accruals (AP). Symbolically,

\[
NOWC = (C + AR + I) - (AP)
\]

The change in net operating working capital is defined as:

\[
\frac{NOWC_t - NOWC_{t-1}}{NOWC_{t-1}}
\]

Debt service capability (DSC) is measured by taking EBITDA coverage ratio as the measurement. EBITDA coverage ratio can be obtained by the following function:

\[
\frac{EBITDA + \text{Lease Payments}}{\text{(Interest Expense + Principal Payments + Lease Payments)}}
\]

The change in debt service capability is defined as:

\[
\frac{EBITDA \text{ Coverage Ratio}_t - EBITDA \text{ Coverage Ratio}_{t-1}}{}
\]

Note: EBITDA refers to earnings before interest, tax, depreciation, and amortization.

Investment in non-core business (INV) refers to the amount of investment relating to the business exclusive of the core business activity. It derives from the sum of yearend amount of short term investment in marketable security, long term investment, and investment in associated companies. The growth of investment in non-core business is defined as:

\[
\frac{INV_t - INV_{t-1}}{INV_{t-1}}
\]

Capital structure (CS) refers to the yearend debt amount relative to equity. This represents debt and equity that a firm used to finance a project. The change in capital structure is defined as:

\[
\frac{(BVL_t + BVL_{t-1})}{2} + \frac{(BVE_t + BVE_{t-1})}{2}
\]

Note:

BVL refers to the book value of liability at the end of the calendar year.

BVE refers to the book value of equity at the end of the calendar year.
4.3 Statistical treatment of data

It could be told at a glance that this research concerns whether the SET players employ fundamental variables disclosed on financial statements to help them make equity investment decisions. In examining this phenomenon, the association between financial statement numbers and equity price must be determined; an existence of the relation indicates that the security players realize the benefit of fundamental information and apply it when valuing stock price (Feltham and Ohlson, 1995; Ohlson, 1995; Barth et al., 2001; Hand, 2003; Rahman and Mohd-Saleh, 2007).

To clarify the grand concerns of this paper, the researcher employed multiple regression analysis to scrutinize the relationship between equity price and financial statement variables of interest. Also, the researcher exploited Ordinary Least Squares Method (OLS) to estimate the empirical model. This is a practical method in observing the dependency of one variable on another (Black, 2004; Gujarati and Porter, 2009; Wooldridge, 2009), where the magnitude of each explanatory variable is expressed separately in the estimated model. Such magnitude indicates that the value of dependent variable varied correspondingly to one unit change in the value of independent variable.

In dealing with panel data, there may be the possible effect of heterogeneity that affects the response of dependent variable on independent variable (Gujarati and Porter, 2009). To tackle this problem, the researcher allowed the initial model to capture this effect by adding on firm-dummy variables into the original model. As a consequence, the initial model was then modified and transformed into the new model called The Fixed Effect Least-Squares Dummy Variable Model.

Together with this, the researcher adopted descriptive statistics to describe the characteristic of the data of interest by using measure of central tendency and variability to draw information. Lastly, inferential statistics was applied to pull the statistical implications from the estimated model by using the z statistic and the probabilistic value (p-value) to test the established hypotheses. In accomplishing these goals, the statistical package EViews was utilized to facilitate the analytical processes. The rest of this chapter was provided for the brief discussion on the concepts of multiple regression analysis, OLS, statistical problems, and The Fixed Effect Least-Squares Dummy Variable Model.
4.3.1 Regression Analysis

The regression analysis has been assumed to be an analytical tool for economic and financial researches for a long time. It is accepted by econometricians as the simple statistical tool that is used to deliver an empirical determination of the economic laws as appeared in the following quotations.

According to Black (2004, p. 482), “Regression analysis is the process of constructing a mathematical model or function that can be used to predict or determine one variable by another variable.”

The regression technique nature was documented by Gujarati and Porter (2009) in their work that theoretically, regression analysis involves the idea of scrutinizing the degree of statistical dependency of an interested variable (the response factor) on another or other stimulus factors; this is to fulfill an objective in determining an average value of such dependent factor based on values of its predictors; nevertheless, to accomplish the set purpose, it is grounded on data availability of interested variables.

Wooldridge (2009) also addressed that regression model is an empirical device employed by researchers in examining the relationship among variables. According to Wooldridge, the model comprises two important components, of which a regressand depends on another or other regressors.

According to these scholars (Black, 2004; Gujarati and Porter, 2009; Wooldridge, 2009), the regression analysis concerns two variables called simple or bivariate regression analysis. In the simple regression, only one independent variable is used to explain another dependent variable. The simplest form of regression equation could be illustrated as follows.

\[ Y = \beta_0 + \beta_1 X \]

In this equation, \( Y \) refers to dependent variable and \( X \) refers to independent variable. \( \beta_0 \) and \( \beta_1 \) are unknown parameters, which are estimated from the data collected. An intercept term of the equation is generally defined by \( \beta_0 \) and \( \beta_1 \) is referred to as a slope coefficient.
However, in the real world complexity, it is not easy to get a perfect deterministic form of regression equation that independent variable assumes fully explanatory power in determining endogenous; most likely, there may be unobservable factors affecting the dependent variable (Gujarati and Porter, 2009). As pointed out by scholars (Gujarati and Porter, 2009; Wooldridge, 2009), to recognize a stochastic feature as such, the above deterministic model then is reformed. A general probabilistic form is now introduced, where \( u \) represents unobservable factors.

\[
Y = \beta_0 + \beta_1 X + u
\]

Virtually, in the economic or financial world, any interested variable rarely depends on only one stimulus. In most case, more than one variable probably influence such response variable.

As discussed by Wooldridge (2009), simple regression model seems not to be able to come across this sophistication; in this case, multiple regression analysis can cope with the issue relating to variable omission. Also, Wooldridge pointed out that naturally, the more good predictors of dependent variable are incorporated in a model, the more variation in dependent variable can be described; with these advantages, multiple regression analysis assists a researcher to come up with a practical model with powerful prediction ability, as a consequence, it has recently become a popular and efficient analysis tool for empirical researches.

Multiple regression function is governed by similar principle as simple regression but more complicated (Black, 2004). The analogous form could be symbolized as follows (Black, 2004; Gujarati and Porter, 2009; Wooldridge, 2009):

\[
Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots \beta_k X_k + u
\]

where, \( \beta_0 \) defines intercept term and \( \beta_1 \cdots \beta_k \) represents partial regression coefficients of independent variables.

The functions presented earlier are the population regression functions in the forms of bivariate and multivariate models. The population regression line can then logically be drawn on the basis of this function. However, in actuality, most of the financial data are sample data. Determining an empirical content of partial regression coefficients of these population functions has to be performed on the basis of sample data. The scholars (Black, 2004;
Gujarati and Porter, 2009; Wooldridge, 2009) suggested that the analogous model of the population function can be re-expressed as the following sample regression function:

\[ y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + \cdots + b_kx_k + u \]

where, \( b_0 \) defines the intercept term of the sample and \( b_{1..k} \) represents the partial regression coefficients.

To identify the sample regression function of the regression line, it is necessary to estimate the value of the intercept term and the partial regression coefficients (Black, 2004; Gujarati and Porter, 2009; Wooldridge, 2009). This draws the following brief discussion on the method of estimating the parameters.

### 4.3.2 Ordinary Least Squares (OLS)

In statistical theory, ordinary least squares or OLS is a method that is extensively accepted by researchers for determining an intercept term, \( b_0 \) and slope coefficient, \( b_{1..k} \) (Gujarati and Porter, 2009).

As cited by Wooldridge (2009, p. 68), “the multiple regression model is still the most widely used vehicle for empirical analysis in economics and other social sciences. Likewise, the method of ordinary least squares is popularly used for estimating the parameters of the multiple regression model”.

The underlying concept of OLS method is to develop the regression model that has the least squared residual value. In other words, the sample regression line should be closest to the population regression line as much as possible.

Similar to the economics and financial theories, OLS is grounded on some assumptions. The key assumptions of the least squares method require linear parameters, independence between regressors and disturbance, randomness of sample, inexact correlation among predictors, zero value of disturbance mean, constant variance of unobservable terms, independence among errors over times, and normal distribution of errors (Gujarati and Porter, 2009; Wooldridge, 2009).

Theoretically, complying with these assumptions, the least square estimator \( (b_i) \) assumes to be BLUE of the population parameter \( (\beta_i) \); this means that the estimator of the least squared
model is the best estimator possessing linear and unbiased properties (Gujarati and Porter, 2009; Wooldridge, 2009). BLUE stands for Best Linear Unbiased Estimator.

In the real situation, some statistical problems may arise and corrode the BLUE properties. Violation of some assumptions and natural characteristics of the data are the possible causes of the statistical problems (Gujarati and Porter, 2009; Wooldridge, 2009). In this regard, it is recommended that before processing the data, the researcher is required to address these problems. The brief detail of each is now discussed.

4.3.3 Statistical problems

4.3.3.1 Multicollinearity

A statistical data problem arise when a correlation among the predictors of a regression model exists (Black, 2004; Gujarati and Porter, 2009; Wooldridge, 2009). This problem is initially defined as occurrence of perfect association among predictors; nevertheless, today, this term also means a situation of imperfectly high relation among regressors (Gujarati and Porter, 2009). This problem destroys the BLUE properties of the model as the assumption of inexact correlation among predictors is violated.

As pointed by Gujarati and Porter (2009) that in case of perfect collinearity, coefficients of the regressors and their standard errors will be indefinite or cannot be estimated; whereas, the presence of high multicollinearity will result large standard errors and imprecise regression coefficients. In diagnosing multicollinearity, correlational matrix can be used to identify this problem (Black, 2004).

In this study, the researcher employed correlational matrix as facilitated by the statistical software, EViews, to address this problem by assuming pair-wise correlation as expressed on the correlational matrix in justifying incurrence of multicollinearity. Gujarati and Porter (2009) suggested that multicollinearity problem exists when pair-wise correlation amongst predictors is found to be higher than 0.8. Similarly, Wooldridge (2009) stated that when the value of the coefficient of determination is close to 1, multicollinearity problem arise. Wooldridge (2009) added that the word “close” is used to imply no exact number that can be used to justify harmful of this problem. From investigation, there was no multicollinearity
problem encountered. The results of examining multicollinearity will be demonstrated in Chapter 5 of this paper.

4.3.3.2 Stationarity

Gujarati and Porter (2009) defined stationary time series as the time series, of which mean and variance do not vary across times even they are measured at different point of times; in other words, they are time invariant. Similarly Wooldridge (2009) cited that stationary process generates constant probability distribution over periods of time. In this sense, no matter when the stochastic variables are taken in a sequence of time, probability distributions of such variables are all the same (Wooldridge, 2009). Black (2004) also stated that time series is stationary when their data move across times, but the value of such data are not fluctuated by rapidly irregular changes. According to these scholars, the inverse phenomenon to the above situations is called nonstationarity.

As pointed out by Gujarati and Porter (2009), the data in those time sequences are assumed to be stationary; otherwise, the facts found are unlikely to be generalized to different periods of times; that is behavior of a time series under scrutiny is completely worthless for prediction. Nonstationarity is the common problem encountered by researchers and its effect was tremendous. The effect of nonstationarity is terrific as described by Gujarati and Porter (2009). They posited that regressing nonstationary data often causes another phenomenon called spurious problem, where the regression results are nonsense or presents misleadingly (as Gujarati and Porter, 2009, later explained, spurious problem causes the nonsense relationship between uncorrelated variables. For instance, if a statistician regresses one nonstationary variable on other nonstationary predictors, firstly, it is found the association between the variables; however, after differencing those variables and regressing them again, it appears no relation detected).

As explained by Wooldridge (2009), spurious correlation exists when an unobservable term contains variables having influence on the response of dependent variable and also correlating with other regressors; to camouflage such variables in the disturbance, will cause regression coefficients to be biased. As to this importance, before processing the data collected, it is recommended to check whether the time series is stationary. Solving nonstationary problems not only make the model to be generalized but also avoids spurious problem (Gujarati and Porter, 2009). To diagnose health of the data employed if they are
stationary, unit root test is a widely acceptable tool to check this problem (Gujarati and Porter, 2009; Wooldridge, 2009). Once nonstationarity is detected, it is suggested to transform the data by deflating such raw data. As suggested by Gujarati and Porter (2009) and Wooldridge (2009), researchers can deflate the data by differencing the time series with first differences, log differences, or percentage change. In this paper, the variables of interest were measured by taking the percentage change, hence, after diagnosing by using Augmented Dickey-Fuller (ADF) to test unit root, it was found that the dataset employed for regression analysis was stationary.

4.3.3.3 Heteroscedasticity

This problem occurs when there is a problem related to the disturbance term of the regression model estimated, of which the variance of such disturbance does not spread equally – in other words, the variance of the disturbance term is not constant (Black, 2004; Gujarati and Porter, 2009). Similarly, Wooldridge (2009) described that heteroscedasticity problem exists when the homoscedasticity properties of the variance of the unobservable error term is absent. As pointed out by these scholars, the presence of this problem fails the linear regression assumption requiring that the variance of error term must be constant across the different section of the data (it is constant even the values of the regressors vary across different sections).

Gujarati and Porter (2009) further pointed that the existence of heteroscedasticity tends to present when the statistician deals with the cross-sectional rather than time series data. As described by Gujarati and Porter (2009) and Wooldridge (2009), the cross-sectional data typically contains different size of data from the different population members; for time series, the data are gathered from one entity during a time period, thus, the values of the data are likely to be in similar sizes. According to Ibrahim et al. (2002), heteroscedasticity does not ruin unbiased and consistent properties of the regression coefficients. However, the estimated coefficients are inefficient, or their variances are not minimum; consequently, the model estimated is not BLUE (Ibrahim et al., 2002, Gujarati and Porter, 2009).

There are several ways in detecting heteroscedasticity problem including The White test and the Breusch-Pagan-Godfrey (BPG) tests (Gujarati and Porter, 2009; Wooldridge, 2009). In this research, the researcher employed both methods to address the heteroscedasticity in the error variance. Based on the diagnostic results obtained from the statistical package, the
heteroscedasticity problem presented itself. The measure exploited to remedy this problem was Newey-West standard errors method. The details will be discussed in Chapter 5 of this research.

4.3.3.4 Serial correlation (Autocorrelation)

One of the basic assumptions of the least squares method hold that unobservable term must be independent (Black, 2004; Gujarati and Porter, 2009; Wooldridge, 2009). The failure of this assumption causes the estimated model to lose the BLUE properties even the model still possesses the properties of unbiasedness, consistency, and normal distribution (Gujarati and Porter, 2009). Correspondingly, as discussed by Wooldridge (2009), inexperienced econometricians are typically reminded to be aware of the harmfulness of auto-correlated disturbance, where independent variables are the lagged forms of regressand presented in the model. In addition to losing of BLUE, serial correlation also results invalidity of both the estimated t-statistics and standard deviation of the estimator (Wooldridge, 2009). OLS estimators lack the property of minimum variance, and also error variances may be seriously misestimated (Black, 2004).

Because of this terrific effect to the BLUE property of the obtained model, to address this problem before conducting regression analysis is essential. A few methods are statistically proposed to check the presence of this problem including the Durbin-Watson statistics (\(d\) test) (Black, 2004) and the Breusch-Godfrey (BG) test (Gujarati and Porter, 2009; Wooldridge, 2009).

As discussed by Gujarati and Porter (2009), BG test, otherwise known as, LM test is developed to tackle the shortfall of the \(d\) test relating to its underlying assumption that requires the constant independent variables in repetitive sampling; nevertheless, the LM test is applicable to large observations. This method is provided and facilitated by the statistical package in the full title of Breusch-Godfrey Serial Correlation LM Test.

The current research employed Breusch-Godfrey Serial Correlation LM Test in determining serially correlated problem. A few remedial measures were also suggested by these scholars: by including other regressors into the model, and transforming the existent variables taking first difference (Black, 2004), and correcting with the Newey-West method (Gujarati and Porter, 2009; Wooldridge, 2009). However, Gujarati and Porter (2009) proposed that
regarding large observations, the Newey-West error correcting is the practical tool to solve serially correlated problem, especially, when the heteroscedasticity problem also presents itself in that data. In the presence of heteroscedasticity and serial correlation problem, the researcher employed the Newey-West method to solve these issues. The details will also be discussed in Chapter 5 of this paper.

4.3.4 The Fixed Effect Least-Squares Dummy Variable Model

Gujarati and Porter (2009) posited that ignoring the individualities of the subjects can cause incurring of the correlation between the disturbance and explanatory variables (such heterogeneous characters in some situations influences independent variables). According to statistical concepts, this correlation violates the OLS assumption, consequently results biased and inconsistent OLS estimator.

In dealing with panel data (cross-sectional and time series data) employed in this study, the researcher avoided heterogeneous bias by introducing dummy variables into the model. This was suggested by scholars (Gujarati and Porter, 2009; Wooldridge, 2009) as the way to allow the model to grasp the qualitative distinctions among different firms that differently influence the response of the regressand to the regressors.

The output model would then spell out and distinguish such distinctive characters and express as the intercept terms and the regression coefficients of dummy variables instead of camouflaging such diverse qualities among the firms into the disturbance. This technique refers to as the differential dummy variable technique (Gujarati and Porter, 2009).

The approach of granting dummy variables into the model documented here was reflected from the academic evidences discussed by Gujarati and Porter (2009) and Wooldridge (2009). The originally proposed model of this research was modified by incorporating a set of dummy variables. The final empirical model was yielded as expressed in the third equation.

\[(1) \quad \text{MVE}_it = a + b_1 \text{BVE}_it + b_2 \text{NI}_it + b_3 \text{DIV}_it + b_4 \text{CAPEX}_it + b_5 \text{NOWC}_it + b_6 \text{DSC}_it + b_7 \text{INV}_it + b_8 \text{CS}_it + \epsilon_{it}\]
where,

\[ a \] = the common intercept for every firm and year

\[ b_{1...8} \] = the partial regression coefficients for the independent variables of BVE, NI, DIV, CAPEX, NOWC, DSC, INV, and CS respectively.

\[ e_{it} \] = stochastically unobservable variables

\[ MVE_{it} \] = change in the market value of the equity of firm \( i \) at the end of year \( t \)

\[ BVE_{it} \] = change in the book value of the equity of firm \( i \) at the end of year \( t \)

\[ NI_{it} \] = the net income growth rate of firm \( i \) at the end of year \( t \)

\[ DIV_{it} \] = the dividend per share growth rate of firm \( i \) at the end of year \( t \)

\[ CAPEX_{it} \] = change in the capital expenditure of firm \( i \) at the end of year \( t \)

\[ NOWC_{it} \] = change in the net operating working capital of firm \( i \) at the end of year \( t \)

\[ DSC_{it} \] = change in the debt service capability of firm \( i \) at the end of year \( t \)

\[ INV_{it} \] = the investment in non-core business growth rate of firm \( i \) at the end of year \( t \)

\[ CS_{it} \] = change in the capital structure of firm \( i \) at the end of year \( t \)

(2) The modified model after introducing dummy variables of firms could be symbolically written as follows:

\[ MVE_{it} = a + c_i + b_1BVE_{it} + b_2NI_{it} + b_3DIV_{it} + b_4CAPEX_{it} + b_5NOWC_{it} + b_6DSC_{it} + b_7INV_{it} + b_8CS_{it} + e_{it} \]

where,

\[ a \] = the common intercept for every firm and year
The term $c_i$ is a set of firm-dummy variables, the term represented all specific dummy of each sample firm and its individual intercept, which was assumed to be constant across years.

In accordance with the conventional approach of introducing the dummy variables into the model, it was suggested to drop the common intercept term (Gujarati and Porter, 2009). Thus,

(3) The modified model could be re-symbolized by dropping the common intercept ($a$) term and permitting each firm-dummy have its own intercepts:

\[
MVE_{it} = a_s + b_1BVE_{it} + b_2NI_{it} + b_3DIV_{it} + b_4CAPEX_{it} + b_5NOWC_{it} + b_6DSC_{it} + b_7INV_{it} + \\
+ b_8CS_{it} + d_{1}\text{DF01} + d_{2}\text{DF02} + d_{3}\text{DF03} + d_{4}\text{DF04} + d_{5}\text{DF05} + d_{6}\text{DF06} + d_{7}\text{DF07} + d_{8}\text{DF08} + \\
+ d_{9}\text{DF09} + d_{10}\text{DF10} + d_{11}\text{DF11} + d_{12}\text{DF12} + d_{13}\text{DF13} + d_{14}\text{DF14} + d_{15}\text{DF15} + d_{16}\text{DF16} + \\
+ d_{17}\text{DF17} + d_{18}\text{DF18} + d_{19}\text{DF19} + e_{it}
\]

Here,

- $a_s = \text{the intercept value of the last sample firm from the list of the firm selected, that was, the twentieth firm of the list, namely, WAVE company. This firm was treated as the base firm when the researcher introduced the dummy variables into the model. Any order of the sample firms can be selected as the reference base (as Gujarati and Porter, 2009, suggested).}$

- $b_1...8 = \text{the regression estimators for the independent variables of BVE, NI, DIV, CAPEX, NOWC, DSC, INV, and CS respectively.}$

- $d_1...19 = \text{the estimated parameters for the fixed effect dummy variables. Each term represents the different value between the intercept value of the based firm (WAVE) and the intercept value of the rest individual firm, which were, firm 1 to firm19, as enlisted on the Table 4.2.}$

The term $'c_i'$, which was the set of firm-dummy variables, disappeared since it was transformed to be the differential intercept coefficients of dummy variables.
After running the raw data in the statistical package, the ultimately empirical outcome then was estimated as shown in Chapter 5. It was the fixed effect regression model – the word suggested by Gujarati and Porter (2009) and Wooldridge (2009).

According to Gujarati and Porter (2009), “the term ‘fixed effect’ is due to the fact that, although the intercept may differ across subjects, each entity’s intercept does not vary over time. That is, it is time-invariant”. (p. 596)

Described by Wooldridge (2009, p.389), “fixed effects model is an unobserved effects panel data model where the unobserved effects is allowed to be arbitrarily correlated with the explanatory variables in each time period”.

In sum, as to the fixed effect model estimated in this paper, the researcher assigned 19 dummy variables, which were DF01, DF02 to DF19, into the model. Let DF01 equal to 1 for the first firm (APPRINT), and 0 otherwise; DF02 equal to 1 for the second firm (BEC), and 0 otherwise; and so forth. To this study, the researcher assumed the twentieth firm (WAVE) as the based subject. Hence, the term, \(a\), represented the intercept term of the twentieth firm (WAVE). As mentioned, \(d\) represented the different value between the intercept value of the based firm (WAVE) and the intercept value of the rest individual firm, which was firm 1 to firm19. Thus, the combination of the term ‘\(a\)’ and ‘\(d_1\)’ then represented the actual intercept of the first firm (APPRINT). The sum of term ‘\(a\)’ and ‘\(d_2\)’ then represented the actual intercept of the second firm (BEC) and so on. Also, it was assumed that the heterogeneous properties among the firms were constant over time. To allow the different intercepts among the firms under the time constant assumption, this approach was referred to as the one-way fixed effect (Gujarati and Porter, 2009; Wooldridge, 2009).

### 4.3.5 Criteria to test the established statistical hypotheses

In this research, the criteria to test the established statistical hypotheses are defined at 95 percent of confidence interval as follows:

- The researcher fails to reject the statistical null hypothesis when probability value is greater than the erroneous risk level of .05.
- The researcher accepts the statistical alternative hypothesis when probability value is less than the erroneous risk level of .05.
In conclusion, this research aims to observe Thailand media and publishing firms whether the change in fundamental financial variables of their firms is statistically relevant to the change in the market value of equity. To accomplish this, the statistical methods were designed in this chapter to analyze financial data retrieved from the Bloomberg database. The statistical methods used to analyze the data of the targeted 100 firm-year observations involve: using descriptive statistics to describe the general aspects of the financial data of interest and using inferential statistics to pull statistical implications. In examining the relationship between the factors of interest, the current researcher employs the fixed effect multiple regression to analyze financial data. The regression analysis process also involves several tests to ensure compliance with the required assumptions of the least squares method: testing of stationarity, multicollinearity, heteroskedasticity, and serial correlation.
CHAPTER 5

PRESENTATION OF DATA AND CRITICAL DISCUSSION OF RESULTS

This chapter presents empirical results based upon statistical outputs. This chapter discusses five major topics. At first, the basic assumptions underlying the least squares are discussed based upon diagnostic results of the health of the data. Then, the chapter presents the tabulations of statistical outputs relating to the measure of central tendency and variability and uses descriptive statistics in discussing the general characteristics of the variables of interest. In addition, the critical discussion based upon descriptive statistics is also provided. The section after that is organized for reporting the testing results pertaining to the statistical health of the data employed for regression analysis, alongside the statistical problems and the remedial measures. The section next to that is the major section provided for multiple regression analysis, where the empirical model estimated by using the Fixed Effect Least-Squares Dummy Variable method is presented. Also, in this step, inferential statistics is employed to draw statistical implications by using hypothesis testing to test the significance of the relation between the variables of interest.

5.1 The basic assumptions of the least squares

To obtain BLUE estimators, the properties of the dataset exploited to estimate the model must satisfy the basic assumptions of the method of least squares (Black, 2004; Gujarati and Porter, 2009; Wooldridge, 2009). The following discussion is intended to provide those several tests conducted to check compliance with the required assumptions. Along with the tests, remedial measures are also proposed and engaged to remedy the statistical problems arose.

Firstly, a unit root test was conducted to check whether the time series is stationary. This test is of the essence because the phenomenon of nonstationary of the mean and variance of the dataset would limit the generalization of the model (Gujarati and Porter, 2009). Also, regressing nonstationary data would further cause an incurrence of spurious regression problem, where nonsense relation among the variables of interest exists and mislead an
analysis (Gujarati and Porter, 2009). The test results discussed in the following section shows that the data employed in this research is stationary.

Secondly, the pair-wise correlation amongst predictors expressed on the following correlational matrix shows that there is no multicollinearity problem. The result satisfies the assumption that requires no perfect correlation among regressors.

Thirdly, the assumption requiring homoscedastic variance of the disturbance was tested. The result confirms the presence of heteroscedasticity problem. The remedial measure of Newey-West standard errors method was called to fix this problem.

Fourthly, another assumption requiring independency of the error term was examined. The diagnostic result shows the violation of this assumption with the existence of serial correlation problem. Newey-West standard errors method is also the practical measure in addressing this issue. It was called to remedy this problem and to ensure the fulfillment of this assumption.

Lastly, the assumption requiring normal distribution of the stochastic error terms was also fulfilled with respect to the large dataset (100 observations) employed in the paper. This is in accordance with the central limit theorem discussed by Black (2004) and Gujarati and Porter (2009). According to them, for the large observations (the sample is greater than and equal to 30), the distribution of error is not of a critical concern; its distribution is assumed to be normal no matter what the distribution shape of the population is.

5.2 Descriptive statistics

To get the general view of the characteristics of the variables under the industry being studied, the researcher conducted descriptive statistical analysis. Based upon the data of the dependent and all the independent variables collected, descriptive statistics were tabularly recorded on Table 5.1. The set of data of interest was simply described using a few measurements including measures of central tendency and measures of variability. All variables were measured in terms of the percentage changes in the value from the previous year data.
Table 5.1
Descriptive Statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Median</th>
<th>Std. Dev.</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y_ Market value of equity (MVE)</td>
<td>0.03</td>
<td>-0.13</td>
<td>1.27</td>
<td>100</td>
</tr>
<tr>
<td>X1_ Book value equity (BVE)</td>
<td>1.11</td>
<td>0.01</td>
<td>11.02</td>
<td>100</td>
</tr>
<tr>
<td>X2_ Net income come growth rate (NI)</td>
<td>-0.31</td>
<td>-0.08</td>
<td>1.66</td>
<td>100</td>
</tr>
<tr>
<td>X3_ Dividend growth rate (DIV)</td>
<td>0.15</td>
<td>0.00</td>
<td>0.90</td>
<td>100</td>
</tr>
<tr>
<td>X4_ Capital expenditure (CAPEX)</td>
<td>2.17</td>
<td>-0.10</td>
<td>10.66</td>
<td>100</td>
</tr>
<tr>
<td>X5_ Net operating working capital (NOWC)</td>
<td>0.32</td>
<td>-0.01</td>
<td>2.13</td>
<td>100</td>
</tr>
<tr>
<td>X6_ Debt service capability (DSC)</td>
<td>150.98</td>
<td>0.00</td>
<td>1,183.72</td>
<td>100</td>
</tr>
<tr>
<td>X7_Investment in non-core business (INV)</td>
<td>3.11</td>
<td>0.00</td>
<td>19.60</td>
<td>100</td>
</tr>
<tr>
<td>X8_Capital structure (CS)</td>
<td>-13.13</td>
<td>-1.08</td>
<td>52.95</td>
<td>100</td>
</tr>
</tbody>
</table>

Descriptive statistics obtained based on the variables in focus showed that on average, the equity price increased minimally during the focused periods with the positive mean value of 0.03. This co-existed with the average increasing in the values of certain independent variables of interest (book equity, dividend, capital expenditure, net operating working capital, debt service capability, and investment in non-core business). Expressed on Table 5.1, the mean value of BVE of 1.11 was increased in align with the positive mean values of DIV, CAPEX, NOWC and INV of 0.15, 2.17, 0.32, 150.98 and 3.11, respectively. Inversely, the value of net income and capital structure had changed negatively during these periods with the mean value of 0.31 and 13.13 respectively.

5.3 Diagnostic tests of the data health and the statistical problems

This research employed multiple regression analysis to examine the association between the variables of interest and utilized fixed effect least squares method to estimate the Fixed Effect Least-Squares Dummy Variable Model, where the model was allowed to capture heterogeneous effects amongst firms. To obtain a good model that could properly explain the phenomenon, it is of the essence that the data must satisfy the basic linear regression assumptions. In verifying the full compliance with these assumptions, several tests were performed. The following sections (5.3.1 to 5.3.4) are organized to report the test results, the statistical problems detected, and the remedial actions proposed to correct those issues.
5.3.1 Test of multicollinearity

A small intercorrelated degree amongst the eight exogenous variables was surfaced from the data analysis. Table 5.2 illustrates collinearity checking result for the independent variables of interest.

Table 5.2
Correlation Matrix of The Independent Variables

<table>
<thead>
<tr>
<th></th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>X7</th>
<th>X8</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>1.00</td>
<td>0.29</td>
<td>-0.01</td>
<td>-0.01</td>
<td>0.20</td>
<td>-0.01</td>
<td>-0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>X2</td>
<td>0.29</td>
<td>1.00</td>
<td>0.12</td>
<td>-0.11</td>
<td>0.03</td>
<td>0.02</td>
<td>-0.03</td>
<td>0.01</td>
</tr>
<tr>
<td>X3</td>
<td>-0.01</td>
<td>0.12</td>
<td>1.00</td>
<td>-0.05</td>
<td>0.01</td>
<td>-0.02</td>
<td>-0.04</td>
<td>0.00</td>
</tr>
<tr>
<td>X4</td>
<td>-0.01</td>
<td>-0.11</td>
<td>-0.05</td>
<td>1.00</td>
<td>0.02</td>
<td>0.06</td>
<td>-0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>X5</td>
<td>0.20</td>
<td>0.03</td>
<td>0.01</td>
<td>0.02</td>
<td>1.00</td>
<td>-0.04</td>
<td>-0.06</td>
<td>-0.14</td>
</tr>
<tr>
<td>X6</td>
<td>-0.01</td>
<td>0.02</td>
<td>0.02</td>
<td>0.06</td>
<td>-0.04</td>
<td>1.00</td>
<td>-0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>X7</td>
<td>-0.02</td>
<td>-0.03</td>
<td>-0.04</td>
<td>-0.04</td>
<td>-0.06</td>
<td>-0.02</td>
<td>1.00</td>
<td>0.04</td>
</tr>
<tr>
<td>X8</td>
<td>0.02</td>
<td>0.01</td>
<td>0.00</td>
<td>0.04</td>
<td>-0.14</td>
<td>0.02</td>
<td>0.04</td>
<td>1.00</td>
</tr>
</tbody>
</table>

According to Table 5.2, the presented degrees of association in the correlation matrix suggest that multicollinearity problem is not to be highly expected in this research. The first column of the matrix showed the correlations of \(X_1\) (book value of equity) with itself and other explanatory variables. The highest correlation coefficient between \(X_1\) and the rest \(Xs\) was 0.29, which was the coefficient of correlation of \(X_1\) and \(X_2\) (net income). The second one was the correlation between \(X_1\) and \(X_5\) (net operating working capital), which was 0.20.

Coefficient of correlation gauges how the strength of the correlation is among the variables in terms of linearity in relation (Black, 2004). As to Black (2004, p. 81), “it is a number that ranges from -1 to 0 to +1, representing the strength of the relationship between the variables”. The number of +1 expresses positively perfect correlation, whereas -1 represents inversely the relationship of variables; a halfway between -1 and 0 or 0 and +1 indicates moderate correlation and zero value means no linear correlation (Black, 2004).

Similarly, Wooldridge (2009) cited that multicollinearity problem arise when the degree of correlation is close to 1. Also, Gujarati and Porter (2009) indicated that multicollinearity problem is harmful when pair-wise correlation amongst predictors is found to be higher than
0.8. Obviously presented, the aforementioned coefficients of correlation together with the rest numbers revealed on the correlation matrix were quite low in comparison to the degree suggested by the scholars. As a result, such the low degrees of association are not likely to have harmful effects to the inferential result of the study.

### 5.3.2 Test of stationarity

As documented in the section of statistical treatment of data regarding the typical statistical problems, which the researchers usually encounter for the statistical process dealing with cross-sectional and time series data. In addition to multicollinearity problem, other problems require further attention before regressing the data including stationary, heteroscedasticity, and serial correlation problems.

The dependent and independent variables scrutinized in this research were measured by taking percentage changes to transform the raw data before processing. This naturally makes the stationary problem impossible to happen. Nevertheless, in ensuring the statistical equilibrium of the time series data employed in this paper, the researcher performed the unit root test with Augmented Dickey-Fuller (ADF) Test on all the variables. The following table illustrates the result of the test:

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Augmented Dickey-Fuller test statistic</th>
<th>Probability values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y_MVE has a unit root</td>
<td>-11.11222</td>
<td>.0000</td>
</tr>
<tr>
<td>X1_BVE has a unit root</td>
<td>-9.994142</td>
<td>.0000</td>
</tr>
<tr>
<td>X2_NI has a unit root</td>
<td>-9.295217</td>
<td>.0000</td>
</tr>
<tr>
<td>X3_DIV has a unit root</td>
<td>-11.43337</td>
<td>.0000</td>
</tr>
<tr>
<td>X4_CAPEX has a unit root</td>
<td>-9.761717</td>
<td>.0000</td>
</tr>
<tr>
<td>X5_NOWC has a unit root</td>
<td>-10.87340</td>
<td>.0000</td>
</tr>
<tr>
<td>X6_DSC has a unit root</td>
<td>-9.899003</td>
<td>.0000</td>
</tr>
<tr>
<td>X7_INV has a unit root</td>
<td>-9.967884</td>
<td>.0000</td>
</tr>
<tr>
<td>X8_CS has a unit root</td>
<td>-4.282648</td>
<td>.0000</td>
</tr>
</tbody>
</table>

*Note. Test critical values at 5% level = -1.944105.*

The results were prominently revealed that the ADF test statistics of endogenous and all exogenous variables of interest were less than the test critical values. Altogether, all of their probability values (p-values) appeared to be statistically significant. As expressed in the table, the ADF test statistics of Y and X₁ to X₈ were -11.11222 and -9.994142, -9.295217, -
11.43337, -9.761717, -10.87340, -9.899003, -9.967884, -4.282648 respectively, whereas the
test critical values constructed at the level of 5% was -1.944105. These show that all
variables in attention do not contain the unit roots. The null hypotheses that the variables in
focus have unit roots were rejected at 5% significant level. In conclusion, the data are
stationary – the means and variances of the time series data are constant over time. As
suggested by Gujarati and Porter (2009), spurious regression problem often arise when
nonstationary dependent variable are regressed on nonstationary regressors. To eliminate the
possible appearance of spurious problem, it is recommended to check whether the data are
stationary. If it is not the case, the remedial action must be called to make them stationary
before processing. As the results indicate that the data are stationary, spurious regression
problem seems not to be a concern in this paper.

5.3.3 Test of heteroscedasticity

The White test and the Breusch-Pagan-Godfrey (BPG) test are the statistical testing
techniques widely accepted for diagnosing heteroscedasticity problem (Gujarati and Porter,
2009; Wooldridge, 2009). These diagnostic tools together with others are equipped in the
EViews program.

To address the heteroscedasticity problem, the researcher conducted the disturbance test
utilizing both the White and the Breusch-Pagan-Godfrey (BPG) testing tools to check the
dataset obtained from Bloomberg. The EViews program tabularly reveals the detection
results in Table 5.4.

<table>
<thead>
<tr>
<th>Table 5.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heteroscedasticity Test</td>
</tr>
</tbody>
</table>

**The White Test**

<table>
<thead>
<tr>
<th>F-statistic</th>
<th>1.743412</th>
<th>Prob. F(27,72)</th>
<th>.0324</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obs*R-squared</td>
<td>39.53245</td>
<td>Prob. Chi-Square(27)</td>
<td>.0566</td>
</tr>
<tr>
<td>Scaled explained SS</td>
<td>125.9340</td>
<td>Prob. Chi-Square(27)</td>
<td>.0000</td>
</tr>
</tbody>
</table>

**The Breusch-Pagan-Godfrey Test**

<table>
<thead>
<tr>
<th>F-statistic</th>
<th>2.794999</th>
<th>Prob. F(27,72)</th>
<th>.0003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obs*R-squared</td>
<td>51.17485</td>
<td>Prob. Chi-Square(27)</td>
<td>.0033</td>
</tr>
<tr>
<td>Scaled explained SS</td>
<td>163.0219</td>
<td>Prob. Chi-Square(27)</td>
<td>.0000</td>
</tr>
</tbody>
</table>
According to the brief views of the diagnostic results of heteroscedasticity presented in Table 5.4, the probabilistic values of the F-statistics obtained from both the White and the BPG tests were statistically significant at the 5% confidence level. As expressed, p-values were of .0324 and .0003 for the White and the BPG, respectively. Thus, the statistical null hypothesis that the disturbances equally spread or have equal variance for any values of exogenous was then rejected. The result affirms the suffering of heteroscedasticity of the data health. Even the heteroscedasticity does not create the biasness and inconsistent properties to the model, the efficiency of the estimators are in ruins (Gujarati and Porter, 2009). Therefore, in the presence of heteroscedasticity, to remedy such the problem is of the essence.

5.3.4 Test of serial correlation

Similar to the heteroscedasticity problem, the serial correlation does not cause the biasness and inconsistent properties to the model, but the estimators are inefficient. In other words, they are not the best estimators. This was because one of the groundbreaking least square assumptions of zero correlation amongst the residuals is relaxed (Gujarati and Porter, 2009).

Detection of serial correlation is thus critical. This research employed Breusch-Godfrey Serial Correlation LM Test available in the EViews program to test the statistical null hypothesis that there is no serial correlation amongst the residual orders. The result rejected the statistical null hypothesis with the statistically significant p-value at the level of confidence of 5%. This finding indicates that the health of the dataset suffers from the serially correlated problem. For any given X values in any different observation, the disturbance terms of the estimated equation correlate to each other. Brief section of the computer output was logged in Table 5.5.

Table 5.5
Serial Correlation Test

<table>
<thead>
<tr>
<th>Breusch-Godfrey Serial Correlation LM Test</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>9.835794</td>
</tr>
<tr>
<td>Obs*R-squared</td>
<td>42.33035</td>
</tr>
</tbody>
</table>
With the presence of the heteroscedasticity and serial correlation in the proposed model, the remedial actions have to be called for. In solving only heteroscedasticity, White’s heteroscedasticity-corrected standard errors (The White’s method) seems to be sufficient (Gujarati and Porter, 2009). However, in handling of heteroscedasticity and serial correlation problems, Newey-West standard errors method or under the full title of Newey-West’s Heteroscedasticity Consistent Coefficient Covariance is more appropriate (Gujarati and Porter, 2009).

In pursuit of Newey-West standard errors correcting procedure, the researcher employed EViews to regress the selected regressand (MVE) on the selected regressors (BVE, NI, DIV, CAPEX, NOWC, DSC, INV and CS). The statistical package automatically solves the statistical problems, and also estimates the empirical equation. Consequently, the following model was estimated and accompanied by the statistical output as expressed in the following section.

5.4 Multivariate regression analysis

After solving the statistical problems, the data were processed in the statistical package. As a result of regressing market value of the equity on the fundamental financial factors selected, the estimated empirical model then was formulated.

**Empirical model**

\[
MVE = -0.2218 - 0.0098\text{BVE} - 0.0099\text{NI} + 0.1146\text{DIV} + 0.0075\text{CAPEX} + 0.0370\text{NOWC} + 0.00003\text{DSC} + 0.0582\text{INV} + 0.0014\text{CS} - 0.6770\text{DF01} + 0.3161\text{DF02} + 0.4784\text{DF03} + 0.1278\text{DF04} - 0.0034\text{DF06} + 0.0160\text{DF07} - 0.0754\text{DF08} + 0.0124\text{DF09} - 0.5006\text{DF010} + 0.4237\text{DF11} - 0.0693\text{DF12} + 0.2837\text{DF13} + 0.0472\text{DF14} + 0.1468\text{DF15} + 0.1459\text{DF16} - 0.0936\text{DF17} + 0.3728\text{DF18} + 0.0427\text{DF19}
\]

When the empirical model was estimated, inferential statistics was called to draw the statistical implications. In accomplishing this, the researcher used the z statistic and the probabilistic value (p-value) to test the established hypotheses.
Hypothesis Tests

Hypothesis tests are conducted with an intention to determine whether the partial regression coefficients estimated are different from null. In other words, the hypothesis tests are called to check the associations between endogenous and exogenous variables of interest. The results of the test then turn to be the answers of the main questions of this research. If the SET participants employ the firms’ fundamental components disclosed on the financial statements to support their equity investment decision, the association between the equity values and the independent variables of interest should be detected.

The following table tabulates the EViews test statistical output of the sample data scrutinized in this research, in which the $z$ statistic and the probabilistic value (p-value), as a result of hypothesis testing, are also demonstrated. The hypothesis tests were conducted using two tailed test with the 95 percent confident interval. The following tables in this section separately report the results of testing significance of the overall model and of testing significance of the partial regression coefficients.

Testing of significance of the overall model

In testing of significance of the overall model, the researcher hypothesizes that at least one of the partial regression coefficients is statistically and significantly different from null. Symbolically,

$H_0: b_1 = b_2 = b_3 = b_4 = b_5 = b_6 = b_7 = b_8 = d_1 = d_2 = d_3 = d_4 = d_5 = d_6 = d_7 = d_8 = d_9 = d_{10} = d_{11} = d_{12} = d_{13} = d_{14} = d_{15} = d_{16} = d_{17} = d_{18} = d_{19} = 0.$

$H_a$: At least one of the partial regression coefficients is $\neq 0$.

In regard to 95 percent of confidence interval, the criteria of failing to reject the null statement or accepting the statistical alternative hypothesis can be stated as follows:

- Failing to reject the null when probability value is greater than the erroneous risk level of .05.
- Accepting the statistical alternative hypothesis when probability value is less than the erroneous risk level of .05.
Table 5.6 reports the result of testing overall significance of the model altogether with the adjusted R-squared. The statistical null hypothesis is rejected with the significance of the p-value of the F-statistic of .0000. This indicates that the empirical model estimated has a statistically and significantly predictable power for the market value of equity. In addition, the adjusted R-squared of .709696 or 70.96 percent also expresses that the model has high explanatory power to the interaction between market value of the equity and the selected fundamental financial variables.

**Testing of significance of the partial regression coefficients**

As to the z statistic and the probabilistic value of each partial regression coefficients of the variable of interest, it is shown that book value of the equity, net operating working capital, investment in non-core business and capital structure are statistically significant. The estimated signs of the coefficients are resulted as expected except for the book value of the equity.

Each statistical research question and its established statistical hypothesis are discussed altogether with the regression result and the test statistics. The result adhering to each variable is logged separately in the grids below:

Statistical research question 1: Is there a statistically significant relationship between the change in the book value of equity and the change in the market value of equity?

Given statistical research question 1, the null and the alternative statements of the hypotheses can be worded as follows:

<table>
<thead>
<tr>
<th>F-statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.963767</td>
<td>.0000</td>
</tr>
</tbody>
</table>

Adjusted R-squared

.709696
H10: There is no statistically significant relationship between the change in the book value of equity and the change in the market value of equity.

H1a: There is a statistically significant relationship between the change in the book value of equity and the change in the market value of equity.

In regard to 95 percent of confidence interval, the criteria of failing to reject the null statement or accepting the statistical alternative hypothesis can be stated as follows:

- Failing to reject the null when probability value is greater than the erroneous risk level of .05.
- Accepting the statistical alternative hypothesis when probability value is less than the erroneous risk level of .05.

Table 5.7
Output of Regression Analysis for Thailand Media and Publishing Industry Using Newey-West HAC Standard Errors & Covariance (t statistics - BVE)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>t-statistics</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1_BVE</td>
<td>-0.009808</td>
<td>-2.317342</td>
<td>.0233</td>
</tr>
</tbody>
</table>

As mentioned earlier, the statistical null hypothesis that there is no statistically significant relationship between the change in the market value of equity and the change in the book value of equity is rejected by the p-value .0233 of the observed t-statistics -2.317342. According to the result on Table 5.7, with such a significant p-value and negative sign of the partial slope coefficient of the book value of equity, it is shown that statistically, there is a significantly negative relationship between the change in the market value of equity and the change in the book value of equity. The finding indicates that the higher the book value of equity is, the lower the market value of equity results. The inverse statement is also correct.

As the theory suggested, the positive association between this pair of variables is expected (Downes and Goodman, 1990; Meigs and Meigs, 1993; Brigham and Gapenski, 1997; Stowe et al., 2002; Brigham and Ehrhardt, 2005; Damodaran, 2002; 2006; and Penman, 2007).

Nevertheless, another theory also suggests that in the presence of informational asymmetry,
the market price of equity will decline when the book value of equity increases as a consequence of issuing new stocks. That is that negative relation between the market and the book equity is very sensible in regard to asymmetrical information.

Prior findings showing positive relation between the book and the market equity, which are consistent with the firstly mentioned theory including the findings reported by Graham and King (2000), Ibrahim et al. (2002), El Shamy and Kayed (2005), Ragab and Omran (2006), Tan and Lim (2007), and Pirie and Smith (2008). On the other hand, the result of this study is consistent with the latter mentioned theory, in which informational asymmetry has influence on the perception of the SET players. In sum, the current finding is consistent with the results in the aforementioned papers in terms of the relationship between the variables, yet, it is contradictory in terms of the sign, or the direction of the relation.

Statistical research question 2: Is there a statistically significant relationship between earnings (net income) growth rate and the change in the market value of equity?

Given statistical research question 2, the null and the alternative statements of the hypotheses can be worded as follows:

H2₀: There is no statistically significant relationship between earnings (net income) growth rate and the change in the market value of equity.

H2ₐ: There is a statistically significant relationship between earnings (net income) growth rate and the change in the market value of equity.

In regard to 95 percent of confidence interval, the criteria of failing to reject the null statement or accepting the statistical alternative hypothesis can be stated as follows:

- Failing to reject the null when probability value is greater than the erroneous risk level of .05.
- Accepting the statistical alternative hypothesis when probability value is less than the erroneous risk level of .05.
Table 5.8
Output of Regression Analysis for Thailand Media and Publishing Industry Using Newey-West HAC Standard Errors & Covariance (t statistics - NI)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>t-statistics</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>X2_NI</td>
<td>-0.009950</td>
<td>-0.347517</td>
<td>.7292</td>
</tr>
</tbody>
</table>

As presented on Table 5.8, taking account of the t-statistics and the p-value of net income variable of -0.347517 and .7292, respectively, the t-statistics calculated based on the partial regression coefficient of the variable of net income growth rate falls in the acceptance region with respect to the constructed confidence interval of 95 percent. Altogether, with the p-value exceeding .05, the researcher concludes that the statistical null hypothesis is true at the accepted erroneous risks of five percent. This infers that for this industry, the change in the market value of equity statistically and insignificantly associated to the change of the net income.

In regard to the value relevance of the net income discussed by Cottle et al. (1989), Downes and Goodman (1990), Meigs and Meigs (1993), Damodaran (1996; 2002; 2006), Brigham and Gapenski (1997), Copeland et al. (2000), Stowe et al.(2002), Keown et al. (2003), Brigham and Ehrhardt (2005), Penman (2007), and Hirschey and Nofsinger (2008), the result is statistically inconsistent with the established theory that indicates the positive relation of stock value to the net income. Also, the result is statistically different from the prior findings of Varaiya et al. (1987), Graham and King (2000), Razeen and Karbhari (2004), El Shamy and Kayed (2005), Ragab and Omran (2006), Tan and Lim (2007), Alattar and Khater (2007), and Pirie and Smith (2008).

Statistical research question 3: Is there a statistically significant relationship between dividend growth rate and the change in the market value of equity?

Given statistical research question 3, the null and the alternative statements of the hypotheses can be worded as follows:

$H_0^3$: There is no statistically significant relationship between dividend growth rate and the change in the market value of equity.
H3a: There is a statistically significant relationship between dividend growth rate and the change in the market value of equity.

In regard to 95 percent of confidence interval, the criteria of failing to reject the null statement or accepting the statistical alternative hypothesis can be stated as follows:

- Failing to reject the null when probability value is greater than the erroneous risk level of .05.
- Accepting the statistical alternative hypothesis when probability value is less than the erroneous risk level of .05.

Table 5.9
Output of Regression Analysis for Thailand Media and Publishing Industry Using Newey-West HAC Standard Errors & Covariance (t statistics - DIV)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>t-statistics</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>X3_DIV</td>
<td>0.114654</td>
<td>1.549215</td>
<td>.1257</td>
</tr>
</tbody>
</table>

When the dividend growth rate influences the firm’s stock price, the partial slope coefficient resulted will be statistically significant. On the contrary, the result was statistically different from what the researcher expected. According to the result on Table 5.9, the t-statistic of 1.549215 and the lowest value of significance of .1257 appear to be incapable of rejecting the statistical null hypothesis at the 95 percent confidence level. The result statistically conveys that there is a statistically insignificant relationship between dividend and the market value of equity. Statistically, the change of dividend does not influence the change of equity values.

The finding is found to be consistent with the tax preference theory and the clientele theory as described by Brigham and Ehrhardt (2005), and Siad (2007). Also, it is consistent with the explanations provided by Meigs and Meigs (1993), Copeland et al. (2000), and Penman (2007). Prior research with the same result was revealed by Watts (1973), whereas the current finding is inconsistent with the findings of Pettit (1972), Asquith and Mullins (1983), Lonie et al. (1996), and Hughes (2008).

Statistical research question 4: Is there a statistically significant relationship between the change in the capital expenditure and the change in the market value of equity?
Given statistical research question 4, the null and the alternative statements of the hypotheses can be worded as follows:

\[ H_{40} : \text{There is no statistically significant relationship between the change in the capital expenditure and the change in the market value of equity.} \]

\[ H_{4a} : \text{There is a statistically significant relationship between the change in the capital expenditure and the change in the market value of equity.} \]

In regard to 95 percent of confidence interval, the criteria of failing to reject the null statement or accepting the statistical alternative hypothesis can be stated as follows:

- Failing to reject the null when probability value is greater than the erroneous risk level of .05.
- Accepting the statistical alternative hypothesis when probability value is less than the erroneous risk level of .05.

Table 5.10
Output of Regression Analysis for Thailand Media and Publishing Industry Using Newey-West HAC Standard Errors & Covariance (t statistics - CAPEX)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>t-statistics</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>X4_CAPEX</td>
<td>0.007591</td>
<td>1.934192</td>
<td>.0570</td>
</tr>
</tbody>
</table>

As expressed on Table 5.10, looking into the t-statistics of 1.934192 and its p-value of .0570 regarding to the use of alpha of .05, the researcher fails to reject the statistical null hypothesis that there is no statistically significant relationship between the change in the capital expenditure and the change in the market value of equity. Statistically, the change in the capital expenditure number cannot influence the equity value to be changed.

The current result provided a somewhat difference from the researcher’s expectation and the theory established that capital expenditure is a value driver (Downes and Goodman, 1990; Meigs and Meigs, 1993; Brigham and Ehrhardt, 2005; Damodaran, 2002; Libby et al., 2009). With respect to the previous studies, the present study is found to be both consistent and
inconsistent with others. McConnell and Muscarella (1985) reported no relationship between
capital expenditure and stock price in public utility corporations, but significantly positive
relationship existed in the industrial corporations. Kim (2001) reported no connection
between future earnings and capital expenditures regarding the entire sample, but positive
coefficients of capital expenditure were resulted after the samples were partitioned into two
groups (success and nonsuccess) and eliminating the losses performance from the
observations. In addition, the current finding is also consistent with Echevarria (2007), but
inconsistent with Kerstein and Kim (1995), and Jiang et al. (2006).

Statistical research question 5: Is there a statistically significant relationship between the
change in the net operating working capital and the change in the market value of equity?

Given statistical research question 5, the null and the alternative statements of the hypotheses
can be worded as follows:

\[
H_0^5: \text{There is no statistically significant relationship between the change in the net operating working capital and the change in the market value of equity.}
\]

\[
H_a^5: \text{There is a statistically significant relationship between the change in the net operating working capital and the change in the market value of equity.}
\]

In regard to 95 percent of confidence interval, the criteria of failing to reject the null
statement or accepting the statistical alternative hypothesis can be stated as follows:

- Failing to reject the null when probability value is greater than the erroneous risk level of .05.
- Accepting the statistical alternative hypothesis when probability value is less than the
  erroneous risk level of .05.

Table 5.11
Output of Regression Analysis for Thailand Media and Publishing Industry Using Newey-
West HAC Standard Errors & Covariance (t statistics - NOWC)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>t-statistics</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>X5_NOWC</td>
<td>0.037043</td>
<td>2.102669</td>
<td>.0390</td>
</tr>
</tbody>
</table>
In the light of the EViews output as illustrated on Table 5.11, the t-statistics of the net operating working capital (NOWC) was of 2.102669 accompanied by the exact level of significance of .0390 in addition to the correct sign of the coefficient as expected. The significance of the t-statistics at the 95 percent of confidence rejects the statistical null hypothesis that there is no statistically significant relationship between the change in the net operating working capital and the change in the market value of equity. The positive sign of the coefficient confirms a postulate of positive association of the net operating working capital to stock price. This demonstrates that the higher the net operating working capital, the higher the expected equity value.

With respect to the theory suggested by several scholars (Downes and Goodman, 1990; Copeland et al., 2000; Stowe et al., 2002; Brigham and Ehrhardt, 2005; Damodaran, 2006; Reilly and Brown, 2006; Fabozzi, 2007; Hirschey and Nofsinger, 2008) that net operating working capital generates cash flow, a key driver of firm value and stock performance, the current findings conspires with the empirical findings found in other countries (Rayburn, 1986 and Ali, 1994) to confirm such relation.

Statistical research question 6: Is there a statistically significant relationship between the change in the debt service capability and the change in the market value of equity?

Given statistical research question 6, the null and the alternative statements of the hypotheses can be worded as follows:

Hₐ₀: There is no statistically significant relationship between the change in the debt service capability and the change in the market value of equity.

Hₐ₁: There is a statistically significant relationship between the change in the debt service capability and the change in the market value of equity.

In regard to 95 percent of confidence interval, the criteria of failing to reject the null statement or accepting the statistical alternative hypothesis can be stated as follows:

- Failing to reject the null when probability value is greater than the erroneous risk level of .05.
Accepting the statistical alternative hypothesis when probability value is less than the erroneous risk level of .05.

Table 5.12

Output of Regression Analysis for Thailand Media and Publishing Industry Using Newey-West HAC Standard Errors & Covariance (t statistics - DSC)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>t-statistics</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>X6_DSC</td>
<td>0.00003</td>
<td>1.944003</td>
<td>.0558</td>
</tr>
</tbody>
</table>

It is found in this research that statistically, debt service capability does not influence the stock price. As elaborated on Table 5.12, with the t-statistic and the p-value of 1.944003 and .0558 respectively, the statistical null hypothesis cannot be rejected. Hence, it is true that there is no statistically significant relationship between the change in the debt service capability and the change in the market value of equity.

The current finding is found to be statistically inconsistent with the theory established that the association exists between liquidity and a firm’s growth performance and that the firm’s liquidity influences the value of the equity. The scholars confirmed this theory including Meigs and Meigs (1993), Copeland et al. (2000), Damodaran (2002), and Brigham and Ehrhardt (2005). The present finding is also statistically inconsistent with the findings reported by Elston (2002) and Fagiolo and Luzzi (2004).

Statistical research question 7: Is there a statistically significant relationship between investment in non-core business growth rate and the change in the market value of equity?

Given statistical research question 7, the null and the alternative statements of the hypotheses can be worded as follows:

H7_0: There is no statistically significant relationship between investment in non-core business growth rate and the change in the market value of equity.

H7_a: There is a statistically significant relationship between investment in non-core business growth rate and the change in the market value of equity.
In regard to 95 percent of confidence interval, the criteria of failing to reject the null statement or accepting the statistical alternative hypothesis can be stated as follows:

- Failing to reject the null when probability value is greater than the erroneous risk level of .05.
- Accepting the statistical alternative hypothesis when probability value is less than the erroneous risk level of .05.

Table 5.13
Output of Regression Analysis for Thailand Media and Publishing Industry Using Newey-West HAC Standard Errors & Covariance (t statistics - INV)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>t-statistics</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>X7_INV</td>
<td>0.058224</td>
<td>4.155571</td>
<td>.0001</td>
</tr>
</tbody>
</table>

With regard to another proposed accounting factor, investment in non-core business growth rate, t-statistics of 4.155571 fell in the critical region regarding the established confidence interval of 95 percent. Considering this information together with the lowest level of significance of .0001 of the t-statistics as presented on Table 5.13, the researcher rejects the statistical null hypothesis that there is no statistically significant relationship between investment in non-core business growth rate and the change in the market value of equity. The positive coefficient expresses that investment in non-core business growth rate relates statistically and positively to the change in the traded price of equity. Statistically, the higher the investment in non-core business is, the higher the equity price results.

Regarding the theoretical relation, the statistical relation found between investment in non-core business and equity value is consistent with the established theory mentioned by Downes and Goodman (1990), Meigs and Meigs (1993), Copeland et al. (2000), Damodaran (2002; 2006), Brigham and Ehrhardt (2005), Reilly and Brown (2006), and Hirschey and Nofsinger (2008). Additionally, the current finding, accompanied by the previous findings of Das et al. (1998), Chen et al. (2001), Morgado and Pindado (2001), Campart and Pfister (2002), and Brio et al. (2003), confirms the theoretical association of investment in non-core business and the market value of equity.
Statistical research question 8: Is there a statistically significant relationship between the change in the capital structure and the change in the market value of equity?

Given statistical research question 8, the null and the alternative statements of the statistical hypotheses can be worded as follows:

\( H_{80} \): There is no statistically significant relationship between the change in the capital structure and the change in the market value of equity.

\( H_{8a} \): There is a statistically significant relationship between the change in the capital structure and the change in the market value of equity.

In regard to 95 percent of confidence interval, the criteria of failing to reject the null statement or accepting the statistical alternative hypothesis can be stated as follows:

- Failing to reject the null when probability value is greater than the erroneous risk level of .05.
- Accepting the statistical alternative hypothesis when probability value is less than the erroneous risk level of .05.

Table 5.14
Output of Regression Analysis for Thailand Media and Publishing Industry Using Newey-West HAC Standard Errors & Covariance (t statistics - CS)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>t-statistics</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>X8_CS</td>
<td>0.001436</td>
<td>2.713955</td>
<td>.0083</td>
</tr>
</tbody>
</table>

As shown on Table 5.14, with t-statistics of 2.713955 lying in the rejected region of the proposed 95 percent confidence level, the statistical null hypothesis that there is no statistically significant relationship between the change in the capital structure and the change in the market value of equity is then rejected. This is in accordance with the probability value of .0083, which appears to be significant based on the alpha value of .05. The positive coefficient of the capital structure statistically indicates the positive relationship between the change in the capital structure and the change in the market value of equity. Thus, the higher
the ratio of debt to equity statistically causes to higher equity price. The inverse statement is also true.

The current finding in this paper supports the existence of relation of these two financial factors theoretically claimed by Modigliani and Miller (1958; 1963), Cottle et al. (1989), Brigham and Gapenski (1997), Brigham and Ehrhardt (2005), and Damodaran (2006). Also, the result is consistent with the findings in prior studies conducted by Pilote (1992), Lewis et al. (1996), Hull (1999), and Joshua Abor (2005), but it is inconsistent with Carpentier’s research (2006), who found the independence of capital structure and valuation.

In passing, as to the research methodology discussed, the researcher tries to estimate the empirical model by scrutinizing how market value of the equity behaves in response to the selected financial factors based on the panel data. A hundred observations of cross-sectional and time series of 20 different firms and five different years during 2004-2008 were pooled and analyzed by allowing the cross-sectional firms to have their own intercepts. In other words, this is the way to allow the model capturing heterogeneity effect (firm effect, or the difference among sample firms) that can affect the response of dependent variable on explanatory variables. This methodology has been discussed and widely realized by scholars, theorists and econometricians, and several researchers as the appropriate methodology that will result unbiased, consistent, and efficient estimated coefficients when encountering with the data having the cross-sectional and time series in nature. The least-squares dummy variable or the fixed effect model adopted in this research were in detail discussed by Gujarati and Porter (2009); Wooldridge (2009).

Table 5.15

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>t-statistics</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DF01</td>
<td>-0.677004</td>
<td>-1.333905</td>
<td>.1864</td>
</tr>
<tr>
<td>DF02</td>
<td>0.316171</td>
<td>2.872952</td>
<td>.0053</td>
</tr>
<tr>
<td>DF03</td>
<td>0.478463</td>
<td>3.342958</td>
<td>.0013</td>
</tr>
<tr>
<td>DF04</td>
<td>0.127839</td>
<td>1.106295</td>
<td>.2723</td>
</tr>
<tr>
<td>DF05</td>
<td>0.022383</td>
<td>0.200999</td>
<td>.8413</td>
</tr>
</tbody>
</table>
To obtain the fixed effect regression model, the researcher introduced 19 dummies of firm variables into the model to grasp the variant characteristics among the firms. As a consequence, the estimated parameters for the fixed effect dummy variables \( (d_1, \ldots, 19) \) were produced in addition to the other regression estimators \( (b_1, \ldots, 8) \) of the selected exogenous.

According to Table 5.15 shown here, some of these firm-dummies, which are DF02, DF03, DF10, DF13 and DF18, are statistically significant with the t-statistics of 2.872952, 3.342958, -2.491155, 3.867186, 3.268913 and also accompanied by their p-values of .0053, .0013, .0150, .0002, .0017, respectively. The result conveys that the differences among firms statistically and significantly influence the response of market value of equity on the selected independent variables. This is consistent with the aforementioned results of testing the significance of the overall model hypothesizing that at least one of the partial regression coefficients is statistically and significantly different from null. However, to reconfirm this conclusion, the researcher also conducted WALD Coefficient Restrictions test for all differential intercepts of dummy firm variables.

**Wald Test of Impact of Dummy Firms**

Wald test is the F test conducted to test impact of dummy firms. To conduct the Wald Test, the researcher proceeds with the statistical hypothesis that at least one of the estimated
parameters for the fixed effect dummy variables \((d_1...d_{19})\) is statistically and significantly different from null. Symbolically,

\[ H_0: d_1=d_2=d_3=d_4=d_5=d_6=d_7=d_8=d_9=d_{10}=d_{11}=d_{12}=d_{13}=d_{14}=d_{15}=d_{16}=d_{17}=d_{18}=d_{19} = 0. \]

\[ H_a: \text{At least one of the partial regression coefficients is } \neq 0. \]

In regard to 95 percent of confidence interval, the criteria of failing to reject the null statement or accepting the statistical alternative hypothesis can be stated as follows:

- Failing to reject the null when probability value is greater than the erroneous risk level of .05.
- Accepting the statistical alternative hypothesis when probability value is less than the erroneous risk level of .05.

Table 5.16
Output of WALD Coefficient Restrictions Test

<table>
<thead>
<tr>
<th>Test statistic</th>
<th>Value</th>
<th>df</th>
<th>Probabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-statistic</td>
<td>4.478454</td>
<td>(19, 72)</td>
<td>.0000</td>
</tr>
</tbody>
</table>

The EViews output of the Wald Test is tabularly reported in Table 5.16, in which the highly significant of the probability value of the F-statistic can obviously be seen. The result rejects the statistical null hypothesis at the 95 percent of confidence that the entire firm-dummy intercepts equal to zero. And such, it ultimately ensures the correctness of the conclusion that the differences among firms statistically and significantly influence the response of market value of equity on the selected independent variables.
CHAPTER 6

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The chapter is beginning with the summary of the facts found in this paper, where, in statistical details, the results could also be found in Chapter 5 of this paper. Next to that, the findings will be discussed and the implications drawn will also be presented. In the second section, the researcher ends with the conclusion of the paper. The recommendations for the stakeholders are demonstrated in the third section. Lastly, a chance for further research is suggested in the fourth section.

6.1 Summary of findings

It is the paramount intention of this paper in endeavoring to give an answer to the question as: to what extent, the SET participants relate the share price of the media and publishing firms to the involuntary data on the financial statements.

This intention is stimulated by both concern and the following curiosity. As discussed in several papers including Islam (2000), Linsley and Shrives (2005), Chalardpodjanaporn (2008), Duffie (2008), Jain (2009), Brewer and Klingenhagen (2010), among other issues causing the past financial crises, financial reporting and accounting data is one concerning standard setters and many constituents. In several past crises, together with other measures, the rescue package has been followed by a mechanism for enhancing accounting and financial reporting practices. This fact not only stresses the importance of good corporate governance having positive effect on accounting data transparency but also encourages the investors to regard fundamental data when making investment decision.

Concerning the situation in Thailand market relating to this issue, the researcher is motivated to conduct this study. In addition, the researcher aims to study the concerned phenomenon in media and publishing industry with two major reasons. Firstly, the researcher regards the impact and importance of this industry to the world citizens, and the economic system. Secondly, the researcher is curious about how accounting factors affect the humanly-
intellectually intensive industry (the industry typically is driven by human and intangible properties). To take account of this background, the sample dataset of the media and publishing firms was retrieved from the Bloomberg database. The final dataset, which fulfills regression analysis, contains 100 firm-year observations of panel data based on 20 different firms spanning 2004 to 2008.

To answer the main question of this paper, the researcher has to determine the association between stock price and fundamental financial data obtained from the samples. This is the practical methodology designed and widely employed by the scholars to address the value relevance of financial statement variables. In other words, the usefulness of fundamental financial components as perceived and utilized by the investors to support their equity investment (Lev, 1989; Barth et al., 2001; Hand, 2003; Rahman and Mohd-Saleh, 2007). The other researchers have examined whether accounting information shapes investors’ views on stock prices including the studies of Landsman (1986), Graham and King (2000), Ibrahim et al. (2002), El Shamy and Kayed (2005), Ragab and Omran (2006), Tan and Lim (2007), and Pirie and Smith (2008).

Descriptive statistics obtained on the financial statement variables expressed a small positive change in the stock price as an industry average during the focus periods. This corresponded directly to the change in the values of book equity, dividend, capital expenditure, net operating working capital, debt service capability, and investment in non-core business. However, the average change of stock price was in opposite to the average change in the value of net income and capital structure.

According to multiple regression results, which the model was allowed to capture the firm heterogeneity effect, statistically, the change in equity prices of the media and publishing firms are found to be significantly and positively associated with the change in net operating working capital, investment in non-core business, and capital structure. However, it is significantly and negatively associated with the change in the book equity. All these results successfully reject the null hypotheses that there is no statistically significant relationship between the change in the book equity, net operating working capital, investment in non-core business, capital structure and the change in the equity price. Some other fundamental variables (net income growth, dividend growth, changing in debt service capability, and capital expenditure), statistically, are found to be insignificantly relevant to the change in the market value of the equity. These show that the results are failing to reject the null
hypotheses that there is no statistically significant relationship between the changes in net income, dividend, debt service capability, capital expenditure and the change in equity price. Additionally, the Wald Test result suggests that the heterogeneities among firms have different effects on the response of the equity prices on the independent variables of interest.

6.2 Discussion/Conclusions

6.2.1 Discussion

With respect to the statistical relation illuminated, statistically, some of the fundamental factors are found to be significantly relevant, whereas some other are insignificantly relevant in explaining stock price movements in Thailand media and publishing industry. At first touch, the result may not strongly confirm value relevance of accounting information. Nevertheless, the following discussions, implications, and the fact that the value of this industry is naturally driven by human and intangible properties might provide the rational explanation to this phenomenon. Consequently, such explanation turns to be the answer to support the belief that financial statement information is value relevant. At least, financial statements provide the market participants complementary information for equity investment. The research firstly discusses the implications given in descriptive statistics and then the implications drawn by inferential statistics of hypothesis testing.

A very small positive change of the market value of the equity implies two possible reasons: Firstly, the value of Thailand media and publishing industry is less volatile in nature; secondly, it is the unfruitful periods of this industry. The second reason is possibly caused from no salience of the new technological development, or noteworthy creation in other value drivers that could catch the market’s attention during the focus periods. As a result, the statistics illuminates the low capital gain received by the investors. This is in accordance with the negative mean value of net income. The reported average percentage dropping in the growth rate of net income implies that even the business still has been able to make the profit during these five years (2004-2008) but these periods are not likely the blossoming periods of the media and publishing business, especially in the year of 2008 that Thailand is affected by the U.S. crises. Considering advertising spending as the core revenue of this industry (Pongsudhirak and Kamchuchat, 2003; Tangkitvanich, 2003) during the periods of 2001 to 2008, the impact of the U.S. crisis causes the first reduction of the advertising spending in
2008 amounting to 2.767 percent (The Nielsen Media Research, 2008). The average negative change in the capital structure indicates that, as an average, this industry utilizes a smaller amount of debts in financing their projects. This is in accordance with the positive mean value of debt service capability, which measures the percentage change of ability to service debt among years of interest. Better performance in servicing debts was possibly caused by having more new cash inflow to the firms, or reducing the existing debt level. However, according to the statistics, the increased mean value of debt service capability results in conjunction with the negative mean value of net income growth rate and capital structure. These, to a certain extent, mutually reflect the decrease in the levels of debts undergone by the industry instead of having a new cash inflow to drive debt service performance. The possible factor that discourages the managements involving high financial risks through debt financing is the high business risks inherently incurred during a downturn of economy. In turn, maintaining the low level of debt, the firms as well lose their chance to harvest new cash through the new project funded by new debts. This could be the presumable cause of decrease in the growth rate of net income.

The statistical inferences drawn from the hypothesis testing are now discussed. As to the aforementioned theory in the theoretical review section of this paper, several theoreticians make mutual agreements on the positive association of book equity and market equity. Those among them are Downes and Goodman (1990), Meigs and Meigs (1993), Brigham and Gapenski (1997), Stowe et al. (2002), Brigham and Ehrhardt (2005), Damodaran (2002; 2006), and Penman (2007).

The expectation of positive relation of these two variables is very reasonable in accordance with the discussion belonging to the theorists. The change in the book value of the equity (BVE) should be positively related to the change in the market value of the equity (MVE), because the market value is the current value at which such equity will be traded. The other supportive evidences accompanied by this theory are found in the recent empirical works researched by Graham and King (2000), Ibrahim et al. (2002), El Shamy and Kayed (2005), Ragab and Omran (2006), Tan and Lim (2007), and Pirie and Smith (2008). Nevertheless, there are some theoretical evidences which provide the reasons supporting inverse relation of BVE and MVE.

The inverse direction of the relationship between the change in MVE and the change in BVE can be explained by taking accounts asymmetric information or signaling theory, pecking
order theory, and dilution effects. To a certain extent, the negative relation also reflects underlying industrial characteristics of the media and publishing industry.

As to the asymmetric information or signaling theory, Myers and Majluf (1984, p.47) pointed out that “when managers have superior information, and stock is issued to finance investment, stock price will fall”. It is because investor views that the management has more information than them and perceives incoming loss; the manager then issues new stock with an intention to fade intensity of possible loss by sharing it out to new stockholders (Brigham and Ehrhardt, 2005). In addition, the investors may view that when the manager is not sure about future profitability, he may choose to raise cash by issuing new equity instead of raising new debt. It is because debt creates future obligation that the firm must commit (interest and principle payment), whereas paying dividend to new stockholders is optional and dependent on future profit (Brigham and Ehrhardt, 2005). As to these reasons, issuing new equity signals bad prospect and drive stock price declining.

In some senses, the existence of informational asymmetry possibly lead the manager raising cash to finance the project in accordance with the pecking order, where internal fund is the first source used to finance the assets, then followed by debt financing; when the first two sources are exhausted, the manager will raise fund through equity financing (Brigham and Ehrhardt, 2005). In regard to pecking order theory, stock price will fall when the firm issues new equity. The possible reason is that investors views that the firm is not in a good condition. It has no excess cash (internal fund) left to finance its project. Seemingly, the firm’s credit health is also bad since it cannot raise debt to finance its project. Lacking of capacity to raise fund from the first two sources, the firm is forced to use the last option (issue new equity).

Lastly, to take dilution effects into account, a stock with higher voting control is anticipated to be priced at higher value (Damodaran, 2002). As to this effect, stock price will decline when the firm issues new stocks (the potential investors perceive that their powers to control the firm tend to be diluted due to increasing of new equities).

In addition to the aforementioned discussions, a statistically significant negative relationship between the market value of the equity and the book value of the equity possibly reflects underlying industrial characteristics of Thailand media and publishing industry. The positive relationship of the market value of the equity and the book value of the equity can sensibly be
expected in the capital-intensive firms, in which cash flow or growth rate lies heavily on the capital assets. Especially in the highly growing firms, long term funds from external source through equity financing may be the first choice (Brigham and Ehrhardt, 2005).

Regarding this, when the capital-intensive firm acquires a new capital asset (for example, a new machine), under good production management, such a new capital asset can absolutely generate new cash and consequently turn to be the business growth opportunity in the eyes of investors. In such situation, the higher the book value of the equity is, the better the stock performance because new cash from equity financing is used to acquire new machine to increase the firm’s operating profitability.

On the other hand, in the labor-intensive or intangible-intensive industry like Thailand media and publishing, the investors may expect that new cash from new equity should be spent for acquiring new intellectual assets, new creative contents, artists, or new technological ‘knowhow’ rather than spend for capital assets. The SET investors do not realize the size of capital spending as the driver of the firms’ performance. When they realize the human and intellectual properties as the cash flow generators, and the drivers of business growth, new cash from new equity spent for capital expenditure can decline the firms’ stock value.

This finding is consistent with the general view on the content industry discussed by the scholars (Biagi, 1994; 2010; Berman, 2004; Flew, 2004) that human capital and intellectual assets are of the essence to the growth and the value of this industry. Also, it is in accordance with the discussion of Stowe et al. (2002) that in service industry, humans are the key operating factors; the physical capital represented by book value then is less important and cannot be considered as value indicator. Amir and Lev (1996) empirically examined the value relevance of financial and non-financial factors of the wireless communication firms and their results suggested that cash flows, book values, and earnings are stock value irrelevant.

Another phenomenon can also be observed on the basis of the output as an impact of the world economic crisis and the political turmoil in Thailand during the year 2008. The descriptive statistical figures provided supportive evidences based on financial data in the focus periods (2004 – 2008). There was an increase in the mean value of book equity in parallel with an increase in the mean value of capital expenditure, whereas the impact of the U.S. crisis in the midst of the year 2008 and the political turmoil ripen in the adjacent period caused sharp slumping of the SET index and stock price. The contrast of these events can
also be another possible cause of an appearance of the negative association of the market equity and the book equity. All in all, these are the possible rationales that drive negative association of the market value and the book value of the equity.

A statistically significant positive relationship found in this paper between net operating working capital (NOWC) and equity price is in accordance with the prior results reported by Rayburn (1986) that operating cash flow has significant explanatory power on stock prices. It is also consistent with Ali (1994), who found the relationship between stock prices and operating performance regressors (cash flow, working capital from operation, and earnings).

Brigham and Ehrhardt (2005) posited that in assessing management’s performance, analysts can look into their capabilities to utilize operating assets to produce operating income, EBIT. Because EBIT is one indicator of a firm’s performance (Meigs and Meigs, 1993), the connection between the levels of operating working capital and the firm’s profitability, and its stock performance is prominent. The relationships between these factors are unanimously confirmed in the established financial theory discussed by several scholars including (Downes and Goodman, 1990; Copeland et al., 2000; Stowe et al., 2002; Brigham and Ehrhardt, 2005; Damodaran, 2006; Reilly and Brown, 2006; Fabozzi, 2007; Hirschey and Nofsinger, 2008).

Regarding operating cash flow as one component forming NOWC, the current finding is also consistent with other prior researches, which revealed that the effective cash conversion cycle managed by the management has direct influence on the firms’ profitability (Teruel and Solano, 2007; Nobanee and AlHajjar, 2009).

In addition to the established theory and the previous findings, it is very reasonable to find the connection between NOWC and equity prices with respect to the nature of this industry. To take the nature of this industry into account, the business implication can also be drawn and that helps to describe the phenomenon found in this paper. In the presence of other information, the SET investors consider the usefulness of net operating working capital data on accounting statements and used it for making decisions of investing in this industry. This is because net operating working capital in one aspect refers to as the operating capital that the firm needs to set aside for supporting expected growth in future sales (giving more credit to customers). For publishing firms, operating capital is needed to buy raw materials for producing finished goods (newspapers and magazines) and keeping them available for the
customers. In the media and entertainment firms, the operating capital is for film right of new movies or managerial expenditure in releasing a new programme or album. Hence, it will be logical to say that running the business without operating working capital seems impossible.

As to this essence, the investors then tie it up to the firms’ stock performance. Obviously, this fact helps to picture an essence of NOWC to the firms’ growth prospect, consequently providing another reason to explain the relationship between NOWC numbers and equity prices. In another view, the present result also lends the implications to the business organizations and individual shareholder. Based on this fact, the managers can use NOWC numbers to express their operating abilities and the firms’ growth prospect. In turn, the firms’ shareholders can utilize this financial factor as another indicator to observe performances of their agents. Thus, among the presences of other financial variables of the proposed model, it can be concluded that net operating working capital possesses the explanatory power on the stock value.

The result indicates that there is a statistically significant relationship between investment in non-core business growth rate and the change in the market value of equity. This suggests that the association with investment in associated firm of the market equity value of Thailand media and publishing firms is realized by the investors. In other words, the information on the balance sheet related to investment account forms the market value of the firm’s stock in the opinions of investors.

The positive relation of both factors found in this paper is consistent with the established theory mentioned by scholars. Copeland et al. (2000) cited that investment in non-core business is considered as one source of non-operating income driving cash flow and stock value. Other scholars sharing this views includes Downes and Goodman (1990), Damodaran (2002; 2006), Brigham and Ehrhardt (2005), Reilly and Brown (2006) and Hirschey and Nofsinger (2008). Similarly, Meigs and Meigs (1993) claimed that apart from operating items, net income is also formed by non-operating revenues like interest earned from investment. With reference to Meigs and Meigs’s arguments, growth through investment in subsidiaries is one of the most effective strategies and the fastest way of a firm to penetrate to new markets and to adopt new technology. Diversifying into new line of business can probably mean new source of cash enriching the company. Also, acquiring other firms’ technical know-how is a shortcut to new skills and experiences. All of these advantages are likely to be created by the value of investing through subsidiaries.
The value relevance of investment opportunities and collaboration announcements are also revealed and confirmed by the researches in other countries by Das et al. (1998), Chen et al. (2001), Morgado and Pindado (2001), Campart and Pfister (2002), and Brio et al. (2003).

All these facts do prominently display the significance of investment in non-core business to the value of the firm and stock price. Regarding the regression results together with the theory established about investment in non-core business, all these matters stipulates another aspect from the management side that the firms under the media and publishing industry also give importance to the subsidiaries as the sources of profits. The management does not rely on only the profits generated from the core business. Virtually, the firms cannot do everything by themselves probably due to lacking of resources. Also, in most cases, it is too risky to invest a lot to solely operate the new business. To grab the new opportunity by coordinating with the strategic alliance then is a wise alternative, and, under proper conditions, new cash will be generated to the firms. This can be one reason encouraging the fact that investment in non-core business is not only accepted by the management but also plays the significant role in shaping investors’ opinions on the firm’s stock performance.

The result shows that there is a statistically significant relationship between the change in the capital structure and the change in the market value of equity. The positive coefficient of capital structure indicates the positive relationship between the capital structure and the market value of equity. This confirms the existence of an association of these two financial factors theoretically claimed by Modigliani and Miller (1958; 1963), Cottle et al. (1989), Brigham and Gapenski (1997), Brigham and Ehrhardt (2005), and Damodaran (2006). The result statistically suggests that stock value relevance of the capital structure is perceived by the SET participants of the media and publishing industry.

Typically, the capital structure of any firms reflects the proportion of debt and equity raised by those firms to finance the assets to smooth the operation flow and to meet the forthcoming deals. An achievement of any firm thus also depends on the management capability to identify the appropriate proportion of debt and equity that will maximize the firm’s growth rate, tax benefit and at the same time minimize bankruptcy risk. This, in other words, is the optimum capital combination.

Because the decision on the capital structure will result good and bad effects to the firm and directly writes the destiny of the management, it has been widely accepted for a long time as
a tough decision involving opportunity cost and agency cost. However, there are mutual acceptances among theoreticians that capital structure will affect firm value and share price. Also, the optimal capital structure level will maximize the firm’s equity value. Such difficulties and the mixed effects in dealing with capital structure inspire several researchers to put forward the proposal to the quest for the fact of this field. Some of them are Pilotte (1992), Lewis et al. (1996), Hull (1999), Abor (2005), and Carpentier (2006).

Regarding the result of this paper, the investors’ reaction to stock price regarding the fact about the firm’s capital structure can help to explain the market behavior and pulls out the business implication. The investors perceive that the firm’s capital structure is the significant factor influencing several aspects: causing bankruptcy risks, driving the firm’s growth performance and tax benefit, and also affecting the firm’s share price. The result is consistent with the findings in prior studies conducted by Pilotte (1992), Lewis et al. (1996), and Hull (1999). In addition, the current finding is close to Abor (2005), who found positive relationship between debt financing and ROE. However, it is inconsistent with Carpentier (2006), who found the independency of capital structure and valuation.

Statistically insignificant relations of four out of eight financial factors of interest to the market value of equity suggests that accounting data are not fully utilized as an explanation of equity price by the SET investors of the media and publishing industry. To a certain extent, the statistically insignificant relationships found in this paper reflect short-term behaviors that blend into rationale attitudes of the investors. In addition, statistically, the insignificance of value relevance of some financial factors more or less is rooted in potential drawbacks of such factors. Altogether, the results help to figure out the human and intellectual-intensive nature of Thailand media and publishing industry.

The finding statistically infers that for the SET players of Thailand media and publishing industry, net income is insignificantly relevant to the value of stock. Theoretically, net income growth drives value of a firm and stock performance (Meigs and Meigs, 1993; Copeland et al., 2000; Keown et al., 2003; Brigham and Ehrhardt, 2005). Typically, stock analysts focus on net income and use it to figure out earnings per share when they evaluate a firm’s financial status (Cottle et al., 1989; Downes and Goodman, 1990; Meigs and Meigs, 1993; Damodaran, 1996; 2002; 2006; Brigham and Gapenski, 1997; Copeland et al., 2000; Stowe et al., 2002; Keown et al., 2003; Brigham and Ehrhardt, 2005; Penman, 2007; Hirschey and Nofsinger, 2008).
The regression analysis in this research statistically reveals something different from the established theory and also is inconsistent with some prior findings reported by Varaiya et al. (1987), Graham and King (2000), Razeen and Karbhari (2004), El Shamy and Kayed (2005), Ragab and Omran (2006), Tan and Lim (2007), Alattar and Khater (2007), and Pirie and Smith (2008). The result conveys the fact to contradict the expected result.

In the equity market, if investors fully utilize the financial information disclosed on the financial statement to shape their opinions pertaining to stock price, the relationship of equity price and net income growth can be anticipated. It is possible that the investors of this industry rely on some other financial factors in assessing the firm’s stock performance (net sales or net operating profit) instead of the bottom line accounting item like net income. Stowe et al. (2002) and Damodaran (2002) commonly evidenced some potential drawbacks arising out of the genetic feature of earnings (net income). According to them, oftentimes, such earnings component includes nonrecurring transaction occurred from the firm specific or cyclicality. In that regard, to use face value of net income as disclosed on income statement can mislead investors in drawing valuation conclusion. In identifying this unusual item, Stowe et al. (2002) added that detailed effort and further discussion with management are strongly recommended for the analysts. Similarly, Brigham and Ehrhardt (2005, p. 105) cited that “net income is certainly important, but it does not always reflect the true performance of a company’s operations or the effectiveness of its operating managers”. These things are likely to be the facts which weaken the power of net income in the perceptions of the investors.

For the worse, to some extent, this reflects short-term attitude of security investment, or it indicates unrealized advantages of fundamental financial statement information in the Thailand market. Last but not the least, the current finding is consistent with Amir and Lev (1996), who also reported that earning is irrelevant to equity price based on their investigation of the wireless communication firms. According to Amir and Lev (1996), the firms, which naturally are amongst the technological based firms and sensitive to the technological changes, the financial data on accounting statements seem to be irrelevant to equity valuation. Examples of those firms include telecommunication and software manufacturers. As discussed earlier, media and publishing firms are categorized in the content and information industry, in which, typically, values are driven by intangible factors.
This is another reason to support the insignificant relevance of net income to the value of equity as found in this research.

The result statistically demonstrates that the historical data of dividend on the released financial statements do not significantly influence the views of the market participants on the firms’ stock price. In other words, financial statements dividend data disclosed by Thailand media and publishing firms are insignificantly relevant to the value of stock in the eyes of the SET investors. The proposition of dividend informational contents has been widely discussed for long time by several scholars including Modigliani and Miller (1961), Meigs and Meigs (1993), Copeland et al. (2000), Damodaran (2002; 2006), Brigham and Ehrhardt (2005), Penman (2007), and Siad (2007). However, the conclusions are varied between relevance and irrelevance.

The controversial arguments caused establishing of several theories relating to dividend (such as bird-in-the-hand theory, tax preference theory, signaling hypothesis, and clientele theory). The result in this paper can be discussed taking account of these theories. A statistically insignificant relevance of the dividend information reflects a few possible reasons.

Firstly, the investors value capital gain higher than dividend yield. Taking tax preference theory and the time value of money into account, capital gain is better than dividend yield in terms of tax saving and the time value effect. It is because according to the tax laws, capital gain is tax-exempt, whereas dividend is not. Even though the income tax withheld from dividend at the time of payment will be realized as the tax credit for individuals, the time value of money effect turns the tax saving today from capital gain to the investors’ advantage. Regarding the time value of money, obviously, the money saving today is more valuable than the money saving in the future.

Secondly, it may be possible that the investors have invested in Thailand media and publishing industry because they assumes that this industry is likely to grow well based on other information regardless of how well the financial and the dividend record is. This emphasizes the specific nature of the content industry that is sensitive to other non-financial information. In addition, clientele theory also explains that some investors prefer to invest in any securities based upon their individual profiles and preferences, no matter how the firms pay dividend. They may be young blood investors, who are risk taking, or probably keen on the colorful industry like the media and publishing. As a result of the usual tracking of the
movement of the industry, they believe that the firms will grow very well in the future. Then, they decide to invest in this industry. The finding that is consistent with the result found in this paper belonged to Watts (1973), whereas other prior findings are found to be inconsistent. Those include the findings of Pettit (1972), Asquith and Mullins (1983), Lonie et al. (1996), and Hughes (2008).

As to the theory established, debt service capability as the manifestation of a firm’s liquidity and credit health is an important factor attracting the flow of funds from creditors and investors (Meigs and Meigs, 1993; Copeland et al., 2000; Damodaran 2002). As stated by Meigs and Meigs (1993), profitability causes the business solvency, and also solvency encourages the firm profitability. Similarly, as pointed out by Copeland et al. (2000), even, credit health and liquidity of a firm do not create value, these factors make for fund to finance value creation.

Regarding the theories discussed, the researcher expects to see positive relation between debt service capability and the market equity. This is based on the belief that the SET participants should consider a firm’s ability to service debt when they decide to invest in the firm’s security. Damodaran (2002) also suggested that short-term liquidity risk and a firm’s long-term solvency are of importance for investment analysis. Nevertheless, it was found in this research that there is no statistically significant relationship between the change in the debt service capability and the change in the market value of equity. This expresses that, statistically, the firm’s fundamental data relating to debt service capability have no significant influences on the market’s opinion about the firm’s stock price.

The possible implications can be drawn by discussing the points made by several scholars. Regarding the response of the investors to the released historical data of debt service capability, the result possibly reflects profitable-oriented behavior of the investors as suggested by Meigs and Meigs (1993). As to Meigs and Meigs (1993), the capability to service debt principle and interests is of the main concerns to the firm’s creditors (suppliers, short-term and long-term lenders), whereas prospective investors tend to focus more on profitability, and value of the firms’ stocks. In addition, as posited by Brigham and Ehrhardt (2005), the investors dare to bear on risks adhering to profitable project because most of them typically can diversify their portfolios to mitigate risks, but the firm’s managers and creditors cannot. Another implication is probably relating to the past performances of the firms, which have no sign of insolvency or bankruptcy. This has conspired to confide the market about the
firm’s financial condition. As a result, statistically, debt service factor is not of concern to the investors.

Additionally, short-term behavior of the investors, as aforementioned, may be another reason supporting insignificance found in the statistical figure of this financial factor. The rests are the mutual implications having been discussed about the industry characteristics, which is sensitive to non-financial conditions as discussed by Biagi (1994; 2010), Amir and Lev (1996), Berman (2004), Flew (2004). This possibly drops the significance of financial fundamental factor disclosed on accounting statements. In regard to the prior recent findings, the result of this paper is different from Elston (2002), who confirmed the influential role of liquidity on a firm’s growth rate. Also, it is inconsistent with Fagiolo and Luzzi (2004). They reported that the firms with more liquidity problems tend to have less growing rate and to have more unstable pattern of growth.

The researcher expects the positive relation to exist between the capital expenditure and the market value of the equity according to the theory established that capital expenditure is used to support core business to generate new cash and create economic value to the firm in a long run (Downes and Goodman, 1990; Meigs and Meigs, 1993; Brigham and Fehrhardt, 2005; Damodaran, 2002; Libby et al., 2009). Basically, capital expenditure is another indicator utilized to evaluate the firm’s growth prospect because it is used mainly to maintain the continual flow of the production to support the sales growth rate. It is a value driver of a firm, particularly, the capital-intensive firm (Downes and Goodman, 1990).

Nevertheless, the current finding is different from the expectation and the established theory. On the other hands, it conspires to help the other aforementioned insignificant factors to emphasize the general view on the content industry that human and intangible factors drive value (Biagi, 1994; 2010; Amir and Lev, 1996; Berman, 2004; Flew, 2004; Vogel, 2007). This is also consistent with the discussion of Stowe et al. (2002) that in service industry, humans are the key operating factors; physical capital is less important and cannot be considered as value indicator.

Although investing in capital assets such as printing machine can practically drive cash flow and firm performance, the capital assets are not only a primary driver for publishing firms. The firms’ performance also depends on non-capital factors such as the firm’s reputation, information, writers, columnists, and reporters’ experiences. In addition, printing machine is
a long-term asset that can support the operation in a long run. Major spending on the machine does not happen every year. The development of new technology relating to the printing and publishing during this period is probably inconspicuous in the perceptions of the investors. This fact then drops the importance of the capital expenditure in non-capital-intensive environment.

As posited by Downes and Goodman (1990, p. 98),

The relationship between sales levels and capital expenditure is therefore an important factor in evaluating a firm’s viability. However, businesses vary in terms of how capital-intensive they are; manufacturers rely more on fixed assets to produce sales than wholesalers, for example.

With respect to the previous studies, the present study is found to be both consistent and inconsistent with others. The result is found to be consistent with McConnell and Muscarella (1985) regarding the sample corporations from public utility industry. McConnell and Muscarella reported that there is no relationship between capital expenditure and stock price. On the contrary, McConnell and Muscarella reported the existence of significantly positive relationship between the same factors based upon the industrial corporate sample. Kim (2001) reported no connection between future earnings and capital expenditures regarding the entire sample. Nevertheless, Kim found that positive coefficient of capital expenditure is significant after the samples are partitioned into the groups of success and nonsuccess firms. In addition, the present finding is also consistent with the finding reported by Echevarria (2007) but inconsistent with the ones suggested by Kerstein and Kim (1995), and Jiang et al. (2006).

According to Gujarati and Porter (2009) and Wooldridge (2009), in dealing with cross-sectional and time series data, it is possible that the uniqueness of the individual sample firms will differently influence the response of dependent variable on independent variables; this incident can cause biasness and inconsistency in the partial regression coefficients estimated.

To tackle this issue, in accordance with these scholars, it is suggested to allow the model to capture the heterogeneity effect by introducing dummy variable into the model. According to the result, it statistically demonstrated that the difference among firms has influence on the response of dependent variable on independent variables. WALD Coefficient Restrictions test
is also conducted to ensure the significance of the heterogeneity effect and the WALD statistics confirms the same result. By implication, the responses of the market value of the equity to the selected regressors, which are BVE, NI, DIV, CAPEX, NOWC, DSC, INV, and CS, are not the same for each different firm under Thailand media and publishing industry.

It is revealed by the adjusted R-squared of .709696 or 70.96 percent that the one-way fixed model obtained in this paper possesses relatively high explanatory power to the interaction between the market value of the equity and the selected financial exogenous. In other words, the variation of the market value of the equity can be explained by the changes in some of the selected financial variables accounted for in this paper (BVE, NOWC, INV and CS).

6.2.2 Conclusions

The researcher intends to investigate whether the SET participants employ fundamental financial statement information to assist their decisions to invest in the security of Thailand media and publishing industry. In exploring, the researcher examines the association between the equity value and the eight selected financial factors involuntarily disclosed on the firms’ financial statements. The eight regressors studied in this paper comprise book equity, net income, dividend, capital expenditure, net operating working capital, debt service capability, investment in non-core business, and capital structure. This is the practical methodology recommended to explore this phenomenon and has been employed in the past researches, for example the studies of Landsman (1986), Lev (1989), Graham and King (2000), Barth et al. (2001), Ibrahim et al. (2002), Hand (2003), El Shamy and Kayed (2005), Ragab and Omran (2006), Rahman and Mohd-Sáleh (2007), Tan and Lim (2007), and Pirie and Smith (2008).

Thailand media and publishing industry is the focus of this paper because of its vitality to individuals, society, and economy and due to the industry’s specific characteristics, which are realized as the informational content industry (ISIC Revision 4.0, United Nations, 2008) and typically its valuation is driven by non financial factors like human and intellectual assets (Biagi, 1994; 2010; Amir and Lev, 1996; Berman, 2004; and Flew, 2004).

The latter reason catalyzed the researcher to explore whether the fundamental financial factors influence the value of the of firms’ equity. Because the research focuses only on Thailand media and publishing industry during the specified periods of time (2004 – 2008), the generalization of the research then is limited as a consequence of such conditions. Some
other limitations causing non-generalization are from the differences of accounting practices among countries, and from the limited numbers of the independent variables of interest.

The fixed effect multiple regression analysis was used to analyze the data obtained from the Bloomberg database. The final observations contain 100 firm-year balanced panel data from 20 different firms spanning 2004 to 2008. The basic least square assumptions are satisfied without the presence of nonstationarity and multicollinearity problems, whereas heteroskedasticity and serial correlation presented were remedied by Newey-West standard errors method.

Descriptive statistics demonstrated low capital gains in the stock value. Possibly, the industry lacks salient technological innovation or noteworthy creation driving value of the industry. These negative factors, together with economic downturn, are the possible causes of a small average change in equity price and negative mean value of net income during the focus periods. The multiple regression results revealed that, statistically, the market value of the equity are positively and significantly associated with net operating working capital, investment in non-core business, and capital structure, whereas negatively and significantly associated with book value. For other factors (net income, dividend, capital expenditure, and debt service capability), there are no relationships detected between those factors and the market value of the equity.

The high explanatory power of the regression results implies that the SET investors employ fundamental financial data to shape the value of Thailand media and publishing firms’ equities. Nevertheless, the insignificant relationship found in some factors indicated that the investors do not rely on all fundamental factors disclosed on the accounting statements. This appears to be in accordance with the theoretical shortcoming of some financial factors as discussed by several scholars.

To some extent, the results reflect short-term behaviors that blend into rationale attitudes of the investors. This causes them to ignore some financial factors (dividend or debt service capability), which indicate long-term financial condition. Additionally, the result is consistent with the definition of the value of the content industry in the tone that its value is mainly dependent on the human and intangible drivers. This causes the investors to ignore capital expenditure factor, whereas some other fundamental financial factors are employed as the complimentary information to other information relating to non-financial factors.
The findings in this paper are consistent with the findings in the papers of Epstein and Pava (1995), Amir and Lev (1996), Graham and King (2000), Ibrahim et al. (2002), Naser et al. (2003), Razeen and Karbhari (2004), El Shamy and Kayed (2005), Ragab and Omran (2006), Alattar and Khater (2007), Tan and Lim (2007), and Pirie and Smith (2008). Based on large sample of cross-industry analysis, they found that the equity investors realize the benefit of financial statements and employ fundamental financial factors released as the complimentary tool to assist them to make security investment decisions.

In this respect, the results lend an implication beyond theoretical expectation about Thailand media and publishing industry, which is considered as labor-intensive industry. The implication indicates that in addition to non-financial factors, fundamental financial factors also play an important role in equity investment for Thailand media and publishing industry, of which its value is mainly driven by soft factors. Most importantly, in the broad perspective, even if Thailand goes through 1997 economic crisis, this result indicates no change of investors’ decisions in using the criteria in determining the market value of equity. That is that financial and non-financial information are significant compliment to equity investment in the eyes’ of the SET investors.

6.3 Recommendations

6.3.1 Regulators and the standard setters

The benefit of fundamental analysis to the equity investment is widely realized and encouraged by the standard setters of each country. That led to the implementation of several regulations including good corporate governance to govern the listed firms and equity market in providing useful, supportive, and transparent information to the investors. The market’s confidence in the publicized and released accounting statements will form as another powerful force helping to stabilize the financial market system. As to this importance, the standard setters should encourage the listed firm to disclose more information relating to the firm financial conditions. Also, testing for proper information disclosure should be another auditing step embedded in an auditing process.

In addition, this paper can be regarded as the primary validation of the policies implemented. According to the current result, some fundamental factors appear to be statistically
insignificant relevant to equity value. To some extent, this fact implies that the SET investors possibly ignore some financial statement factors in equity valuation. This provides the policy setters the broad picture of equity market behavior relating to security investment and possibly reflects the market’s confidence in the publicized and released accounting information. This signal suggests that it is a high time for the regulator to revisit and to validate the implementation of the enforced regulations governing financial reporting system.

In that regard, to explore whether the existing financial reporting system indeed provides the useful information to the investors, or whether the investors perceive the usefulness and rely on the released information, the standard setter should extend this research by validating the effectiveness of the regulations enforced. In addition, an overall market’s perceptions of the usefulness of corporate reports should also be comprehensively observed.

6.3.2 Investors and shareholders

Prominently, the findings empirically suggest that the investors and shareholders should enthusiastically keep their eyes on financial statement data, especially, on some fundamental financial factors (book equity, net operating working capital, investment in non-core business, and capital structure) because the change in these factors are found to be statistically significant relevant to the movement of stock prices. Additionally, they need to educate themselves more about fundamental analysis rather than placing all their reliance only on technical analysis.

As to the discussion made by Damodaran (2002) about equity investment analysis, there are two issues required to be addressed by investors before making investment decisions. The issues are pertaining to the degree of risks involving a firm. One of the highly recommended ways for potential investors and shareholders to keep tabs on a firm easily about this issue is to observe the capabilities to service debts. This is a practical way mentioned by Brigham and Ehrhardt (2005) and also reflected in their discussions relating to potentially financial constraint of a firm that the possibility of this problem can be foreseen and predicted based on the information disclosed on the financial statements.

According to the result of this paper, seemingly, the investors ignore this factor when they make investment decisions. Investing in a firm lead to a chance to gain attractive return, and also lead to the risk of loss or bankruptcy. Taking account of fundamental financial
components reflecting a firm’s long term performance and condition is of the essence. Regarding this, the researcher also recommended that in addition to non-financial factors and other fundamental factors, the investors should take other financial factors into consideration (especially, factor relating to risk assessment) together with other ingredients to form better intelligent decisions and mitigate riskiness in their portfolios.

6.3.3 The firms’ management

The results indicate that potential investors employ a firm’s fundamental financial factors on accounting statements to assess stock valuation. Thus, it is recommended that a firm’s manager should take this opportunity to keep the investors and shareholders informed by conveying the information about the firm’s growth prospect and financial condition through voluntary information. This should be performed in addition to preparing financial statements as required by the standards or regulations.

As pointed by Abdullah and Ismail (2008), nowadays, many firms are likely to employ financial reports as tools to convey the investors about the firm’s attractive performance by adding voluntary financial items (financial ratio and the like) into the reports. Also, according to Marston (2003), some firms use the financial disclosure to attract fund and signal firms’ qualities, whereas some other large and complicated firms use it to simplify their complexities and make it easy to be touched by the investors.

Clearly, the benefit of voluntary information not only enhances the financial understanding in non-financial investors but also signals the firm’s growth opportunity vividly. As a consequence of the public conveyance of the companies’ fact through accounting data, the conveyed information not only confides the investors in an unstable equity market situation but also attracts the new funds from them in the normal situation.

6.4 Further research

The previous value relevance studies in media and publishing industry are still limited, particularly the value relevance or other financial researches involving Thailand media and publishing market. A further study that matters to Thailand equity market can also be done extensively based on the current effort shown in this paper. The fruitful extension can be adhering to Thailand media and publishing industry by including the alteration of variables to
other financial factors or non-financial/intangible factors. One of the difficulty to include non-financial factors is there are no standard measurements for these variables. Nevertheless, if these factors are included, the research will be more completed. For example, observing the response of market price of equity to the change of a firm management team or star artists. Other researchers can also examine the market response to the information related to the firm’s ethical standard, salient development in the intellectual properties (human capital and patents), and the information content of strategic alliance.

Furthermore, future research can be conducted by observing the association of equity price with the emergence of new media such as digital contents, or increasing rate of internet subscription – in particular, the impact of government policy to the development of new media or information and communication technology.

Alternatively, the current study is also extendable by focusing capital-intensive industry and seeing how the market responds to the same independent accounting variables. This sort of comparative study will challenge and test the existing theories based on the empirical evidences in the Thai context.

In a broader scope, the comparative study based on the media and publishing industry among different countries will also be useful to the potential investors and the management in terms of enlarging their investment analysis knowledge and value creation understanding.

In addition, a further study can also be done by conducting the survey to see how the market perceives the usefulness and transparency of the corporate and accounting reports. The result will be fruitful for the standard setters and the regulators by providing them complimentary information that may matter to the enhancement of the policy, regulation, and other mechanisms used for governing the equity market.
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