CORPORATE GOVERNANCE AND THE LINKAGE

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ABSTRACT

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This paper provides an event study evidence on whether the announcement of the corporate governance (CG) scoring affects firms' market value in the Thai capital market. To find out the results, this paper conducts an event study and employs the 3 methodology models mean-adjusted return, market-adjusted return and market-model-adjusted return to test the effect on stock prices as a result of inclusion or exclusion from the annual CG scoring announcement in the period of 2009 to 2013. For the addition firms to the CG scoring, on the event day the abnormal returns do not immediately react to the CG scoring announcement news and slightly die out after day+1. For the deletion firms from the CG scoring, the abnormal returns do immediately and significantly negative react to the CG scoring announcement news on the event day and also slightly died out after day+1. This paper finds that the abnormal return price level slightly reverses back to the price level on the announcement day instead of staying at the new equilibrium. This evidence supports the price-pressure effect hypothesis. Moreover, regarding the power of measurement methods, this paper finds that the market-adjusted returns methodology seems to have less prediction bias than the other 2 methods the mean-adjusted returns and market model adjusted returns models.

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ABBREVIATIONS AND SYMBOLS

Abbreviations	Equivalence
AAR	Average Abnormal Returns
ACCA	Association of Chartered Certified Accountants
AD	Announcement Date
AR	Abnormal Returns
CAAR	Cumulative Average Abnormal Returns
CAR	Cumulative Abnormal Returns
CEO	Chief Executive Officer
COC	Cost of Capital
CG	Corporate Governance
CGR	Corporate Governance Report of Thai Listed Companies
DSDC	Downward-Sloping Demand Curve Hypothesis
EMH	Efficient Market Hypothesis
EP	Estimation Period
OECD	Organization for Economic Co-operation and Development
PPH	Price-Pressure Hypothesis
ROB	Report on Business
SEC	The Office of the Securities and Exchange Commission
SET	The Stock Exchange of Thailand
Thai IOD/IOD	The Thai Institute of Directors
TP	Test Period

CHAPTER 1

INTRODUCTION

1.1 Statement of Problem

Corporate governance (CG) become a public concern with the corruptions of the Asian financial crisis and the bankruptcy of former US corporate stalwarts such as Adelphia, Enron, Parmalat, Tyco, and WorldCom. Sawicki (2009) mentioned that a major cause of the breakdown of several East Asian economies was poor corporate governance. During the years before the crisis, solid macroeconomic fundamentals such as a high GDP growth, a low inflation, and a low budget deficit represent indistinct weak corporate governance and structures inappropriate to the open economies. The lack of proper disclosure and auditing exacerbated minority shareholders' exposure to abuses by controlling families and/or governments. Like other Asian countries, weak corporate governance practices have led to financial turmoil in Thailand. According to Piman Limpaphayom and Connelly (2004), Thailand confronts important corporate governance problems at two levels. First, the poor governance practices of firms create many difficulties including over-borrowing and overinvestment. Much of the overload borrowing spends on projects of uncertain benefit as well as unneeded and misguided diversification efforts. Second, Thai companies typically rely on bank financing rather than capital market financing to secure funds for growth. This leads to a lack of monitoring from equity markets.

CG has rapidly come to the public interests as an instrument to lessen problems. Practically, the basic principles of CG are accountability, responsibility, equitable treatment, transparency, vision, and ethics. However, comparing to other countries before the crisis many Thai firms incompletely applied the mentioned basic principles of CG (for example, OECD guidelines) and expectations. For this reason, after the crisis CG regulatory reforming becomes majority awareness of Thai government and the Office of the Securities and Exchange Commission (SEC).

Moreover, until now CG regulations and criteria have been reformed from time to time.

Based on the hypothesis that better CG is related to better firm performance, better-governed firms should perform better than worse-governed firms. Some empirical researches; Gompers et al. (2003), Brown and Caylor (2006), Dittmar and Mahrt-Smith (2007) found that good CG positively affects firm performance and market value.

1.2 Motivation

Most CG studies have focused on CG in developed stock markets, especially the US equity markets, thus the importance of CG in emerging markets, such as the equity markets in Thailand, remains under-explored. In addition, there is rarely aware of previous studies on CG and information content in terms of the relationship between market reaction and CG scoring announcement for the Thai stock market. Thus, this research is an event study that explores the market reaction to CG scoring announcement and the impact of the inclusions and exclusions of stocks on the CG scoring list in response to CG scoring announcement.

Regarding the said motivations, this research examines an aspect of CG in the emerging market of Thailand; the linkage of corporate governance and information content of CG scoring.

1.3 Research Questions

1.3.1 Do market players react to CG scoring announcement?

1.3.2 Can CG scoring announcement create abnormal returns? If so, is the price change temporary or permanent?

1.4 Objectives of the Study

1.4.1 To examine whether market players react to CG scoring announcement, and if so, to observe whether the reaction is immediately or slowly.

1.4.2 To investigate whether abnormal returns can result from the CG scoring announcement in the Thai capital market. If, so, to observe whether the price response is temporary (Price-Pressure Hypothesis: PPH) or permanent (Downward-Sloping Demand Curve Hypothesis: DSDC) change.

1.5 Contribution of the Study

This research provides views on the informativeness of CG in relation to the Thailand equity markets; the Stock Exchange of Thailand (SET). The results can be used to confirm the usefulness of CG and to promote the implementation of CG schemes.

In addition, this study explores the value of CG from different points of view since an event study of how the market reacts to CG scoring announcement is rarely aware of.

1.6 Theoretical Framework

Agency Theory

Jensen and Meckling (1976) propose a theory of the firm called the "agency theory." Agency theory is a theory, which is based upon the conflicts of interest between shareholders, company managers, and debt holders. They, in addition, specify the existence of "agency costs" which arise owing to the conflicts either between managers and shareholders (agency costs of equity) or between shareholders and debtholders (agency costs of debt). Financial markets imply these agency costs as a value loss to shareholders or agency problem**.** Moreover, the agency theory explains that an agency relationship exists when shareholders hire managers as the decision makers of the firms. Agency problems arise because managers do not solely act to maximize the shareholders' value. They may protect their own interests or seek the goal of maximizing firms' growth instead of earnings while making decisions. To reduce agency problems, the need for CG is come to firms' circumstances. The reason behind this interest is because of the agency problems encountered because of the separation of the shareholders and managers. When it fails to force a contract between

capital providers and managers, there will be other mechanisms to ensure the efficiency of capital allocation in the economy.

1.7 Scope of the Study

To answer the research questions, this paper uses the sampling data of CG scoring, daily stock closing-price of the listed companies on the Stock Exchange of Thailand (SET) and the SET Index during the period 2009-2013.

1.8 Outline of the Study

This research will be organized as follow;

Chapter 1 : Introduction

This chapter contains the introduction to this research explaining statement of the problem, motivation, objective, contribution, research questions, scope of the study and briefly the theoretical framework.

Chapter 2 : Literature Review

This chapter provides a summary of related literature.

Chapter 3 : Theoretical Framework

This chapter describes the theoretical background of how and why CG is important and comes into accounts.

Chapter 4 : Background of CG in Thailand

This chapter provides background information on CG in Thailand such as CG criteria and scoring.

Chapter 5 : Data, Methodology, and Hypothess

This chapter describes the characteristics of the data, the timeframe of the data, the source of the data, the research methodology and measurement methods, and the research hypotheses.

Chapter 6 : Empirical Results

Using the data from the SET and 3 measurement methods; mean-adjusted returns, market-adjusted return and market model adjusted returns, this chapter explores whether investors recognize or value the information content of CG

scoring announcement. If investors consider the information content of CG scoring to be valuable, share prices of the firms, adding (deleting) to CG scoring should react positively to the announcement.

Chapter 7 : Conclusion

This chapter make concluding remarks on all of the evidence and findings of this research and makes recommendation for further study.

CHAPTER 2

LITERATURE REVIEW

As mentioned in chapter 1, most of the CG research has been focused on the relationship between CG and its performance; financial performance and the cost of capital. Moreover, the studies providing evidence of CG announcement and market reaction are limited, especially regarding Thai stock market. This paper intends to provide evidences on whether the announcement of CG scoring affects the market value of listed firms in Thai capital market.

I, in my knowledge, am not aware of an event study of the announcement of CG scoring and market reaction in an emerging market, especially the case study of the Thai stock market. Therefore, there are no directly comparable research studies. Only one indirect research of CG and market reactions in the Thai stock market was found, that of Roy Kouwenberg and Visit Phunnarungsi (2013).

Therefore, this paper will review both the indirectly and directly related literature. The reviewed literature will be classified into 3 categories: CG and firm's performance, worldwide event study of CG announcement and market reaction, and an event study of CG announcement and market reaction in the Thai capital market.

2.1 Corporate Governance and Firm's Performance

Chen, Chen, and Wei (2003) examine CG risk in terms of the implied cost of capital and claim that the better governed firms are, the lower implied cost of equity will be.

Ashbaugh, Collins and LaFond (2004) studies the impact of corporate governance on cost of equity of US firms by linking governance attributes to a firm's expected returns, which are beta and realized returns. They emphasized that the CG attributes not only significantly affect directly to a firm's cost of equity but also indirectly via systematic risk. This is because most of the CG attributes are

significantly associated with systematic risk. The strong inverse relation of CG and the cost of equity were also supported by the studies of Cheng, Collins and Huang (2006); McKnight, Milonas, Travlos and Weir (2005), using UK data, reported a positive relation between Cadbury Code adoption and firm value, measuring by Tobin's Q. However, De Jong et al. (2005), using data from the Netherlands, find that the initiative has no effect on the CG characteristics of Dutch listed firms and their relationship with firm value measuring by Tobin's Q.

Klock et al. (2005) use firm-level data from the Investors Research Responsibility Center (IRRC) during 1990-2000 to find out the relationship between a governance index (GIM index), which is contained various anti-takeover and shareholder protection provisions, and the cost of debt. They, then, use the GIM Index as a measure of CG and report that the stronger that the anti-takeover governance factors are, the lower is the cost of debt financing, and vice versa. Furthermore, they emphasized that while the anti-takeover factors may be costly to shareholders, they are considered as a useful tool to protect bondholders' interest.

Byun, Kwak and Hwang (2008) use a sample of Korea listed firm-year observations during 2001 to 2004 to examine the relation between corporate governance practices and the implied cost of equity capital. They also apply a unique data set on firm level CG practices provided by the Korea Corporate Governance Service in their study. The research concludes that CG practices are negatively related to the implied cost of equity estimates.

Bozec and Bozec (2010) conduct research by using Canadian data during the year 2002 to 2005 and apply panel data from 155 firms or 517 firm-year observations. They find a strong relationship between governance scores measuring by the index developed by Report on Business (ROB), and the weighted average cost of capital. Their results suggest that better firm CG practices are associated with a decreased cost of capital.

Chaghadari (2011) constructs research by applying a statistical test of linear multiple regression on a randomly selected sample of listed firms on the Bursa Malaysia. The author reports a negative relationship between CEO duality and firm performances measuring by return on equity and return on assets. Moreover, the author finds an insignificant relationship between board independency, board size and

ownership structure as independent variables and firm performance as the dependent variable.

Soh (2011) states that in the case of firms that established CG mechanisms such as quality of information disclosure, independent directors, institutional shareholders, ownership structure, and audit committee, they should be well managed and profitable because the CG mechanisms are able to improve firm's performance. Although the cost of capital (COC) is mainly a risk measure, it is also related to corporate value and it could be considered as a key determinant of corporate's value other than market and accounting performance measures. This paper discusses the idea that CG practices would lead to not only lower firm risk and lower COC but also increased market value of the firm. When the firm is able to obtain a cheaper capital source, the market value of the firm is created. The COC, moreover, is very important for a firm to appraise future investment opportunities and to re-evaluate existing investments.

2.2 The Worldwide Event Study of Corporate Governance Announcement and Market Reaction

Gompers, Ishii and Metrick (2003) test the relationship between a broader measure of CG, capturing by their governance index, and stock valuations and returns. They use 24 governance rules to construct a governance index; the G-index for US companies, as a proxy for shareholder rights in about 1500 firms to study the impact of CG on firm performance during the 1990s. They conclude that the firm's CG, more specifically the level of shareholder rights versus the level of managerial rights, influences stock returns. A portfolio long in firms with strong shareholder rights and short in firms with strong managerial rights would have yielded abnormal returns of 8.5% per year on average during the 1990s. They conclude that weak CG is a significant contributor to the portfolio performance. In this way, serious concerns could be raised about the efficient market hypothesis, because these portfolios could be constructed with publicly available information. In the policy domain, CG proponents have referred to this result as evidence that CG measuring by G-index has a positive impact on firm performance.

Foerster and Huen (2004) investigate the relationship of CG measures and stock valuation in Canada from 2 points of view 1) whether CG matter to Canadian investors and 2) whether any association between CG and stock performance can be established. To answer these questions, their study is based on a short event 2-day period around the announcement date, a long event of a 3-month, 1-year and 5-year period. They conclude that in the short event 2-day period around the announcement date, CG perceptions do matter to Canadian investors. Markets react statistically significantly, but only marginally economically to "news" related to CG rankings. In the longer-term, good CG matters as well, although one must be careful to adjust for risk and to also consider a long enough time period. Their results confirm possible market inefficiency or a market reaction to the publicity.

Fernández Rodríguez et al. (2004), create a 3-day window event study in order to analyze the market reaction to announcements made by Spanish firms of compliance with the code of best practice in the period 1998-2000. This paper attempt to determine how the characteristics of different firms can account for the abnormal returns observed. The result shows a positive market reaction to announcements of compliance with the code of best practice. This could imply a major restructuring of the board of directors, where no wealth effects are observed for announcements that are related to isolated recommendations in the code. The impacts are greater for lower levered firms, and also greater for the higher the percentage of executive directors.

Cremers and Nair (2005) study the roles of internal and external CG mechanisms. They report that the greater the shareholder rights (proxied by vulnerability to takeovers), the greater is the profitability and positive long-term abnormal returns where there is strong internal CG.

Black and Khanna (2007) study Indian market players' reaction to the May 1999 announcement of India's plans to adopt the Clause 49 governance reforms. The finding show that over a 3-trading-day event window beginning on the announcement date large firms gain on average 4.5%, relative to small firms. They, then, conclude that investors expected the Clause 49 reforms to benefit large firms, and likely also medium-sized firms, which could suggest that properly designed mandatory CG reforms can increase share prices.

Gawer (2009) studies the market reaction to changes in CG scores with a sampling of 200 companies in the European Index Dow Jones Stoxx Large during the period 1999-2008. He concludes that there is a robust underperformance for the firms with downward revisions of the CG scores. He in addition shows 4 main findings in his study. First, the absence of post-event long-term over-performance is only robust for the upward revised companies for the CG scores. Second, the robustness of long-term underperform is confirmed for the downward revised companies regarding the CG scores. Third, upward revisions are followed by the uncertainty margin's (relative to the benchmark) stabilization. Fourth, downward revisions are followed by the uncertainty margin's (relative to the benchmark) reduction.

Teker and Yuksel (2014) conduct an event study to examine the stock price reaction of Turkish firms listed on the Borsa Istanbul for the announcement of CG scores in the period of 2007-2013. They focus on a short event window of the daily stock of 6 sampled firms (YapiKredi Bank, Sekerbank, BankAsya, TSKB, AlbarakaTurk and Is Fin.Kir) and the BIST100 index for 1-day and cumulative 3-day and 10-day periods. They report that only 4 firms (Finansal Kiralama, Albaraka, TSKB and BankAsya) show a positive response to the announcement of CG scores on the 1-day while 2 other stocks (YapiKredi Bank and Sekerbank) show a negative response. When the differences in the returns between stock returns and BIST100 is taken into account, only Yapikredi, BankAsya and Is Finansal Kiralama performed better and TSKB and Albaraka performed worse than the market. Moreover, when taking into account the overall difference on average returns between stock returns and market returns, there is an excess return of 0.113% for the 1-day period to the advantage of firms. However, this positive stock price reaction is overtaken by the market considering the cumulative 3-day and 10-day periods. The BIST100 index over the 3-day period and 10-day period provides a 0.584% and a 0.979% and consequently a better return than the underlying stocks of firms.

Frost, Racca and Stanford (2013) use the short event window cumulative abnormal returns (CARs) to find out the Nasdaq market response to CG deficiencies during January 1, 2004-December 31, 2005. They report a significant decline in share price in response to the receipt of a Nasdaq corporate governance deficiency notice with an evidence of a negative mean (median) 3-day CAR of -1.28% (-1.20%),

significant at the .001 (.01) level (two-sided tests used in all analyses) on the days surrounding the earliest deficiency notices received by each firm. They in addition emphasize that their study results indicate that the deficiency notices conveys new and valuable information about the quality of the firms' corporate governance, particularly as related to the integrity of their financial statements.

2.3 Event Study of Corporate Governance Announcement and the Market Reaction in the Thai Capital Market

Kouwenberg and Visit Phunnarungsi (2013) conduct a study of Thai listed firms base on a short-window event study ((day -1, 0, +1 separately) and (3-day event window ; days -1, 0, +1 combined)) and use the market model method in order to investigate the relation between firm-level CG and the market reaction to the announcements of violations of rules and regulations. They find that the market reacts negatively to violation announcements: the average abnormal return market reaction is -2.2% during the 3-day event window around the announcement (days -1, 0, +1). The market reaction is especially negative when firms commit violations classified as severe: -4.1%. Their result could imply that violation announcements are bad news for investors. However, they find no significant difference between the abnormal returns of firms with high and low CG scores: the average abnormal return is -1.1% for high CG firms and -2.7% for low CG firms, but the difference is not significant. Nevertheless, they find a significant difference in market reaction between firms with low and high past violation records. The average abnormal return is -4.4% for good firms (low past violations), while for bad firms the market reaction is -1.3%.

CHAPTER 3

THEORETICAL FRAMEWORK

To answer the research questions of this paper, 2 related theoretical frameworks are taken into account; 1) agency theory, and 2) market efficiency theory.

3.1 Agency Theory

Jensen and Meckling (1976) propose a theory of the firm called the "agency theory," which is based on conflicts of interest between 3 parties; stockholders, company agents (managers), and debtholders. In addition, "agency costs" could be specified as agency costs of equity and agency costs of debt. The agency cost of equity is the conflicts between shareholders and managers. The agency cost of debt is the conflicts between shareholders and debtholders. Therefore, the agency costs are agency problems, which are a value loss for the shareholder. Moreover, agency costs could occurre when shareholders (principals) hire managers (agents) to be the decision makers of the corporations on behalf of them but managers do not solely act to maximize the shareholders' value. They, while making decisions, protect their own interests or seek the goal of maximizing the companies' growth instead of profits.

The explanations of the actions of various interest groups leading to firm's agency problems are described in figure 3.1.

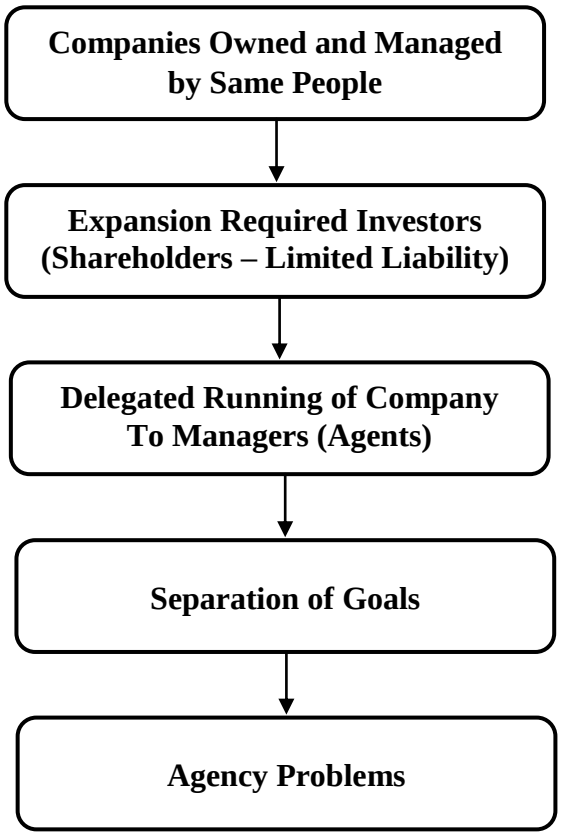

Figure 3.1 Actions of Various Interest Groups Cause Firm's Agency Problems
Source: http://kfknowledgebank.kaplan.co.uk

In order to reduce agency problems, firms need CG because of the agency problems incurred by the separation of the shareholders and managers. When it fails to enforce the conflict between capital providers and managers, there has to be other mechanisms to ensure the efficiency of capital allocation in the company. Evidence of the need for CG, for example, follows:

1) A CG code or CG rules, is needed when the market mechanism and shareholder activities are not enough to monitor the firm.

2) Although compliance is voluntary, the fear of damage to reputation arising from CG weaknesses and the threat of delisting from stock exchanges renders it difficult not to comply. There are a number of codes of conduct and recommendations issued by governments and stock exchanges such as the UK Corporate Governance Code, the OECD Code, and the ACCA Code.

Up to this point, it cannot be denied that agency theory is highly influential in shaping CG system reform.

3.2 Market Efficiency Theory

In order to examine the information content of CG rating announcement and market reaction in the Thai capital market, this research paper also takes into account market efficiency theory because market efficiency theory will be used to explain the results of how the stock market or speculator reacts to CG rating announcement events. The stock added (deleted) to CG scoring group could imply good (bad) news.

Fama (1970) states that market efficiency is rooted in the principal that the market should effectively allocate owner resources among capital stock. In an efficient market, prices provide accurate signals for resource allocation. With this result, firms can make production investment decisions, and investors can choose among the securities that represent ownership of the firms' activities under the assumption that security prices at any time "fully reflect" all of the available information. In addition, Fama calls a market in which prices always "fully reflect" available information as "efficient market," which is an important aspect of the Efficient Market Hypothesis (EMH)."

Moreover, Brealey and Myers (2003) suggest that the EMH requires that outperforming the market consistently is impossible. Prices should be equal to the discounted value of future cash flows. In an efficient market, currently available information is used to make a best estimate of future cash flows or dividends. These future cash flows are then discounted to represent the individual's preference for returns closest to the present period. According to this theory, future returns are based on random information not available in the current environment.

The EMH is important to studies of market efficiency because it implies that systematic profits in financial markets are impossible. In order to systematically make a profit in a capital market the investor must possess some sort of superior knowledge or method. This could mean a trading strategy based on publicly available information, which can consistently be implemented to make a profit, or better information with which to make decisions that all market participants do not have

available. A market conforming to the EMH rules out both of these possibilities because they would allow for systematic profit. If the EMH can be proven to hold for a certain market, investors can not consistently “be at the market.” (However, investor returns still experience risk and variability that can be mistaken for outperforming the market in the short-run.) In such a market, investors cannot expect returns higher than the market returns and therefore should not waste time and money attempting doing so.

CHAPTER 4

BACKGROUND OF CORPORATE GOVERNANCE IN THAILAND

Piman Limpaphayom and Connelly (2004) state in their study that it became obvious that weak CG practices could be the root of the problems when Thailand faced the financial crisis in 1997. Therefore, a close inspection of CG practices of many Thai companies has disclosed that the local CG practices were mismatched with international standards and expectations. With poor CG practices, many organizations faced financial distress and went on bankruptcy proceedings or an aggressive financial restructuring process.

Furthermore, with supporting evidence from Piman Limpaphayom and Connelly (2004) paper, Sasivimol Meeampol et al. (2013) also emphasize that if a company has a weak internal control system, which leads to creative accounting and its financial statement does not comply with accounting standards, failure of the firm can occur. Hence, many companies have begun CG in order to keep away from these scams and economical irregularities. Nowadays, decision makers conclude that the issue of the CG concept can endorse resolve in financial markets, encourage investment, and then cause successful and sustainable growth. The quality of financial reporting is one of the most important tasks of CG. CG, moreover, is an alternative mechanism that can reduce agency costs. CG is a tool to sort out through the limiting management's opportunistic behavior and finally it leads to quality improvement, reporting reliability, and corporate value increasing.

Key principles of CG are ethics, transparency, vision, equitable treatment, accountability, and responsibility. These key principles of CG, which are executed by most Thai companies, comply with the international Organization for Economic Cooperation and Development (OECD) guideline standards and anticipations. Therefore, the Securities and Exchange Commission (SEC), which is responsible for controlling listed firms, issues CG regulations to control listed companies on the

Stock Exchange of Thailand (SET). Two years after the Asian financial crisis, the Thai Institute of Directors (Thai IOD) is established. The IOD is a leading organization dedicated to improving director professionalism and directed CG assessment of Thai listed firms. Furthermore, the IOD and McKinsey & Company Thailand jointly with the SET and the SEC, cooperatively commenced an effort to standardize CG practices of the listed Thai firms. The important outcomes are circulated in the reports called the "Corporate Governance Report of Thai Listed Companies (CGR)." This CGR report assists Thai listed firms in developing their CG practices. From time to time, the financial market regulators; the SEC and the SET, and the IOD, aim that the CG standards will be keen and consequently benefit both investors and companies equally with specific objectives as follows.

1) To study and follow up the CG practices' development of listed firms in Thailand.

2) To publish a CGR report to present CG performance of Thai listed firms, and provide recommendation for improvement.

3) To provide inputs for regulatory agencies in formulating a CG framework.

4) To provide CG information to securities analysts in order to facilitate their investment decision.

5) To make use of the results in other activities to promote good CG such as the CG award and the selection of board of directors for the Board of the Year Awards and SET Awards by the IOD and the SET.

The Thai CG's structure has not changed dramatically. Small incremental improvements have been made occasionally, with further enhancements to come.

Prugsamatz (2010) report that the SET published its first report on CG in 2001, and attempted to put in place a stable structure for the foundation for better operations, accountable conduct, and so that the overall economic development and well-being of the country could be established. The 15 principles of good CG contained in the SET CG report, and amended in 2006, are relatively comparable to the OECD's CG principles. In 2007, CG self-assessment was introduced by the SET. In addition, some of the assessment criteria are derived from the OECD's CG principles because they are found to be adaptable to a listed firm's situation. The

purpose of the CG self-assessment is to be used for internal usage by listed firms. This CG self-assessment, furthermore, allow companies to assess their level of compliance with the principles of good CG prior to reporting their CG practices in their annual reports. These guidelines further evidence of the initiative undertaken by the nation to reform and act in accordance with international standards.

As stated, the assessment criteria were based on the OECD's CG principles. There are 148 criteria in the following 5 categories.

1) Rights of Shareholders 24 items
2) Equitable Treatment of Shareholders 16 items
3) Role of Stakeholders 18 items
4) Disclosure and Transparency 36 items
5) Board Responsibilities 54 items

The CG scorings for volunteer Thai listed companies are annually announced during the month of October to December at a public seminar held by the SEC, the SET, and the IOD. In addition, a list of companies achieving good CG scoring is also publicized in the CGR report and distributed to related parties on the seminar day. The volunteer Thai-listed companies joining the CG program are classified into 6 groups according to their CG scores in the CGR publication. Each group attains a different level of recognition denoted by the number of the National Corporate Governance Committee Logo, ranging from one to five, and none for those with lower than 50 scores. The details are shown in Table 4.1 below.

However, only CG scorings of top 3 CG groups, which are Good, Very Good, and Excellent, are disclosed to the public at the said seminar and in the CGR report. The CG scorings of group 2, group 1, and no group given are not reported.

Table 4.1 Corporate Governance Scoring Group Classification

Score	Rang Number of Logo	CG Scoring Group
90 - 100		Group 5 : Excellent
80 - 89		Group 4 : Very Good
70 - 79		Group 3 : Good
60 - 69		Group 2
50 - 59		Group 1
Less than 50	No logo given	No group given

Source: Thai Institute of Director Association

CHAPTER 5

DATA, METHODOLOGY, AND HYPOTHESIS

5.1 Data

5.1.1 Scope of the Study

The objective of this study is to investigate the abnormal returns of the stocks due to the CG scoring announcement effect. To investigate the effects on Thai capital, this research uses the timeframe between 2009 and 2013.

In a strong and efficient market, stock prices absorb news quickly. However, the Thai capital market is not a strong efficient market so stock prices do not completely reflect the impact of all news, and the level of impact of the news is hardly measured.

In order to capture only the effects of CG scoring announcement news, furthermore, this paper has screened out data from other news. In this way, the stocks that had event-driven changes are eliminated. Event-driven changes are from new issues, mergers and acquisitions, bankruptcies, and other similar corporate events. Such event-driven changes are not within the scope of this study.

In this research, the data are cleaned many times until they become a "clean sample," in other words, a sample in which no significant news makes the stock's daily return move more than $\pm 5\%$. Note that every stock usually has daily or weekly news, but not all news affects the stock price significantly. Moreover, the cleaning sample process in this paper does apply the process that explains in Cholamas Keratithamkul (2005).

Before going to the "clean sample," 2 criteria are set to screen out the impact from irrelevant news.

Criteria 1: Eliminate samples that have trading data missing or non-liquidity, dividend payout announcements, go under merger and acquisition processes, go under

tender offer processes, go under business restructuring processes, undergo a company name change, or voluntary delisted.

Criteria 2: Eliminate samples that have raw daily return movements of more than $\pm 5\%$ (subjective) due to events such as news that directly benefit (harm) the industry, business expansion plan announcements, and other news that show the company's advantages (disadvantages).

After cleaning the samples with those 2 criteria, the final samples chosen for this study satisfy the following criteria:

1) Free from news of major events including mergers, acquisitions, bankruptcies, and business restructuring news.

2) Free from other news that highly dominate stock price movement.

The cleaning process has limitations; for example there may exist news that is inside information or non-disclosure in the news center. This would lead to contaminated samples and deviated results. However, average abnormal returns are measured for the whole period. Thus, the effects from some of the contaminated samples could be minimized when they are included in the overall sample.

5.1.2 Source of Data

Daily SET, SET Indices, and the daily stock closing prices are obtained from Bloomberg. All prices have been adjusted for dividends and stock splits. The CG scorings of listed stocks announcements for every year are available on the IOD website.

5.1.3 Data Sampling

As mentioned, in order to investigate the effects of CG scoring announcement on the Thai capital market, this study uses the timeframe between 2009 and 2013. There are a total of 140 stocks for additions and 98 stocks for deletions in this timeframe. Table 5.1 shows the number of stocks being added and deleted during the study period.

Table 5.1 Number of Stocks on the SET Being Added and Deleted from CG Scoring from the Years 2009 to 2013

		2009	2010	2011	2012	2013
SET		471	473	471	484	507
SET on CG Scoring Record		222	318	306	313	339
Additions	**Before cleaning out**	24	111	22	32	38
	After cleaning out	20	58	18	22	22
Deletions	**Before cleaning out**	90	17	34	27	11
	After cleaning out	35	15	23	18	7

5.2 Methodology

The methodology of this research paper is called “event study”. This method divides the test into many event windows around he announcement date (AD) and the event date (ED) to support hypothesis testing. In addition, the methodology in this paper broadly follows Brown and Warner (1980, 1985) methodology and Thitima Sitthipongpanich (2011) the guiding methodology step of event study.

Thitima Sitthipongpanich (2011: 60) states on her study of Understanding the Event Study that:

> An event study is an empirical analysis that is normally used to measure the effect of an event on stock prices (returns). Although the majority of previous literature investigates stock prices, several studies examine stock trading volume, or return volatility. The event study is of importance because it can be used to evaluate the impact of company policies on firm value. The empirically conducted study is based on the following assumptions.
>
> 1) Under the market efficiency hypothesis, the impact of an event will be instantly reflected in stock prices. Therefore, the market reaction to the event can be measured by stock returns over the study time period.

2) The event is unforeseen. Abnormal (excess) stock returns indicate the market reaction to the unanticipated event.

3) During the event window, there are no confounding effects, meaning that the effect of other events is isolated.

Schweitzer (1989), in addition, mentions on his study as follows:

> Event studies examine the stock returns for specific firms (or for an industry) before and after the announcement of a special event. … Changes in the stock's price, then, have a major effect on the stock's returns. News of a significant event could alter the pattern of stock returns for a firm (or industry). Suppose an event is taken as good news-that is, investors believe the event portends a bright future for the firm. The firm's stock price will increase as a result. This price increase represents a capital gain, which raised the return on the firm's stock.

Hence, in order to answer the research questions, as mentioned, this paper conducts the test base on five main steps as described by Thitima Sitthipongpanich (2011).

Step 1: Identify the Event Date and Select Sample Firms.

This step is created in order to identify the event of interest and to specify the event date. The event date is defined as the announcement date (AD) of the event, or "day 0."

The event of interest of this research is the date that the SEC, the SET, and the IOD jointly announce the listed company CG scoring at their annual public seminar. In addition, the CG scoring of the listed firm is in effect on the AD. The history of the CG scoring announcement date, during the years 2008-2013, is shown in table 5.2.

Table 5.2 History CG Scoring Announcement Date

Year	CG Scoring Announcement Date
2009	December 18, 2009
2010	November 24, 2010
2011	December 16, 2011
2012	October 29, 2012
2013	October 17, 2013

In order to examine the result of the CG scoring announcement and market reactions, this paper is interested in only the firms being added and deleted from the CG scoring lists.

Step 2: Identify the Time Line of an Event Study.

There are 2 sub-period in the event time period: test period (TP) or event window and estimation period (EP). The impact of event stock prices/returns will be examined in the TP on returns. An example of the time line of an event study is shown in Figure 5.1.

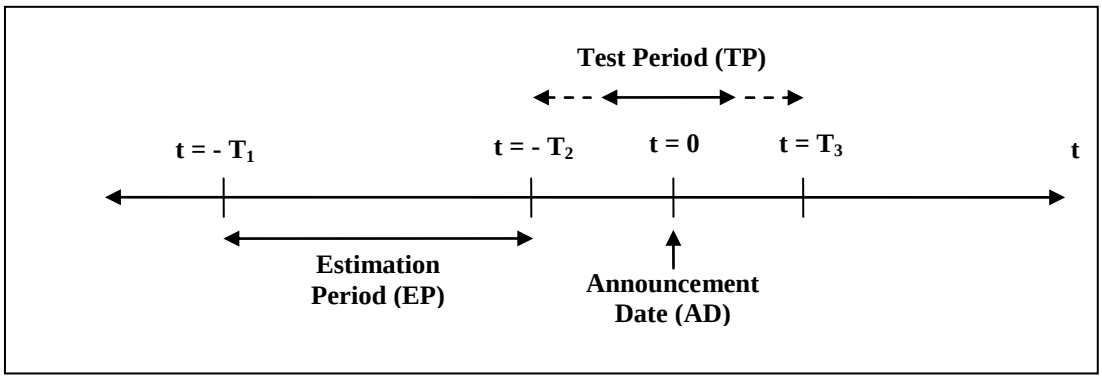

Figure 5.1 Time Line of an Event Study

To examine how the market reacts to an event, the TP could be either a short event window around the event such as a 2-day (-1,0) period, or a long event window such as a month or a year before or after the event date. A short event window is used on many papers. For example, Lummer and McConnell (1989), in

their research entitles on "Further Evidence on the Bank Lending Process and the Capital-Market Response to Bank Loan Agreements," and Bruner (1999) in their study calls "An analysis of value destruction and recovery in the alliance and proposed merger of Volvo and Renault," conduct their studies by using a 2-day (-1,0) period. The long event window is also used in several papers such as that of Gregory (1997), who applies a 60-month window on the study, "An Examination of the Long Run Performance of UK Acquiring Firms." Hertzel, Lemmon, Linck, and Rees (2002) run a 36-month window on the study, "Long-Run Performance following Private Placements of Equity."

The EP, in addition, is reasonably long in order to reflect the expected frequency of data availability. For example, Lummer and McConnell (1989) in their study above uses 150 days, while Small et al. (2007) use 225 days in their study, "Size Does Matter: An Examination of the Economic Impact of Sarbanes-Oxley."

Step 3: Estimate the Expected Return for Each Sample Stock Over an Estimation Period (EP)

The expected return, $E(R_{i,t})$, is used as the benchmark return, which is represented the return that is not related to the event of interest, in the normal situation to compare with the actual return during the event window.

Several researchers have used different model choices to estimate the expected returns in their studies. These choices of model are for example mean-adjusted returns, market-adjusted returns, market-model-adjusted returns, CAPM-adjusted returns, reference portfolios, the matched firm approach and the Fama-French three-factor model. However, according to my findings, the most widely-used are mean-adjusted returns, market-adjusted returns, and market-model-adjusted returns. Therefore, this research paper will use these 3 models to calculated expected returns.

(1) Mean-Adjusted Returns

The mean-adjusted returns methodology concentrates on the average return over the estimation period. According to Brown and Warner (1985), the mean return ($\bar{R}_i$) during the estimation period is the expected return of each stock.

$$\boldsymbol{E(R_{i,t}) = \bar{R}_i} \quad (1)$$

(2) Market-Adjusted Returns

The market-adjusted return methodology takes into account market-wide movements which occurred at the same time as that the sampled firms experienced the events. This method was used by Deininger, Kaserer and Roos (2000); Cusick (2001), Chakrabarti, Huang, Jayaraman and Lee (2005), Weber et al (2008), and Kouwenberg and Visit Phunnarungsi (2013).

Regarding market-adjusted returns, the expected return ($E(R_{i,t})$) is the market return ($R_{m,t}$) at the same period of time, assuming that all stocks, on average, generate the same rate of return. Therefore, the formula for the expected return of the market-adjusted return is:

$$\boldsymbol{E(R_{i,t}) = R_{m,t}} \quad (2)$$

(3) Market-Model-Adjusted Returns

The market-model-adjusted return methodology takes into account both market-wide factors and the systematic risk of each sampled security. This model is used to control the relation between stock returns and market returns, or allows for the variation in risk associated with a selected stock. It was used by many researchers such as Cooper and Woglom (2003); Liu (2004), and Small et al. (2007).

Regarding market-model-adjusted returns**,** the expected return is calculated based on a single factor market model. The ordinary least squares (OLS) regression is used to estimate the parameters, $\hat{\propto}_i$ and $\hat{\beta}_i$, of this model during the estimation period. Therefore, the equation for the expected return of the market-model-adjusted return is:

$$\boldsymbol{E(R_{i,t}) = \hat{\propto}_i + \hat{\beta}_i R_{m,t}} \quad (3)$$

Step 4: Estimate the Abnormal Returns

For an individual stock, an abnormal return is the difference between the actual return on time (t) in the event window and the expected return of an individual stock. Therefore, the equation for the abnormal returns is:

$$\boldsymbol{AR_{i,t} = R_{i,t} - E(R_{i,t})} \quad (4)$$

In order to calculate the overall abnormal returns, they can be classified according to two dimensions, first, through time and second, across securities.

For the through time abnormal returns, the sample average abnormal returns (AAR) for event day t is used as a measure for the abnormal price movement on that day.

$$\boldsymbol{AAR_t = \frac{1}{N} \sum_{i=1}^{N} AR_{i,t}} \quad (5)$$

where, N is a number of sample firms.

For the across securities abnormal returns, the stock's cumulative abnormal returns (CAR) during the window is computed by summing the stock's abnormal returns during the window.

$$\boldsymbol{CAR_i(t_1, t_2) = \sum_{j=t_1}^{t_2} AR_{i,j}} \quad (6)$$

where, AR_{ij} is the abnormal returns on security i in the interval j, while interval j is the range from time t_1 to t_2.

Afterwards, the cumulative average abnormal returns are calculated and denoted it CAAR across firms. It is a measure of the abnormal performance over the event period.

$$\boldsymbol{CAAR_i(t_1, t_2) = \frac{1}{N} \sum_{i=1}^{T} CAR_i\,(t_1, t_2)} \quad (7)$$

where, N is the number of sample firms.

Lynch and Mendenhall (1997) emphasize in their study that cumulative average abnormal returns (CAAR) have a greater power when the abnormal performance is concentrated on firms with short (long) windows.

Step 5: Test the Significance of Abnormal Returns

The statistical significance of abnormal returns test is the cross-sectional dispersion of each metric to estimate its variance. Most event studies including those of Brown and Warner (1985), Barber and Lyon (1997), Lynch and Mendenhall (1997), and Kouwenberg and Visit Phunnarungsi (2013), have used the parametric test of t-statistics as a significant test.

Under the assumption that abnormal returns are cross-sectional independent and identically normally distributed, for the AAR_t abnormal return measure, whether or not the AAR_t is different from zero can be tested using t-statistic below:

$$\boldsymbol{t_{AAR} = AAR_t / S_{e_{i,t}}} \tag{8}$$

For the $CAAR_i$ cumulative average abnormal returns measure, whether or not the $CAAR_i$ is different from zero can be test by t-statistic below;

$$\boldsymbol{T_{CAAR} = \frac{CAAR_t}{S_{cs}/\sqrt{N}} \approx T_{N-1}} \tag{9}$$

where, S_{CS} is given by;

$$\boldsymbol{S_{CS} = \left[\frac{1}{N}\sum_{i=1}^{N}[CAR_i(t) - CAAR(t)]^2/(N-1)\right]^{1/2}} \tag{10}$$

5.3 Hypotheses

Harris and Gural (1986) indicate that the efficient market hypothesis (EMH) predicts that share prices reflect all publicly available information. Thus, the purchase or sale of a large number of shares will have no impact on price.

Moreover, the EMH can be categorized into 3 forms as follows:

1) The weak-form EMH assumes that current stock prices fully reflect all historical information.

2) The semi-strong form EMH assumes that current stock prices fully reflect all public information.

3) The strong-from EMH assumes that current stock prices fully reflect all public and private information.

On the other hand, the study of Scholes (1972) argues the study of EMH of Harris and Gural (1986). Scholes (1972) proposed 2 hypotheses: a downward-sloping demand curve hypothesis (DSDC) and a price-pressure hypothesis (PPH), which predict that a large stock purchase (sale) will cause the price to increase (decrease) even if no new information is associated with the transaction. The DSDC assumes that securities are not close substitutes for each other. Therefore, the long-term demand is less than perfectly elastic. For the DSDC, equilibrium prices change when demand curves shift to eliminate excess demand (downward-sloping demand curve). Security price reversals are not expected because the new price reflects the new equilibrium distribution of security holders. Price-pressure hypothesis (PPH) assumes that investors who accommodate demand shifts must be compensated for the transaction costs and portfolio risks that they bear when they agree to immediately buy or sell securities which they otherwise would not trade. For PPH, the demand shift does not change the equilibrium value of a stock. Therefore, security price will reverse to its equilibrium level after the event and flatten out.

In addition, the conclusion of whether price effect is a temporary or a permanent effect is still a puzzle. Harris and Gurel (1986) found that the evidence supported the PPH. Their study is supported by Lynch and Mendenhall (1997) who find temporary abnormal returns for both additions and deletions of stocks in the S&P 500 Index. However, there has been some evidences against the PPH. Examples can be found in the work of Shleifer (1986), Edmister, Graham and Pirie (1994), and Beneish and Whaley (1997).

Ergin (2012) states that CG scoring influences the way market players evaluate a firm's stock price. In addition, Klapper and Love (2004) and Durnev and Kim (2005) examine the effect of CG on firm value. Both papers conclude that the adoption of good CG practices helps to increase shareholder value. In the light of those researches, this study, thus, investigates the effect of CG on firm value indirectly and tests whether market players value CG scoring. To answer this

question, this paper focuses on addition (deletion) Thai listed companies of CG scoring. The first hypothesis is that the announcement of addition to CG scoring is good news for market players, a sign of transparency, and thus the market players react positively.

Hypothesis 1: Market players react positively to the announcement of addition to CG scoring.

By contrast, the announcement of deletion from CG scoring is bad news for market players, a sign of potential negligence or expropriation, and thus the market players react negatively.

Hypothesis 2: Market players react negatively to announcement of deletion from CG scoring.

5.3.1 Summary of the Event Window of This Research and Expected Results

This research uses the concept of short-window event study to investigate the market reaction to the announcement of CG scoring of listed stocks. To investigate the results, 3 models are used to calculate expected returns; mean-adjusted returns, market-adjusted returns and market-model-adjusted returns. Moreover, this paper uses the estimation period of 165 days prior to the announcement day, which is consistent with previous event studies of the Thai stock market. This paper, furthermore, focuses on average abnormal returns (AAR) and cumulative average abnormal returns (CAAR) for days -1, 0, +1, and 0,1 where day 0 is the announcement date (AD) of the CG scoring.

The timeline of event window of this research is shown on figure 5.2.

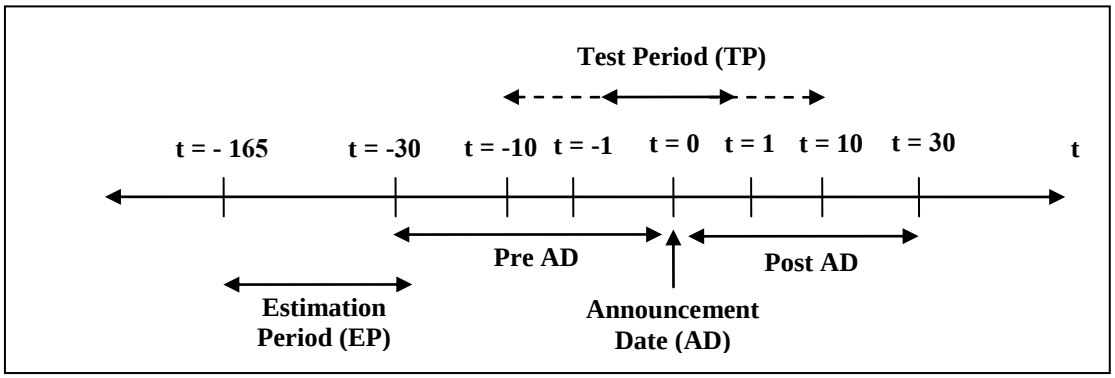

Figure 5.2 Time Line of an Event Study of This Research

In order to examine the DSDC and PPH hypothesis, this research creates long event window from AD-10 to AD+10 and it is divided into 3 sub-periods in order to test the hypotheses. Moreover, in order to test the early expectation effect the pre AD period is added.

1) The pre-announcement window runs from 10 days prior to announcement day (AD-10) to the announcement day (AD).

2) The run-up window runs from the announcement day (AD) through the day after the announcement (AD+1).

3) The post AD Permanent window runs from the day after the announcement (AD+1) until the end day 10 (AD+10).

4) The total permanent effect window runs from the announcement day (AD) until the end of day 10 (AD+10).

Table 3 summarizes the implications of each hypothesis for the AAR on AD-1, AD and AD-1 and for the CCAR for the 3 windows. The table presents the predictions for additions and deletions.

For the daily abnormal returns, a positive (negative) abnormal return for additions (deletions) can be observed on the pre AD in the full anticipation case. A large positive (negative) abnormal return on announcement day (day 0) and one day after the AD is noticeable because market players adjust their portfolio on that day in order to make a profit (cut loss).

For the long window, the expectations for the addition case in each event window are as follows (the predictions are symmetrical for the deletion case):

1) The abnormal return should be positive in the Pre Announcement Window (AD-10, AD) if there is an anticipation of the news.

2) The abnormal return should be positive in the Run-up Window (AD, AD+1) if there is no anticipation of the news because investors purchase stocks after the announcement date. This window can be observed as a strategy for making a profit.

3) In the post AD permanent window (AD+1, AD+10), the abnormal returns should be positive if it supports the DSDC or should be zero if it supports the PPH.

4) The Total Permanent Window (AD, AD+10) shows the total magnitude of abnormal return from the CG scoring announcement news. It expects that the price reversal is not fully reverse and it remains positive over the total permanent window. Thus, the abnormal returns should be *positive* in this window in order to support the DSDC.

In short, the downward-sloping demand curve hypothesis (DSDC) assumes that the stock price will move from the pre announcement price level to the new equilibrium level and stay at that level permanently. As a result, the cumulative abnormal return remains positive in the post announcement window. On the other hand, the price-pressure hypothesis (PPH) supports the idea that the stock price will converge back to the pre announcement price level instead of staying at the new equilibrium level. Therefore, the cumulative abnormal return will not be positive in the post announcement window because the price reversal totally offsets the abnormal returns.

Table 5.3 Predictions of Hypotheses for the Event Days and the Specific Event Windows of Stock Added (Deleted) to the CG Scoring

Addition to the CG Scoring	**Day-AAR**			**Windows-CAAR**			
				Pre-Announcement	**Run-Up**	**Post-AD Permanent**	**Total Permanent**
Hypotheses	AD-1	AD	AD+1	AD-1, AD, and AD-10,AD	AD, AD+1	AD+1, AD+10	AD+1, AD+10
Panel A: Addition							
PPH/ no anticipation	Zero	Positive	Zero	Zero	Positive	Zero	Zero
PPH/ full anticipation	Positive	Positive	Zero	Positive	Positive	Zero	Zero
DSDC/ no anticipation	Zero	Positive	Positive	Zero	Positive	Positive	Positive
DSDC/ full anticipation	Positive	Positive	Positive	Positive	Positive	Positive	Positive
Panel B: Deletion							
PPH/ no anticipation	Zero	Negative	Zero	Zero	Negative	Zero	Zero
PPH/ full anticipation	Negative	Negative	Negative	Negative	Negative	Zero	Zero
DSDC/ no anticipation	Zero	Negative	Negative	Zero	Negative	Negative	Negative
DSDC/ full anticipation	Negative	Negative	Negative	Negative	Negative	Negative	Negative

CHAPTER 6

EMPIRICAL RESULTS

This chapter presents the test results on whether market players react to CG scoring announcements, and whether CG scoring announcements create abnormal returns, and if the price change then is temporary or permanent. For a clear explanation, this chapter is divided into 5 parts: part 1: daily abnormal returns of additions and deletions, part 2: long window statistics for daily abnormal returns, part 3: implications regarding market efficiency, part 4: the power of measurement methods, and part 5: the determinants of market reactions to CG scoring announcements. Moreover, as stated in chapter 5, 3 methodology measurements were used to investigate abnormal returns. Hence, the results of part 1 and 2 will be shown and the different outputs of each method will be explained: mean-adjusted returns, market-adjusted returns and market model adjusted returns.

6.1 Daily Abnormal Returns

Table 6.1 presents the average abnormal returns (AAR) and cumulative average abnormal returns (CAAR) for additions during the period of 30 days before and 30 days after the CG scoring announcement (day 0), while table 6.2 displays the same results for the deletions. Figures 6.1 and 6.2 plot the CAAR for additions and deletions respectively. Moreover, both figures display the CAAR for the AD-30 to AD+30 period.

Panel A, panel B and panel C of tables 6.1 and 6.2, and figure 6.1 and 6.2 contains the results for the mean-adjusted returns, the market-adjusted returns and the market model adjusted returns methodologies.

Table 6.1 Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) for Additions during the Period of 30 Days before and 30 Days after the CG Scoring Announcement (Day 0)

Panel A: Mean-Adjusted Returns

Day	N	AAR	*t-statistics*	CAAR	*t-statistics*
-30	140	0.6024%	1.0077	0.6024%**	2.5484
-29	140	0.2843%	0.4755	0.8867%***	5.9470
-28	140	0.6688%	1.1187	1.5555%***	6.8659
-27	140	0.5678%	0.9498	2.1233%***	8.7631
-26	140	0.3545%	0.5930	2.4778%***	8.0980
-25	140	0.1556%	0.2603	2.6334%***	13.3836
-24	140	0.5845%	0.9777	3.2178%***	12.9644
-23	140	0.3950%	0.6608	3.6129%***	17.6686
-22	140	0.6895%	1.1533	4.3024%***	11.2607
-21	140	0.7975%	1.3340	5.0999%***	20.0616
-20	140	0.7891%	1.3200	5.8890%***	23.5096
-19	140	0.8532%	1.4272	6.7423%***	26.8678
-18	140	-0.7609%	-1.2727	5.9814%***	19.4105
-17	140	-0.4100%	-0.6857	5.5714%***	17.0280
-16	140	0.5500%	0.9200	6.1214%***	27.2033
-15	140	-0.0322%	-0.0538	6.0892%***	30.1754
-14	140	-0.2485%	-0.4156	5.8408%***	27.8594
-13	140	-1.0024%*	-1.6767	4.8384%***	29.3507
-12	140	0.7697%	1.2875	5.6081%***	20.8132
-11	140	0.4242%	0.7096	6.0324%***	28.9012
-10	140	-0.0163%	-0.0272	6.0161%***	20.1904
-9	140	0.3406%	0.5697	6.3567%***	30.7498
-8	140	0.0921%	0.1541	6.4488%***	26.1113
-7	140	0.2591%	0.4335	6.7080%***	25.2857
-6	140	-0.4250%	-0.7109	6.2830%***	24.7934
-5	140	-0.0071%	-0.0119	6.2758%***	29.1195
-4	140	0.5712%	0.9555	6.8471%***	31.9937
-3	140	0.1085%	0.1814	6.9555%***	30.3736
-2	140	-0.3506%	-0.5864	6.6050%***	27.2962
-1	140	-0.7196%	-1.2036	5.8854%***	26.3558
0	140	0.4348%	0.7274	6.3202%***	66.9274
1	140	2.0159%***	3.3720	8.3361%***	31.0907
2	140	-1.1531%*	-1.9287	7.1831%***	29.8319
3	140	-0.4760%	-0.7962	6.7071%***	37.9431
4	140	0.3877%	0.6485	7.0948%***	44.9343
5	140	0.2820%	0.4716	7.3768%***	36.4367
6	140	-0.1912%	-0.3198	7.1855%***	39.4175
7	140	0.2239%	0.3745	7.4094%***	33.9243
8	140	-0.2807%	-0.4695	7.1288%***	41.9601
9	140	-0.3786%	-0.6333	6.7501%***	30.4322
10	140	-0.1402%	-0.2345	6.6099%***	35.6227
11	140	-0.4736%	-0.7922	6.1364%***	18.2946
12	140	0.2623%	0.4387	6.3986%***	25.6491
13	140	-0.2707%	-0.4528	6.1279%***	30.8928
14	140	0.6358%	1.0634	6.7636%***	23.3372
15	140	0.1582%	0.2646	6.9219%***	30.4551
16	140	-0.9744%	-1.6299	5.9475%***	32.0465
17	140	0.4108%	0.6871	6.3583%***	27.7165
18	140	-0.1964%	-0.3286	6.1618%***	34.0582
19	140	-0.2097%	-0.3508	5.9521%***	38.1358
20	140	0.6654%	1.1131	6.6175%***	27.9879
21	140	-0.0654%	-0.1094	6.5522%***	29.6447
22	140	0.3172%	0.5305	6.8693%***	38.9383
23	140	0.0984%	0.1646	6.9677%***	51.8601
24	140	-0.2809%	-0.4699	6.6868%***	30.9879
25	140	-0.0225%	-0.0377	6.6642%***	45.9728
26	140	0.0817%	0.1366	6.7459%***	29.9811
27	140	0.5266%	0.8809	7.2725%***	33.4456
28	140	0.1442%	0.2412	7.4167%***	39.4155
29	140	-0.3831%	-0.6407	7.0337%***	29.3736
30	140	0.0705%	0.1179	7.1041%***	45.8669

Note: N is number of firms**.**

*** denotes statistically significant at 1% level.

** denotes statistically significant at 5% level.

* denotes statistically significant at 10% level.

Table 6.1 (Continued)

Panel B: Market-Adjusted Returns

Day	N	AAR	*t-statistics*	CAAR	*t-statistics*
-30	140	-0.0269%	-0.0646	-0.0269%	-0.1146
-29	140	-0.3699%	-0.8893	-0.3968%**	-2.3567
-28	140	-0.2086%	-0.5016	-0.6054%**	-2.6031
-27	140	-0.0227%	-0.0546	-0.6281%**	-2.6715
-26	140	0.5762%	1.3854	-0.0519%	-0.1717
-25	140	0.0070%	0.0169	-0.0449%	-0.2173
-24	140	0.7202%	1.7315	0.6753%***	2.6973
-23	140	-0.0547%	-0.1314	0.6206%***	3.2331
-22	140	0.1815%	0.4365	0.8021%**	2.0992
-21	140	0.5211%	1.2528	1.3232%***	5.2276
-20	140	0.3722%	0.8950	1.6955%***	6.3368
-19	140	0.9719%	2.3368	2.6674%***	10.5445
-18	140	0.2354%	0.5659	2.9027%***	9.4475
-17	140	-0.4642%	-1.1162	2.4385%***	7.5815
-16	140	0.0756%	0.1819	2.5141%***	11.1724
-15	140	-0.3975%	-0.9557	2.1167%***	10.0876
-14	140	-0.5875%	-1.4127	1.5291%***	6.2684
-13	140	-0.3455%	-0.8308	1.1836%***	6.3882
-12	140	-0.2363%	-0.5682	0.9473%***	3.5085
-11	140	0.3101%	0.7457	1.2574%***	5.7312
-10	140	0.0941%	0.2263	1.3516%***	4.5831
-9	140	0.6425%	1.5448	1.9941%***	8.6863
-8	140	0.4934%	1.1862	2.4874%***	9.9948
-7	140	-0.5888%	-1.4157	1.8986%***	7.0325
-6	140	0.0488%	0.1174	1.9474%***	8.7115
-5	140	0.5242%	1.2604	2.4716%***	11.4975
-4	140	-0.1959%	-0.4711	2.2757%***	11.4531
-3	140	0.2131%	0.5124	2.4888%***	10.6790
-2	140	-0.8280%**	-1.9908	1.6608%***	6.9903
-1	140	0.0935%	0.2248	1.7543%***	8.0542
0	140	0.6586%	1.5835	2.4129%***	24.6942
1	140	1.9829%***	4.7677	4.3958%***	15.1341
2	140	-0.4005%	-0.9630	3.9953%***	17.3596
3	140	-1.4280%***	-3.4335	2.5673%***	13.5252
4	140	0.2963%	0.7124	2.8635%***	18.0326
5	140	0.0312%	0.0749	2.8947%***	14.2999
6	140	-0.2819%	-0.6778	2.6128%***	13.9097
7	140	0.0415%	0.0999	2.6543%***	12.0670
8	140	0.2317%	0.5572	2.8861%***	17.1824
9	140	0.2295%	0.5518	3.1156%***	12.7716
10	140	-0.2165%	-0.5205	2.8991%***	14.7782
11	140	-0.1149%	-0.2763	2.7842%***	8.3950
12	140	-0.0624%	-0.1500	2.7218%***	11.3822
13	140	-0.3337%	-0.8024	2.3881%***	12.3218
14	140	0.6406%	1.5402	3.0286%***	10.4830
15	140	0.4908%	1.1800	3.5194%***	16.9232
16	140	-0.1031%	-0.2479	3.4163%***	19.6417
17	140	-0.0219%	-0.0526	3.3944%***	14.8152
18	140	0.0090%	0.0218	3.4034%***	19.3200
19	140	-0.1245%	-0.2993	3.2790%***	21.3986
20	140	0.2224%	0.5347	3.5013%***	15.0642
21	140	0.0908%	0.2184	3.5922%***	15.3633
22	140	0.2124%	0.5108	3.8046%***	23.0913
23	140	0.0725%	0.1743	3.8771%***	27.6863
24	140	-0.0185%	-0.0445	3.8586%***	20.0818
25	140	-0.0586%	-0.1408	3.8000%***	27.5564
26	140	0.0221%	0.0532	3.8222%***	16.7821
27	140	-0.0164%	-0.0394	3.8058%***	17.1549
28	140	0.3589%	0.8629	4.1646%***	24.5027
29	140	0.6072%	1.4600	4.7719%***	20.5239
30	140	0.0766%	0.1842	4.8485%***	34.1790

Note: N is number of firms**.**

*** denotes statistically significant at 1% level.

** denotes statistically significant at 5% level.

* denotes statistically significant at 10% level.

Table 6.1 (Continued)

Panel C: Market-Model-Adjusted Returns

Day	N	AAR	*t-statistics*	CAAR	*t-statistics*
-30	140	0.0953%	0.3043	0.0953%	0.4139
-29	140	-0.0595%	-0.1901	0.0358%	0.2229
-28	140	-0.0940%	-0.3002	-0.0582%	-0.2663
-27	140	0.1349%	0.4307	0.0766%	0.3261
-26	140	0.2106%	0.6725	0.2872%	0.9779
-25	140	0.0818%	0.2611	0.3690%*	1.8023
-24	140	0.4912%	1.5687	0.8602%***	3.4556
-23	140	-0.0095%	-0.0304	0.8507%***	4.6199
-22	140	0.1905%	0.6085	1.0412%***	2.7226
-21	140	0.5737%	1.8320	1.6149%***	6.3508
-20	140	0.1694%	0.5411	1.7843%***	7.1599
-19	140	0.9279%	2.9634	2.7122%***	10.7201
-18	140	-0.0133%	-0.0424	2.6990%***	8.8820
-17	140	-0.1763%	-0.5631	2.5227%***	8.0837
-16	140	0.0130%	0.0414	2.5356%***	11.1445
-15	140	-0.1633%	-0.5214	2.3723%***	11.4970
-14	140	-0.3629%	-1.1589	2.0095%***	8.8837
-13	140	-0.3866%	-1.2345	1.6229%***	9.4518
-12	140	-0.0008%	-0.0026	1.6221%***	6.0394
-11	140	0.3332%	1.0640	1.9553%***	9.3693
-10	140	-0.1433%	-0.4575	1.8120%***	6.1338
-9	140	0.3570%	1.1403	2.1691%***	10.4815
-8	140	0.1073%	0.3427	2.2764%***	9.1198
-7	140	-0.3519%	-1.1238	1.9245%***	7.1132
-6	140	-0.6488%	-2.0718	1.2757%***	5.6560
-5	140	0.2618%	0.8360	1.5375%***	7.0167
-4	140	0.1159%	0.3700	1.6534%***	8.2017
-3	140	0.1638%	0.5230	1.8171%***	8.1363
-2	140	-0.6032%	-1.9263	1.2140%***	5.2391
-1	140	-0.2909%	-0.9290	0.9231%***	4.2941
0	140	0.5079%	1.6219	1.4309%***	14.8398
1	140	1.7695%***	5.6510	3.2004%***	11.5881
2	140	-0.5834%*	-1.8631	2.6170%***	11.4184
3	140	-1.0480%***	-3.3469	1.5690%***	8.5868
4	140	0.1649%	0.5265	1.7339%***	10.9844
5	140	0.2354%	0.7516	1.9692%***	9.7423
6	140	-0.0535%	-0.1710	1.9157%***	10.5074
7	140	0.0597%	0.1906	1.9754%***	9.0331
8	140	0.1914%	0.6114	2.1668%***	13.4270
9	140	-0.2108%	-0.6732	1.9560%***	8.2760
10	140	-0.0587%	-0.1876	1.8973%***	9.9135
11	140	-0.3173%	-1.0135	1.5799%***	4.9284
12	140	-0.0447%	-0.1427	1.5352%***	6.6211
13	140	-0.4190%	-1.3382	1.1162%***	5.7481
14	140	0.4907%	1.5670	1.6069%***	5.5499
15	140	0.2268%	0.7244	1.8337%***	8.7109
16	140	-0.5719%	-1.8265	1.2618%***	6.7525
17	140	0.0834%	0.2665	1.3452%***	6.0017
18	140	0.0427%	0.1363	1.3879%***	7.7732
19	140	-0.1300%	-0.4152	1.2579%***	8.2536
20	140	0.1726%	0.5513	1.4305%***	6.2017
21	140	-0.0438%	-0.1398	1.3867%***	6.3480
22	140	0.2642%	0.8437	1.6509%***	10.3570
23	140	0.1351%	0.4313	1.7860%***	13.3330
24	140	-0.1491%	-0.4763	1.6368%***	8.6770
25	140	0.0361%	0.1154	1.6730%***	11.8852
26	140	0.0349%	0.1116	1.7079%***	7.6134
27	140	-0.0296%	-0.0947	1.6783%***	7.7414
28	140	0.0103%	0.0329	1.6886%***	9.6258
29	140	0.1141%	0.3644	1.8027%***	7.7346
30	140	-0.0431%	-0.1377	1.7596%***	11.7186

Note: N is number of firms**.**

*** denotes statistically significant at 1% level.

** denotes statistically significant at 5% level.

* denotes statistically significant at 10% level**.**

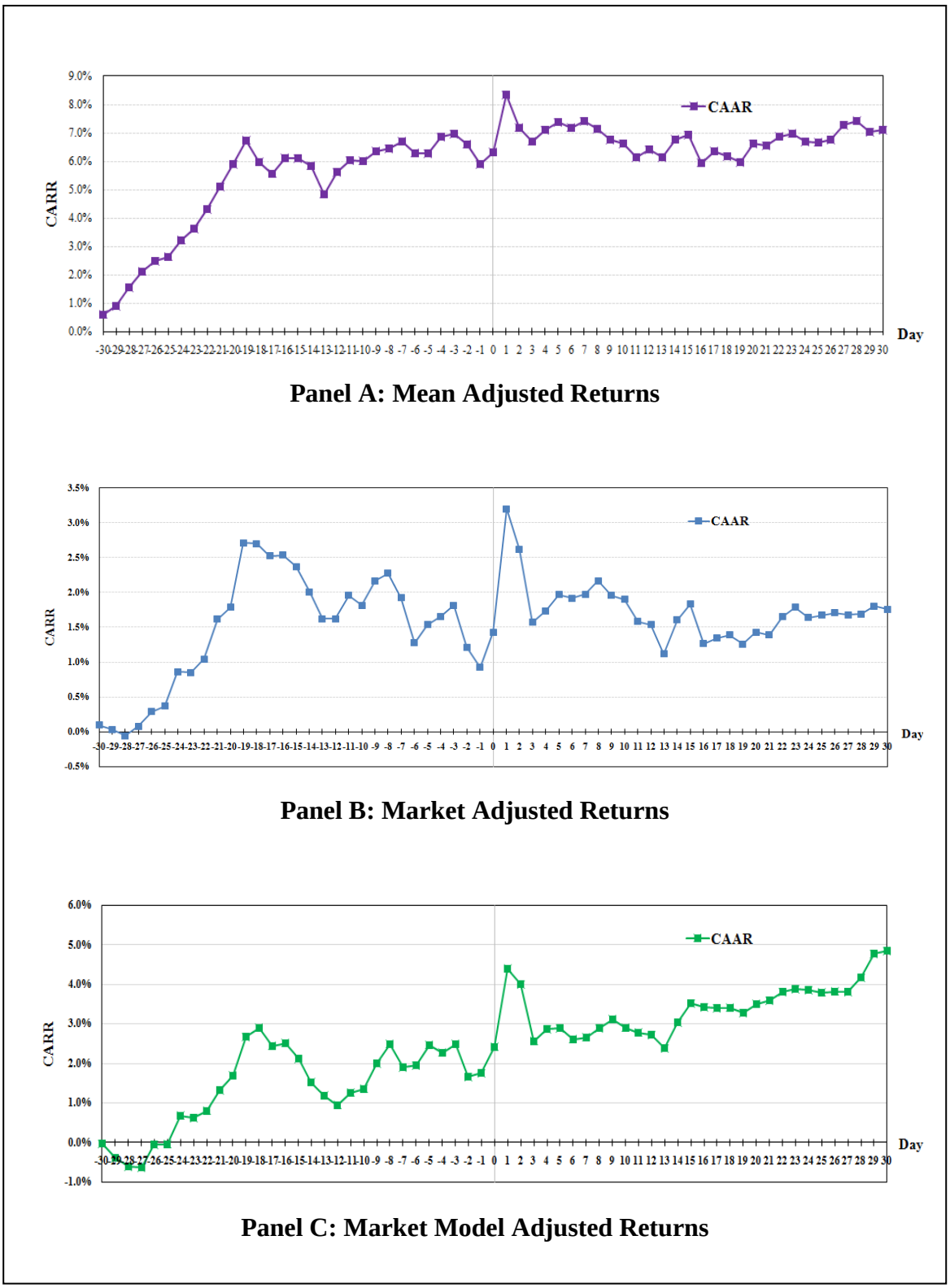

Figure 6.1 The Cumulative Average Abnormal Returns for Additions from AD-30 to AD+30

6.1.1 Daily Abnormal Returns: Addition Sample

According to Tables 6.1, as expected, the results for the addition samples from the 3 methods show the different from zero positive AAR and CAAR on the announcement day (day 0) and on the day immediately after the CG scoring announcement (day +1).

6.1.1.1 Mean-Adjusted Returns

The AAR, on the event day (day 0) AAR is 0.4348% with an insignificant cross-sectional t-statistic of 0.7274. On day+1, the AAR is 2.0159% with a significant cross-sectional t-statistic of 3.3720 (at 1% significance level).

The CAAR, on both day 0 and day+1 it is positive significantly different from zero. For day 0, the CAAR is 6.3202% with a significant cross-sectional t-statistic of 66.9274 (at 1% significance level). The CAAR on day+1 is 6.7071% with a cross-sectional t-statistic of 31.0907 (at 1% significance level). Panel A in figure 6.1 supports this evidence as it depicts a large positive CAAR on both day 0 and day+1.

6.1.1.2 Market-Adjusted Returns

The AAR on the event day (day 0) is 0.6586% with an insignificant cross-sectional t-statistic of 0.1156. On day+1, the AAR is 1.9829% with a significant cross-sectional t-statistic of 4.7677 (at 1% significance level).

The CAAR of both day 0 and day+1 is positive significantly different from zero. For day 0, the CAAR is 2.4129% with a significant cross-sectional t-statistic of 24.6942 (at 1% significance level). The CAAR on day+1 is 4.3958% with a cross-sectional t-statistic of 15.1341 (at 1% significance level). Panel B in figure 6.1 confirms this evidence, as it depicts a significant positive CAAR.

6.1.1.3 Market-Model-Adjusted Returns

The AAR, on the event day (day 0) AAR is 0.5079% with an insignificant cross-sectional t-statistic of 1.6219. On day+1, the AAR is 1.7695% with a significant cross-sectional t-statistic of 5.6510 (at 1% significance level).

The CAAR on both day 0 and day+1 is positive significantly different from zero. On day 0, the CAAR is 1.4309% with a significant cross-sectional t-statistic of 14.8398 (at 1% significance level). The CAAR on day+1 is 3.2004%

with a cross-sectional t-statistic of 11.5881 (at 1% significance level). This positive CAAR result is confirmed by Panel C in figure 6.1.

Regarding the finding of the AAR and CAAR for the 3 methods, all of the methods yielded the same results. Moreover, for the additions, the effects of CG scoring announcement on the stock market values did not follow this research's expectations. This paper expects that information about stock adding to CG scoring is good news. Thus, on an announcement day (day 0), there should be statistically positive abnormal returns. However, it is found that only the AAR or abnormal returns on day+1 are significantly positive, while the AAR or abnormal returns on day 0 are positive but insignificantly different from zero. Moreover, the CAAR of 3 methods yield the same results, and all are significantly positive different from zero. In addition, according to figure 6.1, before the announcement date this paper finds that on many days the market anomaly moved. This effect is assumed to be caused by non-public news.

With a major positive (more than 1%) daily abnormal return on day+1, it is possible to conclude that abnormal returns exist for the addition stocks to the CG scoring group. Unlike other strong and efficient markets, the market reaction to news in the Thai market may be lagged. For this reason, the AAR on day 0 for all 3 methods are positive but not significant. Observing the return from the long windows in the next part will suggest a better idea.

In summary, for the additions to the CG scoring group, the excess returns do not immediately react to the CG scoring news on the event day (day 0). The abnormal returns on day+1 are significant positive reacted to the news. However, the abnormal returns slightly die out after day+1. The findings of the additions indicate that the degree of market reaction to the good news is slightly strong but not rapid.

Table 6.2 Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) for Deletions during the Period of 30 Days before and 30 Days after the CG Scoring Announcement (Day 0)

Panel A : Mean Adjusted Returns

Day	N	AAR	*t-statistics*	CAAR	*t-statistics*
-30	98	3.7693%*	1.9092	1.1924%***	3.7243
-29	98	-1.2806%	-0.2803	1.0173%**	2.3650
-28	98	9.8350%	1.2145	1.7758%***	3.4953
-27	98	5.3904%	0.6166	2.1609%***	3.5754
-26	98	-2.6013%	0.0519	2.1933%***	3.2573
-25	98	3.8053%	0.4787	2.4923%***	3.3982
-24	98	-2.5560%	-1.4888	1.5625%*	1.9030
-23	98	7.7171%	1.5640	2.5393%***	2.7884
-22	98	4.0229%	-0.0016	2.5383%***	2.6938
-21	98	1.4069%	1.0909	3.2196%***	3.2600
-20	98	-2.3083%	0.6486	3.6246%***	3.5375
-19	98	-1.7086%	0.4141	3.8833%***	3.5548
-18	98	23.1215%	-0.2066	3.7542%***	3.2874
-17	98	-0.4507%	-0.8463	3.2257%***	2.7524
-16	98	-10.4327%	-1.0601	2.5636%**	2.0649
-15	98	3.3438%	0.4287	2.8314%**	2.2216
-14	98	4.7318%	0.0655	2.8723%**	2.1793
-13	98	2.0432%	-1.9046	1.6828%	1.2525
-12	98	-7.0689%	0.5073	1.9996%	1.4717
-11	98	0.0742%	1.3086	2.8169%**	2.0413
-10	98	-1.5033%	-0.7941	2.3209%	1.6516
-9	98	0.0770%	0.2351	2.4677%*	1.7231
-8	98	-0.9784%	-0.2628	2.3036%	1.5799
-7	98	-4.7757%	0.1398	2.3909%	1.6225
-6	98	-1.0047%	-0.1204	2.3157%	1.5545
-5	98	0.1033%	0.2968	2.5010%	1.6561
-4	98	0.6482%	0.5822	2.8646%*	1.8763
-3	98	1.1754%	-0.5161	2.5423%	1.6558
-2	98	1.6770%	0.0846	2.5952%*	1.6846
-1	98	-0.4507%	-0.2150	2.4609%	1.5939
0	98	-0.9784%	-1.4508	1.5548%	1.0036
1	98	-0.9812%***	-4.2968	-1.1287%	-0.7161
2	98	1.6546%	0.3331	-0.9206%	-0.5817
3	98	-0.9729%*	1.8414	0.2294%	0.1440
4	98	-0.4507%	1.3753	1.0883%	0.6780
5	98	-0.9756%	1.5714	2.0697%	1.2659
6	98	0.0742%	0.1191	2.1441%	1.3015
7	98	-0.9756%	0.2604	2.3067%	1.3678
8	98	-1.5089%	-0.4759	2.0095%	1.1779
9	98	0.6075%	-0.0023	2.0081%	1.1567
10	98	-1.5089%	-0.3083	1.8155%	1.0355
11	98	0.6075%	-0.5802	1.4532%	0.8196
12	98	-0.4507%	0.0771	1.5013%	0.8365
13	98	-0.4507%	-0.3644	1.2737%	0.6988
14	98	3.1673%	1.0478	1.9281%	1.0493
15	98	-3.0215%	0.6756	2.3500%	1.2599
16	98	-0.4507%	-0.0854	2.2967%	1.2156
17	98	-0.4507%	0.1795	2.4088%	1.2642
18	98	-0.9729%	-0.1927	2.2885%	1.1882
19	98	1.1078%	0.3137	2.4844%	1.2813
20	98	-2.0092%	-0.3952	2.2375%	1.1436
21	98	-0.9756%	0.8223	2.7511%	1.3900
22	98	-1.5089%	-0.5924	2.3811%	1.1980
23	98	-0.9840%	-0.4372	2.1081%	1.0481
24	98	-1.5260%	-0.0770	2.0600%	1.0180
25	98	-4.3079%	-1.0003	1.4352%	0.7048
26	98	-2.7235%	-0.7221	0.9843%	0.4811
27	98	-5.1574%	-0.2208	0.8464%	0.4066
28	98	7.0891%	0.1760	0.9563%	0.4546
29	98	-1.5743%	-0.0025	0.9547%	0.4481
30	98	1.2300%	0.0423	0.9811%	0.4590

Note: N is number of firms**.**

*** denotes statistically significant at 1% level.

** denotes statistically significant at 5% level.

* denotes statistically significant at 10% level.

Table 6.2 (Continued)

Panel B: Market-Adjusted Returns

Day	N	AAR	*t-statistics*	CAAR	*t-statistics*
-30	98	-0.1687%	-0.3629	-0.1687%	-0.5371
-29	98	-0.0174%	-0.0375	-0.1862%	-0.6237
-28	98	-0.1680%	-0.3614	-0.3542%	-1.2411
-27	98	-0.4933%	-1.0610	-0.8475%	-2.6188
-26	98	-0.0949%	0.2041	-0.9424%***	-3.4430
-25	98	0.2438%	0.5242	-0.6987%	-2.4012
-24	98	0.2786%	0.5993	-0.4200%	-1.2097
-23	98	0.6740%	1.4495	0.2539%	0.6375
-22	98	-0.4897%	1.0532	-0.2358%	-1.0631
-21	98	0.5933%	1.2760	0.3575%	1.2277
-20	98	-0.0350%	-0.0753	0.3225%	1.2577
-19	98	0.7613%	1.6372	1.0837%***	2.7996
-18	98	0.6786%	1.4594	1.7623%***	5.4864
-17	98	0.0798%	0.1717	1.8422%***	7.3019
-16	98	-0.2155%	-0.4635	1.6267%***	4.2757
-15	98	-0.7502%	-1.6134	0.8765%***	3.0739
-14	98	0.4585%	0.9860	1.3350%***	3.8373
-13	98	-0.2504%	-0.5385	1.0846%***	3.8821
-12	98	-0.6459%	-1.3892	0.4386%	2.1704
-11	98	-0.2741%	-0.5896	0.1645%	0.6859
-10	98	0.2382%	0.5122	0.4027%	1.4407
-9	98	-0.6859%	-1.4752	-0.2833%	-1.0297
-8	98	0.2628%	0.5651	-0.0205%	-0.0755
-7	98	-0.1303%	-0.2802	-0.1508%	-0.7012
-6	98	0.1810%	0.3894	0.0302%	0.1384
-5	98	0.0546%	0.1175	0.0849%	0.3410
-4	98	0.0937%	0.2016	0.1786%	0.8026
-3	98	0.0258%	0.0556	0.2044%	1.1582
-2	98	-0.2378%	-0.5114	-0.0334%	-0.2450
-1	98	0.3905%	0.8397	0.3571%***	3.2303
0	98	-0.9427%**	-2.0274	-0.5856%***	-4.4400
1	98	-2.6678%***	-5.7376	-3.2534%***	-11.1712
2	98	0.0622%	0.1337	-3.1912%***	-19.8875
3	98	0.4733%	1.0178	-2.7180%***	-14.8454
4	98	1.0277%**	2.2102	-1.6903%***	-8.0022
5	98	0.9262%**	1.9919	-0.7641%**	-2.5440
6	98	0.0383%	0.0824	-0.7258%***	-3.6162
7	98	-0.0780%	-0.1678	-0.8038%**	-2.2132
8	98	0.3057%	0.6576	-0.4980%**	-1.9800
9	98	0.5410%	1.1634	0.0429%	0.1340
10	98	-0.2397%	-0.5154	-0.1967%	-0.7827
11	98	-0.3452%	-0.7425	-0.5420%**	-2.1412
12	98	0.1502%	0.3230	-0.3918%	-1.4855
13	98	-0.2983%	-0.6416	-0.6901%**	-2.2148
14	98	0.2449%	0.5267	-0.4452%**	-2.0163
15	98	0.5987%	1.2876	0.1535%	0.4914
16	98	0.3667%	0.7887	0.5202%*	1.7741
17	98	-0.0462%	-0.0993	0.4740%*	1.9597
18	98	0.2122%	0.4564	0.6862%**	2.3186
19	98	0.3557%	0.7651	1.0420%***	4.5977
20	98	-0.2296%	-0.4938	0.8124%***	3.2966
21	98	0.9043%	1.9448	1.7167%***	5.8246
22	98	0.1030%	0.2215	1.8197%***	11.3720
23	98	-0.0925%	-0.1990	1.7271%***	5.6865
24	98	0.1462%	0.3144	1.8733%***	8.5616
25	98	-0.2519%	-0.5418	1.6214%***	7.1411
26	98	0.3504%	0.7536	1.9718%***	10.6946
27	98	-0.4248%	-0.9136	1.5470%***	4.1448
28	98	-0.0859%	-0.1848	1.4611%***	4.7916
29	98	0.3572%	0.7683	1.8183%***	5.3814
30	98	-0.0445%	-0.0957	1.7738%***	9.3475

Note: N is number of firms.

*** denotes statistically significant at 1% level.

** denotes statistically significant at 5% level.

* denotes statistically significant at 10% level.

Table 6.2 (Continued)

Panel C: Market Model Adjusted Returns

Day	N	AAR	*t-statistics*	CAAR	*t-statistics*
-30	98	0.3514%	0.9084	0.3514%	1.0926
-29	98	-0.0479%	-0.1237	0.3036%	0.7219
-28	98	0.1342%	0.3470	0.4378%	0.8561
-27	98	-0.1272%	-0.3287	0.3107%	0.5054
-26	98	-0.1778%	-0.4595	0.1329%	0.1818
-25	98	0.3498%	0.9042	0.4827%	0.6291
-24	98	-0.2001%	-0.5171	0.2827%	0.3440
-23	98	0.7428%*	1.9200	1.0255%	1.1927
-22	98	-0.3519%	-0.9095	0.6736%	0.7148
-21	98	0.6584%	1.7020	1.3321%	1.3401
-20	98	0.0468%	0.1210	1.3789%	1.3462
-19	98	0.5897%	1.5242	1.9685%*	1.8002
-18	98	0.4575%	1.1825	2.4260%**	2.1497
-17	98	-0.0378%	-0.0978	2.3882%**	2.0284
-16	98	-0.4468%	-1.1548	1.9414%	1.6069
-15	98	-0.3126%	-0.8081	1.6288%	1.3292
-14	98	0.3112%	0.8045	1.9400%	1.5563
-13	98	-0.5354%	-1.3839	1.4046%	1.1023
-12	98	-0.3423%	-0.8847	1.0624%	0.8170
-11	98	0.1482%	0.3832	1.2106%	0.9110
-10	98	-0.0963%	-0.2490	1.1143%	0.8278
-9	98	-0.4591%	-1.1866	0.6552%	0.4817
-8	98	0.0616%	0.1591	0.7168%	0.5186
-7	98	-0.0315%	-0.0815	0.6853%	0.4898
-6	98	0.0071%	0.0184	0.6924%	0.4914
-5	98	0.0795%	0.2054	0.7718%	0.5456
-4	98	0.2516%	0.6503	1.0234%	0.7215
-3	98	-0.1155%	-0.2987	0.9079%	0.6373
-2	98	-0.0931%	-0.2407	0.8148%	0.5608
-1	98	0.1579%	0.4082	0.9727%	0.6656
0	98	-0.9694%**	-2.5059	0.0032%	0.0022
1	98	-2.6773%***	-6.9204	-2.6740%*	-1.7985
2	98	0.1638%	0.4234	-2.5102%*	-1.6544
3	98	0.7243%	1.8723	-1.7859%	-1.1671
4	98	0.9667%**	2.4988	-0.8192%	-0.5213
5	98	0.9994%***	2.5832	0.1801%	0.1132
6	98	0.0897%	0.2318	0.2698%	0.1663
7	98	0.0273%	0.0706	0.2971%	0.1810
8	98	0.1029%	0.2660	0.4000%	0.2409
9	98	0.3055%	0.7896	0.7055%	0.4196
10	98	-0.1846%	-0.4771	0.5209%	0.3045
11	98	-0.3471%	-0.8971	0.1739%	0.1007
12	98	0.0717%	0.1854	0.2456%	0.1400
13	98	-0.2985%	-0.7716	-0.0529%	-0.0297
14	98	0.3943%	1.0193	0.3415%	0.1902
15	98	0.5265%	1.3608	0.8679%	0.4774
16	98	0.1745%	0.4511	1.0425%	0.5690
17	98	0.0195%	0.0504	1.0620%	0.5747
18	98	0.1323%	0.3419	1.1942%	0.6381
19	98	0.3152%	0.8148	1.5094%	0.8038
20	98	-0.2831%	-0.7318	1.2264%	0.6447
21	98	0.7723%**	1.9964	1.9987%	1.0441
22	98	-0.0695%	-0.1797	1.9292%	1.0009
23	98	-0.1256%	-0.3248	1.8035%	0.9315
24	98	0.1154%	0.2984	1.9190%	0.9731
25	98	-0.3480%	-0.8995	1.5710%	0.7876
26	98	0.0778%	0.2011	1.6488%	0.8153
27	98	-0.3388%	-0.8758	1.3099%	0.6452
28	98	-0.0744%	-0.1924	1.2355%	0.6085
29	98	0.2241%	0.5793	1.4596%	0.7189
30	98	-0.0419%	-0.1082	1.4178%	0.6983

Note: N is number of firms.

*** denotes statistically significant at 1% level.

** denotes statistically significant at 5% level.

* denotes statistically significant at 10% level.

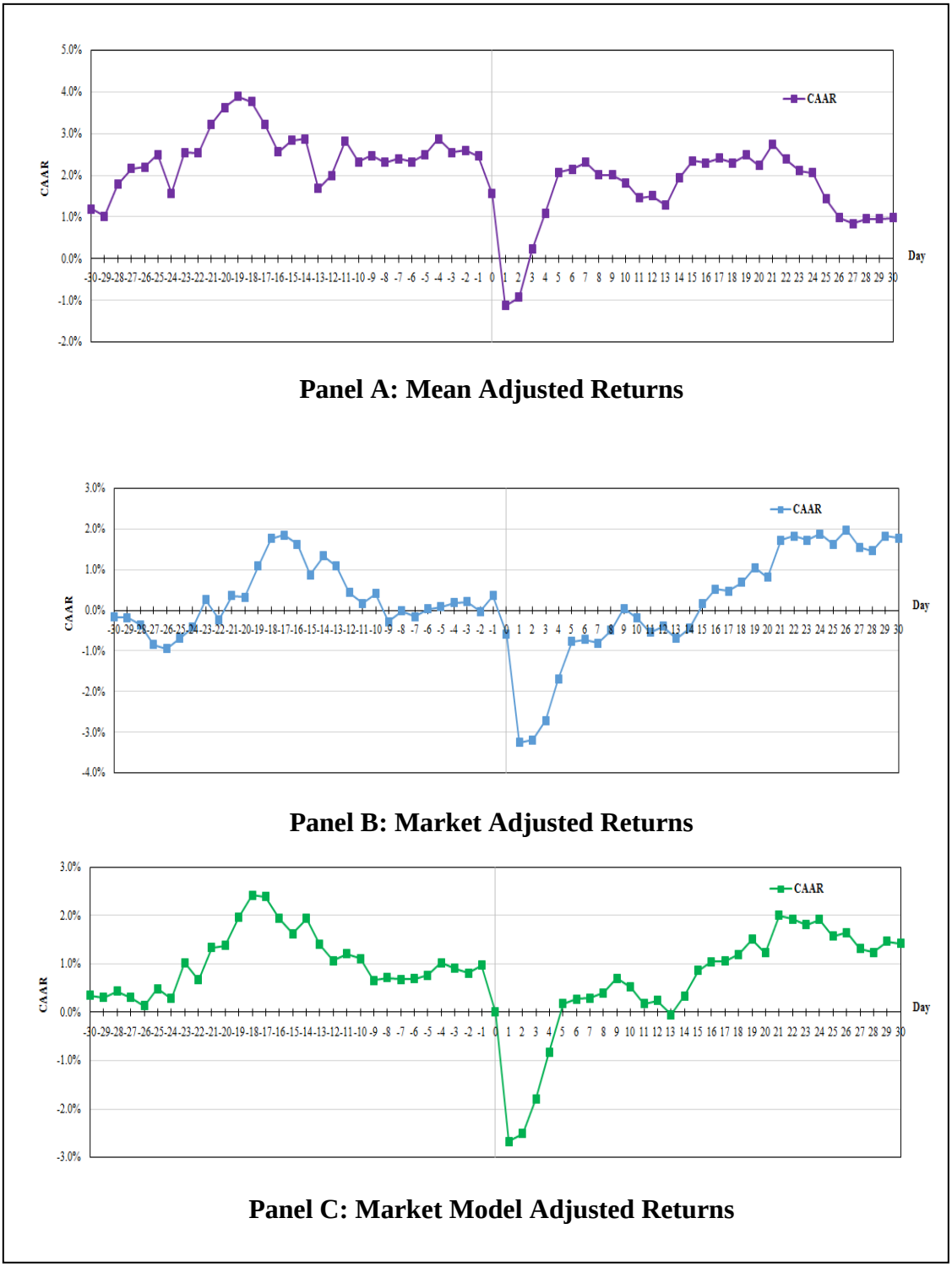

Figure 6.2 The Cumulative Average Abnormal Returns for Deletions from AD-30 to AD+30

6.1.2 Daily Abnormal Returns: Deletion Sample

According to Tables 6.2, as expected, the results for the deletion samples from the 3 methods show the difference from zero negative AAR and CAAR on the announcement day (day 0) and on the day immediately after the CG scoring announcement (day +1).

6.1.2.1 Mean-Adjusted Returns

Most days have negative AAR and CAAR and are insignificantly different from zero.

6.1.2.2 Market-Adjusted Returns

The AAR on the event day (day 0) is -0.9427% with a significant cross-sectional t-statistic of -2.0274 (at 1% significance level). On day+1, AAR is -2.6678% with a significant cross-sectional t-statistic of -5.7376 (at 1% significance level).

The CAAR on the event day (day 0) is -0.5856% with an insignificant cross-sectional t-statistic. The CAAR on day+1, day+2 and day+3 is -3.2534%, -3.1912% and -2.7180%. All, moreover, are at 1% significance level. Panel A in figure 6.2 supports this evidence as it depicts a large negative CAAR on both day 0, day+1, day+2 and day+3.

6.1.2.3 Market-Model-Adjusted Returns

The AAR on the event day (day 0) is -0.9694% with a significant cross-sectional t-statistic of -2.5059 (at 1% significance level). On day+1, the AAR is -2.6773% with a significant cross-sectional t-statistic of -6.9204 (at 1% significance level).

The CAAR, on the event day (day 0) CAAR is 0.0022 with an insignificant cross-sectional t-statistic. The CAAR on day+1, is -2.6740 with a significant cross-sectional t-statistic of -1.7985 (at 10% significance level). This negative CAAR result is confirmed by Panel C in figure 6.2.

Regarding to the finding of the AAR and CAAR for the 3 methods mean-adjusted returns, market-adjusted returns and market-model-adjusted returns each method yields different results. For the deletion, only the market-adjusted returns and market model adjusted methodology could detect negative abnormal returns and are significantly different from zero. On the other hand, the mean-adjusted returns method shows the same pattern but is insignificant. The negative abnormal returns,

which are significantly different from zero, are found on both the announcement day (day 0) and the day immediately after the CG scoring announcement (day+1). Based on figure 6.2, on pre announcement window the leakage of information seems to take place because this research finds that on many days the market anomaly moves.

With a significant negative (more than 1%) daily abnormal return on day+1, and a small negative (less than 1%) daily abnormal return, it is possible to conclude that abnormal returns early exist for the deletion case. In addition, the announcement for the deletion firms from CG scoring group is bad news for market players. Therefore, the market players immediately react negatively.

6.2 Long Window Statistics for Daily Abnormal Returns

For the long window analysis, this paper captures the window during a period of 10 days before and 10 days after the CG scoring announcement (day 0). The findings for the long window statistics are used to confirm whether the abnormal returns change temporary or permanent.

Table 6.3 presents the cumulative average abnormal returns (CAAR) for the special window pre-announcement day (pre AD), run-up, post-AD permanent and total permanent for additions while table 6.4 displays the same results for the deletions. Figures 6.3 and 6.4 plot the CAAR for additions and deletions respectively.

Panel A, panel B and panel C of tables 6.3 and 6.4, and figure 6.3 and 6.4 contain the results for the mean-adjusted returns, the market-adjusted returns and the market model adjusted returns methodologies.

Table 6.3 Long Window Statistics for Daily Abnormal Returns for firms added to CG Scoring

Specific Event Window	**Event Days**	**N**	**CAAR**	***t-statistics***
Panel A: Mean-Adjusted Abnormal Returns				
Pre AD	AD-10, AD	140	0.2879%**	2.2573
Run-up	AD, AD+1	140	2.4507%***	10.6026
Post AD permanent	AD+1, AD+10	140	0.2897%	1.6035
Total permanent	AD, AD+10	140	0.7245%***	4.0103
Panel B: Market-Adjusted Abnormal Returns				
Pre AD	AD-10, AD	140	1.1554%***	8.6050
Run-up	AD, AD+1	140	2.6415%***	10.6112
Post AD permanent	AD+1, AD+10	140	0.4862%**	2.5215
Total permanent	AD, AD+10	140	1.1448%***	5.9367
Panel C: Market Model Adjusted Abnormal Returns				
Pre AD	AD-10, AD	140	0.9180%***	7.0746
Run-up	AD, AD+1	140	2.2774%***	9.6069
Post AD permanent	AD+1, AD+10	140	0.4663%**	2.4903
Total permanent	AD, AD+10	140	0.9742%***	5.2024

Note: N is number of firms**.**

t-statistics test whether the CAAR is difference from zero.

*** denotes statistically significant at 1% level.

** denotes statistically significant at 5% level.

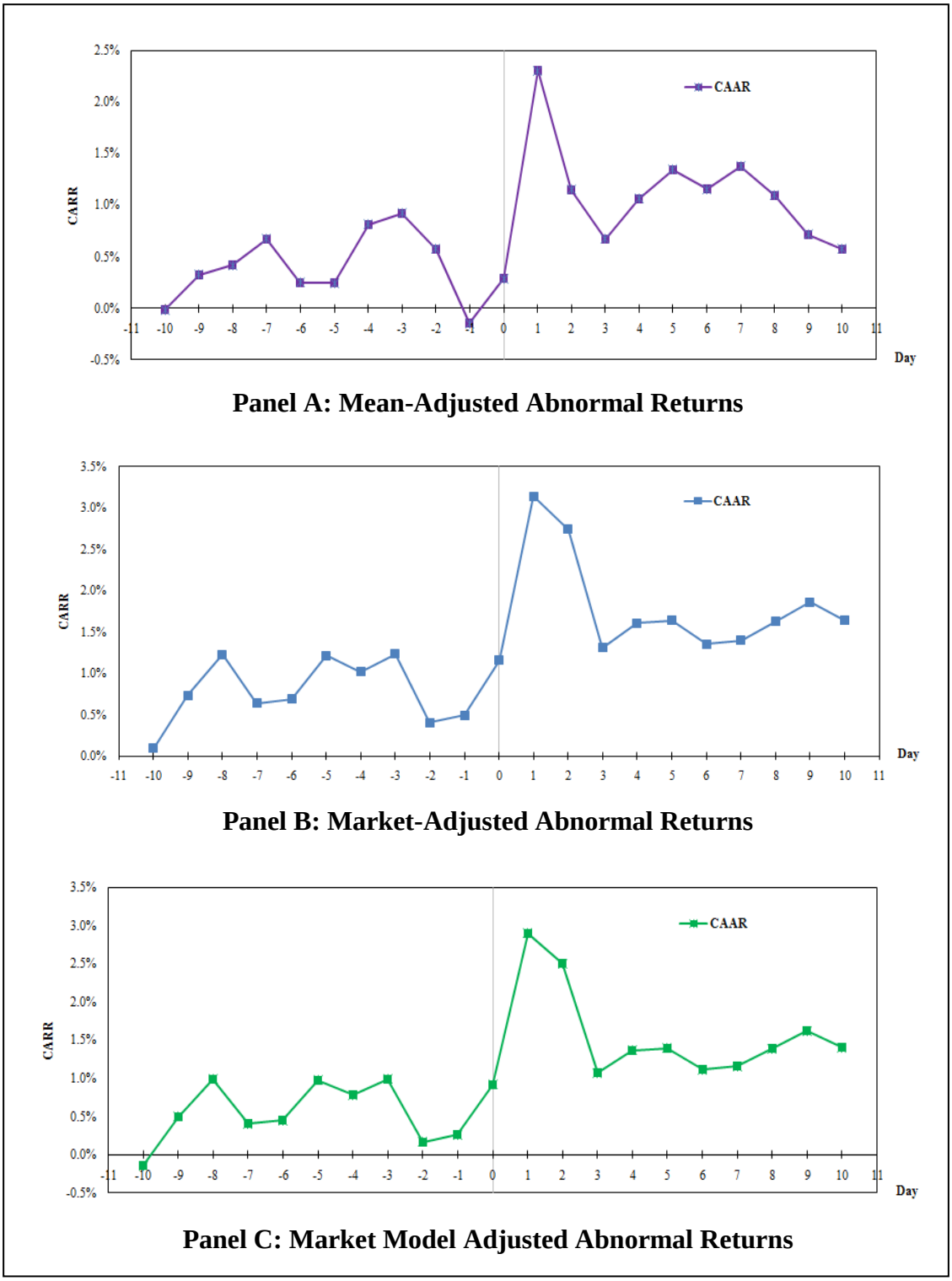

Figure 6.3 The Cumulative Average Abnormal Returns for Additions from AD-10 to AD+10

6.2.1 Long Window Statistics for Daily Abnormal Returns: Additions

According to table 6.3, the evidences for the CAAR calculate using the 3 measurement methods in pre-AD, run-up, post-AD, and total permanent window is consistent.

6.2.1.1 Mean-Adjusted Returns

In the pre-AD window (AD-10, AD), the CAAR shows a significant small positive abnormal returns at 0.2879% with a cross-sectional t-statistic of 2.2573 (at 5% significance level). Based on the early prediction in table 6.1, this result indicates anticipation of non-public news because there is a small positive abnormal return in the pre-AD window. The interpretation of this unexpected evidence is that the stocks being added are slightly over-performing the market before the AD. This anomaly pattern, thus, is assumed to be caused by other non-public news.

In the run-up window (AD, AD+1), the CAAR shows statistically significant positive at 2.4507% with a cross-sectional t-statistic of 10.6026 (at 1% significance level). This window also reflects the market players' reaction to the CG scoring announcement. Speculators that anticipate in the Thai stock market will adjust their portfolios to the AD and on average will gain 2.4507% from purchasing the stock adding to the CG scoring group. The positive abnormal returns in the run-up window are consistent with both the price-pressure hypothesis (PPH) and the downward-sloping demand curve hypothesis (DSDC). The plot in figure 6.3 panel A shows the sharp move of positive abnormal returns during the run-up window.

In the post-AD permanent window (AD+1, AD+10), the CAAR shows a small positive abnormal returns at 0.4862% with a cross-sectional t-statistic of 2.5215 (at 1% significance level). These small positive excess returns in the post-AD permanent window are nearly at the same price level in the pre-AD window.

In a total permanent window (AD, AD+10), the CAAR shows a small positive abnormal returns at 1.1448% with a cross-sectional t-statistic of 5.9367 (at 1% significance level). Compare to the results in the pre-AD window, this small positive price level in the total permanent window (AD, AD+10) is reversed nearly to the equilibrium level.

6.2.1.2 Market-Adjusted Returns

Except for the findings in the post-AD permanent window (AD+1, AD+10), the rest results for the pre-AD, run-up, post-AD, and the total permanent window, the results from the market-adjusted returns (Table 6.3 Panel B) for the additions, are consistent with the results from the mean-adjusted returns (Table 6.3 Panel A).

In the pre-AD window (AD-10, AD), the CAAR shows a significant small positive abnormal returns at 1.1154% with a cross-sectional t-statistic of 8.6050 (at 1% significance level).

In the run-up window (AD, AD+1), the CAAR shows statistically significant positive at 2.6415% with a cross-sectional t-statistic of 10.6112 (at 1% significance level).

In the post-AD permanent window (AD+1, AD+10), the CAAR shows a small statistically significant positive at 0.4862% with a cross-sectional t-statistic of 2.5215 (at 1% significance level).

In the total permanent window (AD, AD+10), the CAAR shows a small positive abnormal returns at 0.7245% with a cross-sectional t-statistic of 4.0103 (at 1% significance level). Compare to the results in the pre-AD window, this small positive price level in the total permanent window (AD, AD+10) is reversed close to the pre-announcement price level.

The strong evidence presents that stock price converges back to the pre-AD price level instead of staying at the new equilibrium level. Therefore, the CAAR is less positive in the post-announcement window because the price reversal nearly offsets the abnormal returns. This is evidence supporting the price-pressure hypothesis (PPH).

6.2.1.3 Market Model Adjusted Returns

The results from the market model adjusted returns for the additions (Table 6.3 Panel C) are consistent with the results from the market-adjusted returns (Table 6.3 Panel B).

In the Pre-AD window (AD-10, AD), the CAAR shows a significant small positive abnormal returns at 0.9180% with a cross-sectional t-statistic of 7.0746 (at 1% significance level). As stated earlier, the statistic significant positive abnormal

returns are not expected to be found in this window. This evidence shows that there is a leakage of information taken into place.

In the run-up window (AD, AD+1), the CAAR shows statistically significant positive at 2.2774% with a cross-sectional t-statistic of 9.6069 (at 1% significance level). This evidence follows the expectation. Market players that anticipate in the Thai stock market will adjust their portfolios on AD and on average will gain 2.2774% from purchasing addition stocks.

In the post-AD permanent window (AD+1, AD+10), the CAAR shows a small statistically significant positive at 0.4862% with a cross-sectional t-statistic of 2.5215 (at 1% significance level).

In the total permanent window (AD, AD+10), the CAAR shows a small positive abnormal returns at 0.9742% with a cross-sectional t-statistic of 5.2024 (at 1% significance level). This evidence shows that a small positive price level in the total permanent window (AD, AD+10) converges back to the pre announcement price level. Figure 6.3 presents the plot that clearly supports the conclusion.

In summary, this paper finds that market players positively react to firms' added to CG scoring. The price level sharply moves from the pre-AD price level to the new equilibrium level. However, the market reaction is just temporary because after day +1 (AD+1) the price level does not stay at that new equilibrium level permanently. Therefore, this finding of addition is consistent with the price-pressure hypothesis (PPH).

6.2.2 Long Window Statistics for Daily Abnormal Returns: Deletions

According to table 6.4, the evidences of the CAAR calculate using 3 measurement methods in the pre-AD, run-up, post AD, and the total permanent window is not consistent.

Table 6.4 Long Window Statistics for Daily Abnormal Returns for firms deleted from CG Scoring

Panel A: Mean-Adjusted Abnormal Returns				
Specific Event Window	**Event Days**	**N**	**CAAR**	***t-statistics***
Pre AD	AD-10, AD	98	-1.2620%	-0.8146
Run-up	AD, AD+1	98	-1.9596%	-1.2433
Post AD permanent	AD+1, AD+10	98	-5.0375%***	-2.8730
Total permanent	AD, AD+10	98	-6.0158%***	-3.4310

Table 6.4 (Continued)

Panel B: Market-Adjusted Abnormal Returns				
Specific Event Window	**Event Days**	**N**	**CAAR**	***t-statistics***
Pre AD	AD-10, AD	98	-0.7500%**	-5.6872
Run-up	AD, AD+1	98	-3.6105%***	-12.3973
Post AD permanent	AD+1, AD+10	98	0.3888%	1.5469
Total permanent	AD, AD+10	98	-0.5538%**	-2.2033
Panel C: Market Model Adjusted Abnormal Returns				
Pre AD	AD-10, AD	98	-1.2074%	-0.8199
Run-up	AD, AD+1	98	-3.6467%**	-2.4527
Post AD permanent	AD+1, AD+10	98	-0.5177%	0.3026
Total permanent	AD, AD+10	98	-0.4518%	-0.2640

Note: N is number of firms**.**

t-statistics test whether the CAAR is difference from zero.

*** denotes statistically significant at 1% level.

** denotes statistically significant at 5% level.

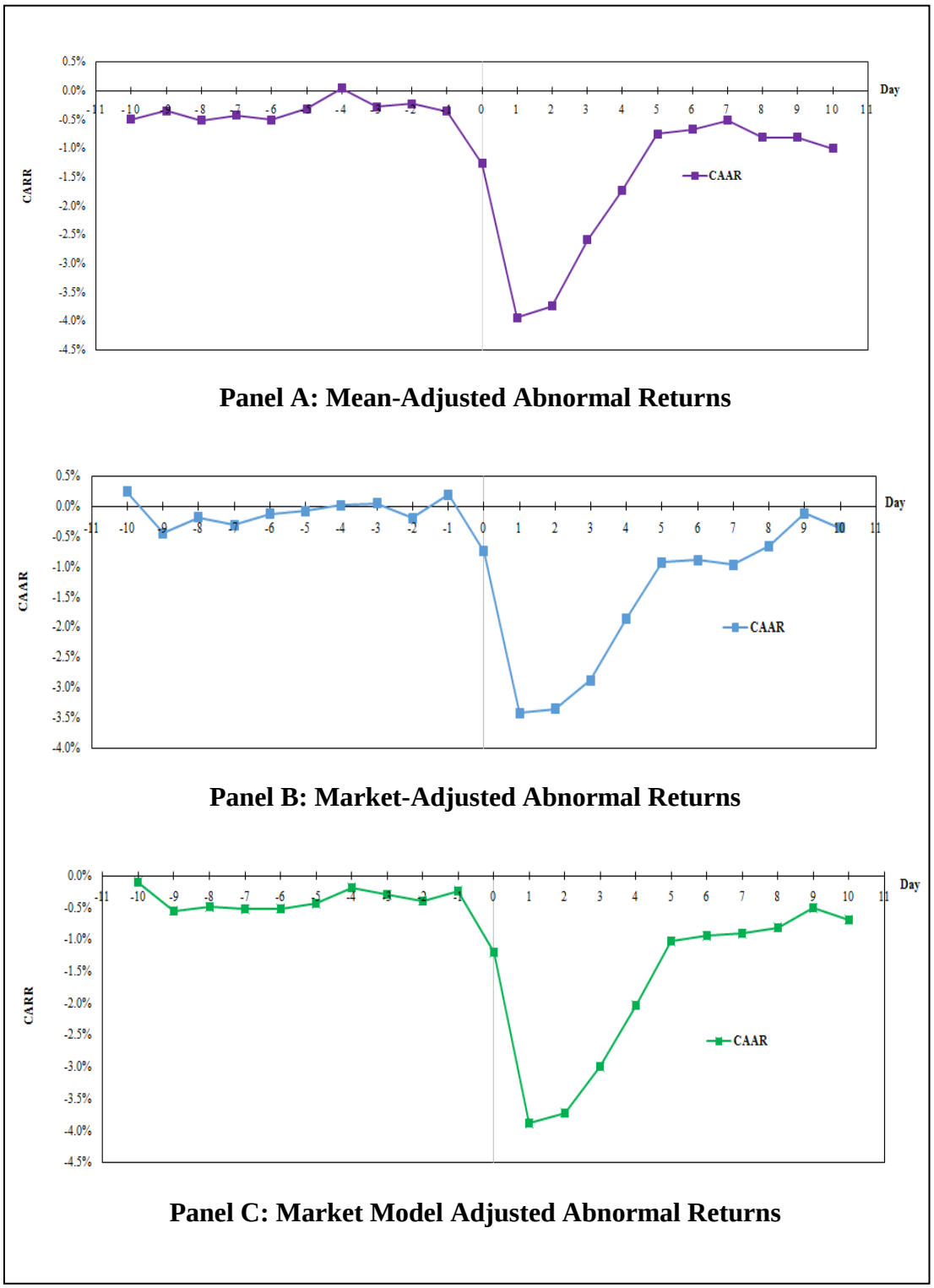

Figure 6.4 The Cumulative Average Abnormal Returns for Deletions from AD-10 to AD+10

6.2.2.1 Mean-Adjusted Returns

In the pre-AD window (AD-10, AD), the CAAR shows statistic insignificant negative abnormal returns at -1.2620%. Based on the early prediction in table 6.2, this result indicates non-anticipation of the news because the abnormal return is not significantly difference from zero.

In the run-up window (AD, AD+1), the CAAR shows statistic insignificant negative abnormal returns at -1.9596%.

In the post-AD permanent window (AD+1, AD+10), the CAAR shows statistically significant negative at -5.0375% with a cross-sectional t-statistic of -2.8730 (at 1% significance level).

In the total permanent window (AD, AD+10), the CAAR shows negative abnormal returns at -6.0158% with a cross-sectional t-statistic of -3.4310 (at 1% significance level).

6.2.2.2 Market-Adjusted Returns

In the pre-AD window (AD-10, AD), the CAAR has negative abnormal returns at -0.7500% with a cross-sectional t-statistic of -5.6872 (at 5% significance level). The result of the negative abnormal returns statistic different from zero indicates leakage of information taking place in the pre-AD window.

In the run-up window (AD, AD+1), as with the results calculating from market-adjusted returns, the negatives exist with a larger number than in the pre-AD. The CAAR in the run-up windows presents negative abnormal returns at -3.6467% with a cross-sectional t-statistic of -12.3973 (at 1% significance level). This indicates that the deleted stocks from the CG scoring are not in demand for a long time and they underperformed the market.

In the post-AD permanent window (AD+1, AD+10), the CAAR shows positive abnormal returns at 0.3888% but is not significantly different from zero.

In the total permanent window (AD, AD+10), the CAAR shows a small negative abnormal returns of -0.5538% with a cross-sectional t-statistic of -2.2033 (at 5% significance level). This evidence shows that a small negative price level in the total permanent window (AD, AD+10) converges back to the pre announcement price level. Figure 6.4 presents the plot that clearly supports the conclusion.

6.2.2.3 Market Model Adjusted Returns

In the pre-AD window (AD-10, AD), the CAAR shows statistic insignificant negative abnormal returns at -1.2074%.

In the run-up window (AD, AD+1), the negatives exist with a larger number than in the pre-AD. Figure 6.4 presents the plot that clearly supports evidence of this large negative number. Moreover, the CAAR in the run-up windows presents negative abnormal returns at -3.6467% with a cross-sectional t-statistic of -2.4527 (at 5% significance level).

In the post-AD permanent window (AD+1, AD+10) and total permanent window (AD, AD+10), no leakage of information seem to take place, since the CAAR is insignificant.

In summary, for the deletions from the CG scoring, this paper finds that the results from the 3 measurement methods mean-adjusted returns, market-adjusted returns, and market model adjusted returns, are not consistent. With the evidence observed, the market-adjusted returns method seems to detect abnormal returns better than the other 2 methods. This paper finds evidence that market players temporarily react to CG scoring announcement. However, a small negative price level in the total permanent window (AD, AD+10) converges back to the pre announcement price level. This evidence supports the price-pressure effect hypothesis (PPH). Figure 6.4 presents the plot that clearly supports the PPH conclusion.

6.3 Implications for Market Efficiency

In order to examine the information content of the CG rating announcement and market reaction in the Thai capital market, this research paper also takes into account the market efficiency theory. The reason for this is that the market efficiency theory is used to explain the results concerning how the stock market or speculator reacts to CG rating announcement event. The stock adding (deleting) to the CG rating group could imply as good (bad) news.

Harris and Gural (1986), furthermore, indicate in their work that the efficient market hypothesis (EMH) predicts that stock prices reflect all publicly available information. In addition, the buying or selling of a large number of stocks will not

have an impact on prices. The contrary to EMH, PPH and DSDC predicts that a large share purchase (sell) will cause the price to increase (decrease) even if no new information is associated with the transaction.

Lynch and Mendenhall (1997) indicate that significant abnormal returns following the announcement date are inconsistent with the semi-strong form market efficiency. They report significantly positive (negative) abnormal returns from run-up window for additions (deletions). This means that it would have been possible for investors, using only publicly available information, to construct trading rules that earned economically significant abnormal returns.

Like the study of Lynch and Mendenhall (1997), this research also finds significantly positive (negative) abnormal returns from the run-up window for additions (deletions), which is a violation of the EHM. Speculators can construct abnormal returns after the announcement date when the news is already announced. This violates the semi-strong form market efficiency hypothesis.

Also, for the additions, the excess returns do not immediately reacted to the CG scoring news on the event day (day 0) but a strong reaction could be observed on day +1 for additions (deletions). This seems to violate the strong form market efficiency hypothesis.

6.4 Power of the Measurement Method

As stated previously, in order to investigate whether abnormal returns can result from CG scoring announcement in the Thai capital market, this research uses 3 measurement methods mean-adjusted returns, market-adjusted returns, and market model adjusted returns analyzing the results. By testing, this study finds that the results from those 3 methods are not consistent especially for deletions.

For the additions, the 3 methods yield the same results for the day after the announcement day (day+1). Furthermore, on the announcement day (day 0) only 2 methods market-adjusted returns and market model adjusted returns could detect statistically significant positive abnormal returns. The mean-adjusted returns detect positive abnormal returns but insignificant difference from zero.

By contrast, for the deletions, the results from the 3 measurement methodologies are obviously different. The market-adjusted returns are more powerful to detect statistically different from zero negative abnormal returns in the run-up window (AD, AD+1) and total permanent (AD, AD+10).

The finding for the measurement method power in this paper is consistent with previous research, for example, that of Brown and Warner (1980), Edmister et al. (1994), and Lynch and Mendenhall (1997).

In the papers of Edmister et al. (1994) and Lynch and Mendenhall (1997), they summarize that the market model coefficient estimates were biased because of the selection criteria effect.

Moreover, by adjusting for the estimation period from 872 to 673 days prior to announcement day, Lynch and Mendenhall (1997), who use both the market-adjusted returns and market model adjusted returns method in their research, conclude that the results obtained by using the market model adjusted returns are very similar to the market-adjusted return methodology.

Furthermore, Brown and Warner (1980, 1985) indicate that the statistical power in detecting abnormal returns is not reduced if excess returns are used instead of the abnormal returns calculated from the market model adjusted returns method, and that the differences of two methodologies the market-adjusted returns and market model adjusted returns are quite small. Moreover, they also suggest that simple statistic models such as the mean-adjusted returns method often yield comparable results with the more sophisticated models such as market-adjusted returns and market model adjusted returns.

However, this research findings seem to be contradicted to the results for the mean-adjusted returns power stating in the paper of Brown and Warner (1980, 1985). This research finds that the power of mean-adjusted returns is similar to the 2 other models for only the case of additions in the short window study.

With these ambiguous results, it is quite difficult to conclude which measurement methods are suitable for conducting an event study. Therefore, in order to conduct an event study researchers have to more carefully take into account the event characteristics, event testing window (short or long window) sample characteristic, and the systematic risk of each sample stock.

6.5 The Determinants of Market Reactions to CG Scoring Announcement

According to the result of the power of measurement method in the previous section, this study shows evidence that the market-adjusted returns method is more powerful in detecting statistically significant different from zero than the mean-adjusted returns or the market model adjusted returns. Therefore, this section employed the CAAR, which is calculated using the market-adjusted returns method.

In addition, the study in this section 6.5 conducts the regression analysis to examine the relationship between the dependent variable CAAR (-1,1) and the control variables: firm performance (return on assets: ROA), firm size (total assets: TA), firm leverage (total debt to total equity: DE), and firm value (economic value added: EVA).

6.5.1 Descriptive Statistics

Table 6.5 in panel A presents the CAAR for the special window: (-30,-1), (-1,0), (-1,1), (-2,2), and (1,30) for firms adding to CG scoring, while Table 6.5 in panel B displays the same results for firms deleting from CG scoring.

Table 6.5 Descriptive Statistics

Panel A: Cumulative Average Abnormal Returns (CAAR) for Additions					
CAAR Window	**N**	**Mean**	**1st Quartile**	**Median**	**3rd Quartile**
[-30,-1]	140	1.7543%*** (9.0372)	-15.7470%	-1.9811%	1.2374%
[-1,0]	140	0.7521%*** (5.6009)	-2.2341%	0.6455%	1.1395%
[-1,1]	140	2.7350%*** (10.9868)	-1.1853%	2.2595%	2.9567%
[-2,2]	140	1.5065%*** (6.8619)	-3.4129%	1.0720%	2.2767%
[1,30]	140	2.4356%*** (13.2996)	-10.1434%	1.2152%	3.4099%

Table 6.5 (Continued)

Panel B: Cumulative Average Abnormal Returns (CAAR) for Deletions					
CAAR Window	**N**	**Mean**	**1st Quartile**	**Median**	**3rd Quartile**
[-30,-1]	98	0.3571%*** (3.2303)	-11.5747%	-1.8165%	2.6097%
[-1,0]	98	-0.1843% (-1.3975)	-24.1177%	-3.7610%	4.4802%
[-1,1]	98	-3.2200%*** (-11.0566)	-7.6158%	-2.4551%	-1.7595%
[-2,2]	98	-3.3957%*** (-21.1616)	-7.9479%	-2.8923%	-1.9985%
[1,30]	98	2.5371%*** (12.4333)	-10.1694%	1.6371%	3.8131%

Note: This table provides descriptive statistics for the sample firms added (deleted) to CG scoring. Panel A reports the mean, 1st quartile, median, and 3rd quartile of the CAAR for the firms added to CG scoring, while panel B describes the same results for the deleting firms. N is the number of sample firms. The number in parenthesis is the t-statistics testing whether the mean of the CAAR is different from zero. The symbol *** denotes statistically significant at 1% level.

Panel A of Table 6.5 shows the CAAR for the firms added to the CG scoring. The CAAR for 30-day window (-30, -1) after the announcement day (day 0) shows statistically significant positive of 1.7543% with cross-sectional t-statistic of 9.0372 (at 1% significance level). Moreover, the CAAR for 3-day window (-1, 1) is significant of 2.7350%. However, the CAAR in wider windows, (-2, 2) and (1, 30) is significantly less positive. As mentioned in section 6.2.1 of this chapter, market players positively react to firms' added to the CG scoring. The price level sharply moves from the pre announcement day (-30, -1) price level to the new equilibrium level. However, the market reaction is just temporary because after day +1 (1, 30) the

price level does not stay at that new equilibrium level permanently. Therefore, this finding of addition is consistent with the price-pressure hypothesis (PPH).

Panel B of Table 6.5 shows the CAAR for the firms deleted from CG scoring. The event windows for the CAAR around the announcement day (day 0), which is (-1, 1) and (-2, 2), show statistically significant negative abnormal returns of -3.2200% (at 1% significance level) and -3.3957% (at 1% significance level). In the long window (1, 30), however, the CAAR shows statistically significant positive abnormal returns of 2.4356% (at 1% significance level). This evidence shows that a negative price level converges back to the pre-announcement price level. This result could imply that market players temporarily react to CG scoring announcements. As with the results of additions, the evidence of deletions supports the price-pressure effect hypothesis (PPH).

6.5.2 Regression Analysis

The evidences of abnormal returns and event study testing on section 6.1 and 6.2 of this chapter do not control for other variables, which might be described the market reaction to CG scoring announcement. Hence, this paper applies a regression model to investigate the factors explaining the market reaction to the CG scoring announcement. This study, moreover, employs 3-day event window (-1, 1) CAAR as dependent variable. The independent variables are firm size (total assets: TA), firm profitability (return on assets: ROA), firm leverage (total debt to equity ratio: DE), and firm value (economic value added: EVA). The regression model is described below.

$$\boldsymbol{CAAR_i = \beta_0 + \beta_1 TA + \beta_2 ROA + \beta_3 DE + \beta_4 EVA + \varepsilon_i} \qquad (11)$$

The estimated results for the additions and deletions are shown in Table 6.6.

Table 6.6 Regression Analysis

	Regression Testing	
Variable	**Additions**	**Deletions**
Intercept	-0.0294 (-0.6560)	-0.0137 (-0.3109)
ROA	0.0665** (2.1657)	0.0342 (0.2883)
Log (TA)	0.0129 (1.5971)	-0.0008 (-0.2065)
Log (EVA)	0.0090 (1.6134)	-0.0036 (-0.6329)
DE	0.0002 (0.0204)	0.0000 (0.2223)
F-statistics	4.3572***	0.1928
P-Value	0.0021	0.9391
Adj. R^2	0.0261	0.0261
Observations	140	98

Note: This table shows the estimation results for the regression model for explaining the market reaction to CG scoring announcements. The dependent variable is the cumulative average abnormal returns (CAAR) in the 3-day event window (-1, 1). T-statistics are reported below the estimated coefficients in parenthesis. Coefficient significantly different from zero at a significance level of 10%, 5% and 1% are marked *, **, and *** respectively.

Equation (11) uses to test the interaction effect of market reaction to the CG scoring announcement. However, this research tests the effect of the market reaction to firms adding to and deleting from the annual CG scoring announcement separately.

According to the Table 6.6, over the entire study period, this research finds statistically significant market reaction for only the CG scoring announcements for the addition firms with *F*-statistics of 4.3572 (*P*-value = 0.0021). For the case of the CG scoring announcement for the deletion firms, the regression results show

statistically insignificant so that it is not possible to conclude the interaction effect of the market reaction to the CG scoring announcement for the deletion firms.

Although this paper finds statistically significant in the market reaction when the CG scoring announcements for the addition firms, among the independent variables only the return on assets (ROA), a proxy for profitability, is statistically significant. This finding result does imply that when firms with a high ROA add to the CG scoring announcement, it creates a positive market reaction. This result is in line with the test of the market reaction on firms violating the CG rules of Kouwenberg and Visit Phunnarungsi (2013).

In summary, with the evidence from the findings in this research, it is possible to answer both research questions: 1) do market players react to CG scoring announcements, and 2) can corporate governance announcements create abnormal returns? If so, is the price change is temporary or permanent?

For the first question, this research finds that market players exhibit a very positive response to CG scoring announcements for the addition firms to the CG scoring. However, the responds are not rapid. The less strong efficient market of the Thai capital market could be a reason behind the lagged action. For the deletion firms from the CG scoring, this study finds that market player have a very negative response to CG scoring announcements. Unlike the slow response of addition cases, the market immediately reacts to CG scoring announcement. The abnormal returns of the deletions show statistically significant negative on the announce day (day 0). This situation could imply that market players are more concerned about bad news and immediately adjust their portfolio.

For the second question, after researching additions (deletions) to CG scoring, it could be concluded that CG scoring announcements can create abnormal returns for anticipate speculators. Speculators that adjust their portfolios on announcement day on average will gain around 1.98% from purchasing the stocks that adding to the CG scoring. This means that the Thai stock market is not efficient since market players can use only publicly available information to construct trading rules that earn economically significant abnormal returns. However, this public information does not permanently remain at a new price level equilibrium. This paper finds that the

abnormal return price level slightly coverage back to the price level on announcement day. This evidence supports the price-pressure effect hypothesis.

Moreover, in terms of the power of measurement methods, this paper finds that the market-adjusted returns methodology seems to have less of a prediction bias than the two other methods, the mean-adjusted returns, and market model adjusted models. However, there are ambiguous results among the various research findings. Thus, it is quite difficult to conclude which measurement methods are suitable for conducting an event study. For this reason, in order to produce an event study researchers have to more carefully take into account the event characteristics, the event testing window (short or long window) sample characteristics, and the systematic risk of each sample stock.

This paper, furthermore, applies a regression model to investigate the factors explaining the market reaction to the CG scoring announcement. However, this research finds statistically significant market reaction only when the CG scoring announcement of addition firms, and among the independent variables only return on assets (ROA), a proxy for profitability, is statistically significant. When firms with a high ROA add to CG scoring announcement, it creates a positive market reaction.

CHAPTER 7

CONCLUSION

7.1 Conclusion

The studies providing evidence of CG announcement and market reaction are limited, especially in regarding the Thai stock market. This paper, thus, investigates evidence on whether the announcement of CG scoring affects firms' market value in the Thai capital market. To find out the results, this paper conducts an event study and employs the 3 methodology models mean-adjusted returns, market-adjusted returns and market-model-adjusted returns to test the effect on stock prices as a result of inclusion or exclusion from the annual CG scoring announcement in the period of 2009 to 2013.

With the findings from this research, it is possible to answer both research questions; 1) whether market players react to CG scoring announcements, and 2) can the corporate governance announcement create abnormal returns? If so, the price change is temporary or permanent.

An addition and a deletion to the CG scoring news is a fully anticipated reaction by the market. For additions, the abnormal returns do not immediately react to the CG scoring news on the event day (day 0). The abnormal returns on day+1 of 1.9829% are statistically significant positive reacted. Therefore, speculators that adjust their portfolios on announcement day on average will gain around 1.98% from purchasing the stocks that adding to the CG scoring. However, the abnormal returns of the addition firms to the CG scoring slightly die out after day+1. The findings indicate that the degree of market reaction to good news is slightly strong but not rapid. The less strong efficient market of the Thai capital market could be a reason behind the lagged action.

For the deletion firms to the CG scoring, the abnormal returns immediately and significantly negative react to the CG scoring news on the event day (day 0). The excess returns on day+1 are also significantly negative. Like the additions' results, the excess returns slightly die out after day+1. The findings of the deletions indicate that the degree of market reaction to bad news is slightly significant and rapid.

The strong evidence of additions and deletions could conclude that the Thai stock market is not efficient since market players can use only publicly available information to construct trading rules that earn economically significant abnormal returns. However, this public information does not permanently remain at new price level equilibrium. This paper finds that the abnormal return price level slightly coverages back to the price level on the announcement day instead of staying at the new equilibrium. This evidence supports the price-pressure effect hypothesis.

Regarding the power of the measurement methods, this paper finds that the market-adjusted returns methodology seems to have less prediction bias than the other 2 methods, the mean-adjusted returns and market model adjusted returns models. However, there are ambiguous results among the various research findings. Thus, it is quite difficult to conclude which measurement methods are suitable to conduct an event study. For this reason, to produce an event study researchers have to more carefully take into account of the event characteristics, the event testing window (short or long window) sample characteristics, and the systematic risk of each sample stock.

This paper, furthermore, applies a regression model to investigate the factors explaining the market reaction to the CG scoring announcement. However, this research finds statistically significant market reaction only when the CG scoring announcement of addition firms, and among the independent variables only return on assets (ROA), a proxy for profitability, is statistically significant. When firms with a high ROA add to CG scoring announcement, it creates a positive market reaction. This result is in line with the test of the market reaction on firms violating the CG rules of Kouwenberg and Visit Phunnarungsi (2013).

7.2 Contributions

This research provides views on the informativeness of CG in relation to the Thailand equity markets: the Stock Exchange of Thailand (SET). The results can be used to confirm the usefulness of CG and to promote the implementation of CG schemes. In addition, this study explores the value of CG from different points of view since an event study of how the market reacts to CG scoring announcement is rarely aware of. The findings in this research shows that the abnormal return price level slightly coverage back to the price level on announcement day. It implies that the Thai investors use the information of the CG scoring announcements to adjust their portfolios and gain excess arbitrages in very short-run period (1-2 days). However, they do not use the CG scoring information to facilitate their investment decisions for the long-run period. This is a failure outcomes that the Thai capital market regulators have to take into account and improve the ways they promote the CG standards to the public.

7.3 Limitations and Further Development

The major limitations of this study are the short time period (the period 2009 to 2013) and the limited number of samples added to and deleted from the CG scoring during the investigation period. Therefore, this study explores only the whole group of stocks being added (deleted) to the CG scoring. A follow-up study may be worth undertaking when a larger sample of cases covering a much longer period is available. Future research may explore sub-group CG scoring (group 5, group 4, group 3, and non-scoring group) analysis.

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