



UNIVERSITAS INDONESIA

**MARKET REACTIONS TO MERGERS AND ACQUISITIONS
ANNOUNCEMENTS AND METHODS OF PAYMENTS BY
CASH AND STOCKS: INDONESIA EVIDENCE**

THESIS

**IVAN LUDICA TOHA
0906654191**

**FACULTY OF ECONOMICS
MASTER OF MANAGEMENT PROGRAM
JAKARTA
JANUARY 2012**



UNIVERSITAS INDONESIA

**MARKET REACTIONS TO MERGERS AND ACQUISITIONS
ANNOUNCEMENTS AND METHODS OF PAYMENTS BY
CASH AND STOCKS: INDONESIA EVIDENCE**

THESIS

Proposed as one of the requirements for obtaining a Master Degree

**IVAN LUDICA TOHA
0906654191**

**FACULTY OF ECONOMICS
MASTER OF MANAGEMENT PROGRAM
MAJORING IN FINANCE
JAKARTA
JANUARY 2012**

STATEMENT OF ORIGINALITY

This final paper represents my own efforts, any idea or excerpt from other authors either in form of publication or in other form of publication, if any, have been acknowledged in accordance to academic standard or reference procedures

Name : Ivan Ludica Toha

Student ID : 0906654191

Signature : 

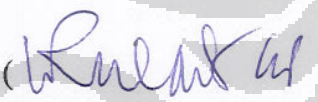
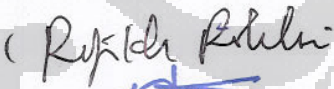

Date : January 2012

CERTIFICATION PAGE

This thesis is proposed by :
Name : Ivan Ludica Toha
Student ID : 0906654191
Program : Master of Management
Title : Market Reactions to Mergers and Acquisitions
Announcements and Method of Payments by Cash
and Stocks: Indonesia Evidence

Has successfully presented the thesis in front of Board of Examiners and
already approved as one of the requirements to achieve the title Master of
Management (MM), Faculty of Economics, Universitas Indonesia

BOARD OF EXAMINERS

Advisor : Dr. Irwan Adi Ekaputra ()
Examiner : Rofikoh Rokhim, PhD ()
Examiner : Imo Gandakusuma, MBA ()

Place : Jakarta

Date : January 9, 2012

PREFACE

First and foremost, I would like to give thanks to God for His blessings and grace so that I could accomplish the Master of Management program at Universitas Indonesia. Then, I would like to acknowledge as well as give my special gratitude to the following remarkable persons who make me where I stand:

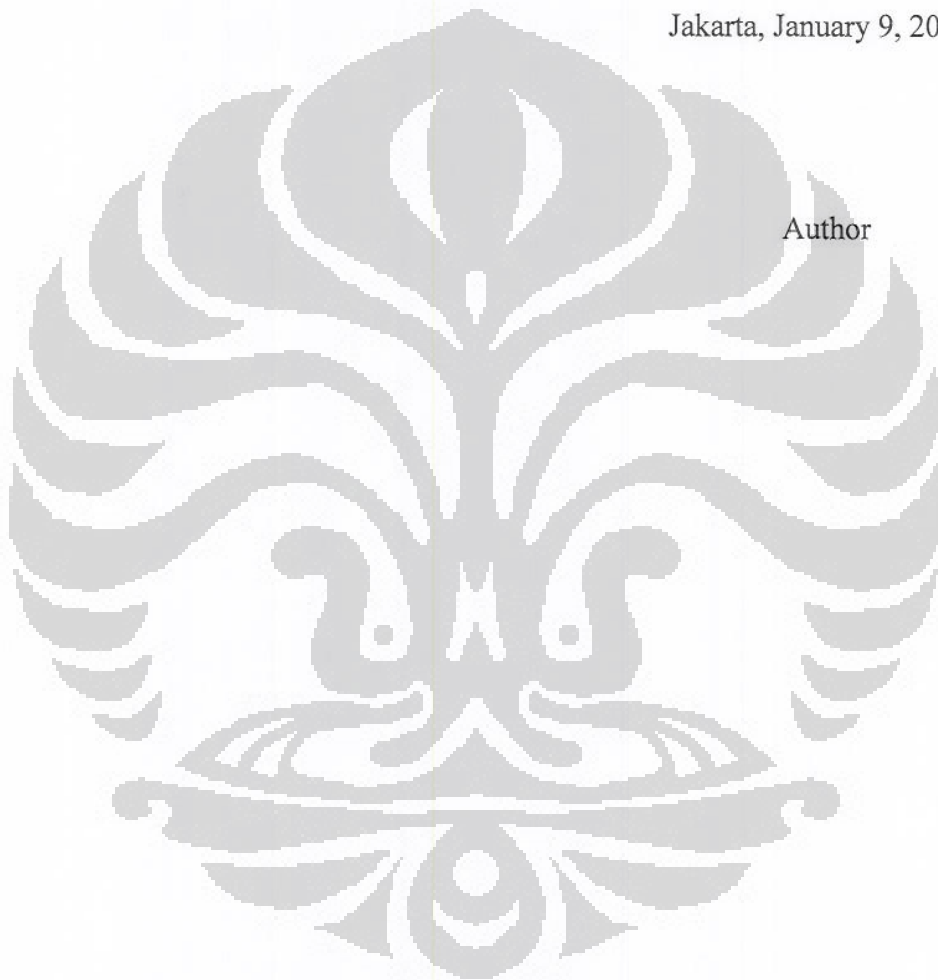
1. Prof. Rhenald Kasali, PhD., as Chairman of Master of Management Program of Faculty of Economics, all lecturers and all staffs of MM-FEUI for their assistance and support during the period of my study.
2. Dr. Irwan Adi Ekaputra, as my thesis advisor who had faith in me while being courageous and patiently counseled me through this final phase of the program with thoughtful advices, ideas, and comments.
3. My parents, Suradi Toha and Lucia Veronica. Dad, thank you for encouraging me to learn more, more and more. Mom, thank you for your prayers and for having faith in me.
4. My brother and sister; Alfin Ludica Toha, Elbert Ludica Toha, and Sansan Suhelda who were very amusing and entertaining during my break time.
5. Lambertus Somar, MSC., thank you for advices and for keeping me in your prayers.
6. Ade Iriyani Hastuti who had been very supportive all these years so that I could have the courage to utilize the most of me. I would like to thank you for keeping me in your prayers while consistently reminding me to have positive thinking in life. Big hug for you.
7. Hafidsyah Mochtar, Rusni Djohardi, Lenny Sutandar, Shiery Wirawan, and colleagues at PT PricewaterhouseCoopers Advisory Indonesia who had been very understanding while I was engaged to projects. I would like to thank you for granting me flexible time during the works.
8. Andy Sutrisno and Muchlis Yanuar for your thoughtful insights and discussions so that I could write better thesis.

9. For those whom I cannot mention one by one yet had been very helpful in the completion of this thesis.

Finally, I welcome constructive criticisms, suggestions, comments and recommendation so that the topics covered in this thesis can be further developed with rich approaches.

Jakarta, January 9, 2012

Author



**STATEMENT OF PUBLICATION APPROVAL
OF FINAL ASSIGNMENT FOR ACADEMIC PURPOSE**

As a member of academic community of Universitas Indonesia, I, the undersigned below:

Name : Ivan Ludica Toha
NPM : 0906654191
Program : Master of Management
Faculty : Economics
Assignment type : Thesis

On behalf of science development, I have fully agreed to give Universitas Indonesia the **Non-exclusive Royalty-free Rights** of my thesis entitled:

**Market Reactions to Mergers and Acquisitions Announcements
and Methods of Payments by Cash and Stocks: Indonesia
Evidence**

along with any related materials if needed. With this Non-exclusive Royalty-Free Rights, Universitas Indonesia has the right to keep, transform and manage in the form of database, distribute and publish it as long as my name is stated as the sole writer/author and as the copyright holder.

I sincerely I declare the statement above is fully true.

Declared in: Jakarta

Dated: January 9, 2012



(Ivan Ludica Toha)

ABSTRACT

Name : Ivan Ludica Toha
Program : Master of Management
Title : Market Reactions to Mergers and Acquisitions Announcements
and Method of Payments by Cash and Stocks:
Indonesia Evidence

This thesis investigates market reactions to mergers and acquisitions announcements and methods of payments by cash and stocks to both Acquiring/Surviving company and Target based on daily stock (abnormal) returns whose stocks are listed in the Jakarta Stock Exchange. It utilizes market efficiency framework specifically the event study methodology by observing 28 samples of Indonesian public companies for period 2004-2010 with an estimation period of 250 days and an event window of 71 days [-10,60]. This research employs the Single Index Market Model as the expected return model due to the assumption that the individual stock return is the function of the index/market return.

Keywords: market reaction, merger and acquisition announcements, method of payment, event study, single index market model

ABSTRAK

Name : Ivan Ludica Toha
Program : Magister Manajemen
Title : *Reaksi Pasar terhadap Pengumuman Merjer dan Akuisisi dan Metode Pembayaran dalam Bentuk Kas dan Saham: Bukti di Indonesia*

Thesis ini menganalisa reaksi pasar terhadap pengumuman merjer dan akuisisi dan metode pembayaran dalam bentuk kas dan saham terhadap perusahaan Pengakuisisi dan Diakuisisi yang sahamnya terdaftar di PT Bursa Efek Indonesia dengan menggunakan imbal hasil (tidak normal) harian. Thesis ini memanfaatkan kerangka pasar yang efisien khususnya metodologi studi kejadian dengan melakukan observasi terhadap 28 sampel dari perusahaan publik untuk periode 2004-2010 dengan periode estimasi sebanyak 250 hari dan periode kejadian 71 hari [-10,60]. Penelitian ini menggunakan the Single Index Market Model untuk mendapatkan ekspektasi imbal hasil dengan asumsi bahwa imbal hasil dari masing-masing saham adalah fungsi dari imbal hasil indeks atau pasar saham.

Kata kunci: reaksi pasar, pengumuman merjer dan akuisisi, metode pembayaran, studi kejadian, the single index market model

TABLE OF CONTENTS

COVER PAGE.....	i
STATEMENT OF ORIGINALITY.....	ii
CERTIFICATION PAGE.....	iii
PREFACE.....	iv
STATEMENT OF PUBLICATION APPROVAL OF FINAL ASSIGNMENT FOR ACADEMIC PURPOSE.....	vi
ABSTRACT.....	vii
<i>ABSTRAK</i>	viii
TABLE OF CONTENTS.....	ix
LIST OF FIGURES.....	xi
LIST OF TABLES.....	xii
LIST OF FORMULAS.....	xiii
LIST OF APPENDICES.....	xiv
1. INTRODUCTION.....	1
1.1. Background.....	1
1.2. Problems.....	4
1.3. Objectives of Research.....	5
1.4. Benefits of Research.....	5
1.5. Organization of Thesis.....	5
2. LITERATURE REVIEW.....	7
2.1. Definition and Basic Forms of Acquisitions.....	7
2.2. Definition and Types of Merger.....	8
2.3. Merger and Acquisition and Shareholder Value.....	9
2.3.1. Merger and Acquisition as Value-increasing Activity.....	9
2.3.2. Merger and Acquisition as Value-decreasing Activity.....	9
2.3.3. Merger and Acquisition as Value-neutral Activity.....	10
2.4. Merger and Acquisition Motives.....	10
2.5. Definition of Merger and Acquisition, Consolidation, and Tender Offer.....	11
2.6. Mechanisms According to Bapepam.....	11
2.6.1. Requirements of Merger and Consolidation.....	11
2.6.2. Procedures for Mergers or Consolidations.....	12
2.6.3. Tender Offer.....	13
2.7. Event Study.....	13
2.7.1. Assumptions.....	13
2.7.1.1. Market Efficiency.....	13
2.7.1.2. Confounding Effects.....	16
2.7.2. Steps in Event Study.....	16
2.7.3. Basic Methods.....	17
3. METHODOLOGY.....	18
3.1. Overview.....	18
3.2. Data Collection.....	19
3.2.1. Identifying Event.....	19
3.2.2. Identifying Sample.....	19
3.2.3. Identifying Event Date.....	21
3.2.4. Determining Estimation Period and Event Window.....	21

3.2.5. Data Gathering.....	22
3.2.6. Sample Selection	22
3.3. Data Processing	25
3.3.1. Calculation of Individual Stock and Market Return.....	25
3.3.2. Single Index Market Model.....	25
3.3.3. Estimated Return	27
3.3.4. Abnormal Return	27
3.3.5. Cumulative Abnormal Return	28
3.3.6. Average Abnormal Return Across Companies	28
3.3.7. Cumulative Averaged Abnormal Return.....	28
3.3.8. Heteroskedasticity and Dependence.....	28
3.3.9. Standardized Abnormal Return	29
3.3.10. Standardized Cumulative Abnormal Return	29
3.3.11. Standardized Average Abnormal Return.....	29
3.3.12. Standardized Cumulative Averaged Abnormal Return.....	29
3.3.13. Hypothesis-testing Procedure	30
3.3.14. Stating the Null- and Alternative Hypothesis.....	30
3.3.15. Selecting the Level of Significance	31
3.3.16. Determining the Test Distribution to Use	31
3.3.17. Defining the Rejection Region	32
4. ANALYSES AND DISCUSSIONS	33
4.1. Analysis on the Expected Return Model.....	33
4.2. Hypothesis I.....	34
4.2.1. Empirical Results for Acquiring/Surviving Companies.....	34
4.2.2. Analysis for Acquiring/Surviving Companies	37
4.2.3. Empirical Results for Target	41
4.2.4. Analysis for Target.....	44
4.3. Hypothesis II	47
4.3.1. Empirical Results for both Acquiring/Surviving company and Target.....	47
4.3.2. Analysis for both Acquiring/Surviving company and Target	50
4.4. Hypothesis III.....	51
4.4.1. Empirical Results for Cash Deal vs. Stock Deal –Acquiring Company.....	51
4.4.2. Analysis for Cash Deal vs. Stock Deal –Acquiring Company.....	54
4.4.3. Empirical Results for Cash Deal vs. Stock Deal – Target.....	56
4.4.4. Analysis for Cash Deal vs. Stock Deal – Target	58
4.5. Mini Case study of PT Bank Niaga, Tbk.	59
5. CONCLUSIONS AND SUGGESTIONS	62
5.1. Conclusions	62
5.2. Research Limitations.....	63
5.3. Suggestions.....	63
5.3.1. To Future Researchers.....	63
5.3.2. To Stockholders.....	63
REFERENCES.....	64

LIST OF FIGURES

Figure 1.1	M&A by Volume and Number of Deals	2
Figure 1.2	M&A by Average Premium and Average Disclosed Deal Size	2
Figure 1.3	Number of M&A Deals by Region in 2010	4
Figure 1.4	M&A Deals by Volume (US\$ in billion) in 2010	4
Figure 2.1	Classification of Acquisitions.....	7
Figure 2.2	Market Reactions toward Announcement of M&A	16
Figure 3.1	Methodology Sequence	19
Figure 3.2	Estimation Period and Event Window	22
Figure 4.1	Average Abnormal Return of Acquiring/Surviving Company.....	38
Figure 4.2	Cumulative Average Abnormal Return of Acquiring/Surviving Company	38
Figure 4.3	Standardized Average Abnormal Return of Acquiring/Surviving Company	39
Figure 4.4	Standardized Cumulative Average Abnormal Return of Acquiring/Surviving Company	40
Figure 4.5	Outliers Snapshot for Acquiring Company based on Cumulative Abnormal Returns.....	41
Figure 4.6	Average Abnormal Return of Target.....	45
Figure 4.7	Standardized Average Abnormal Return of Target.....	45
Figure 4.8	Cumulative Average Abnormal Return of Target.....	46
Figure 4.9	Standardized Cumulative Average Abnormal Return of Target.....	46
Figure 4.10	Outliers Snapshot for Target based on Cumulative Abnormal Returns	47
Figure 4.11	Cumulative Abnormal Returns of BNGA	60

LIST OF TABLES

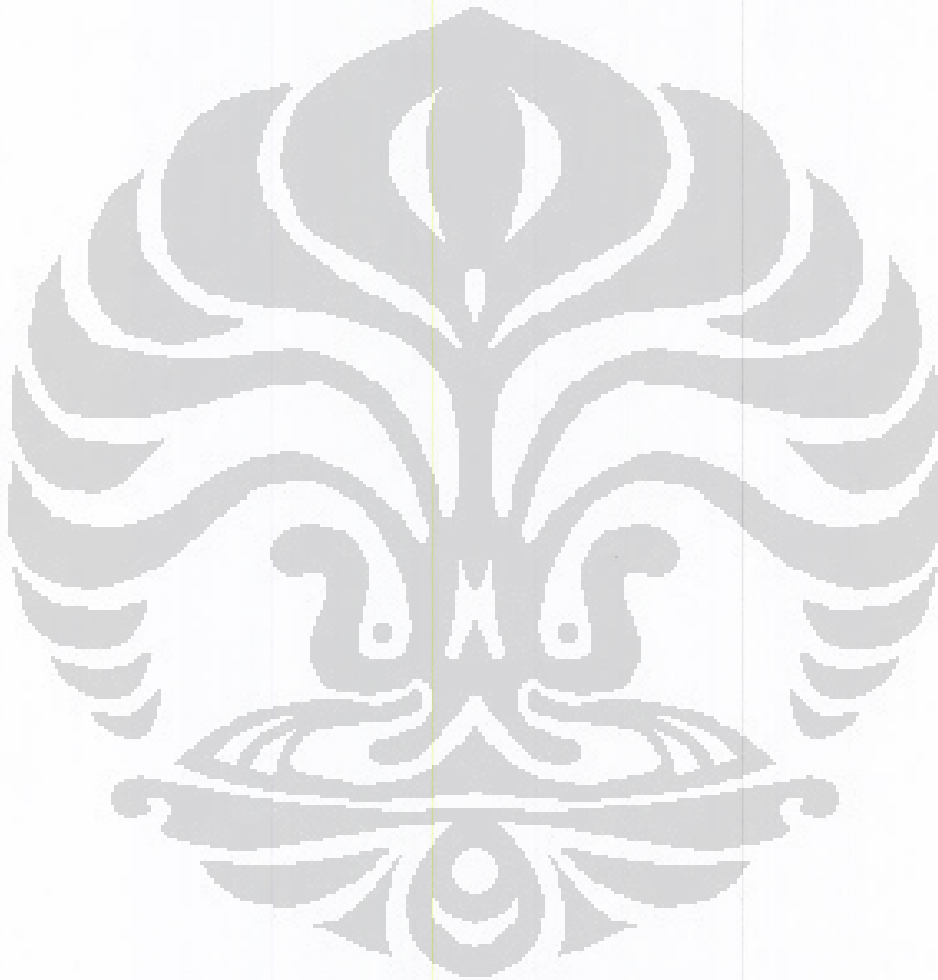
Table 3.1	Identifying Sample	20
Table 3.2	Total Samples	21
Table 3.3	Applying Elimination Criteria to Identified Samples.....	23
Table 3.4	Qualified Samples	24
Table 3.5	Hypotheses whether Announcements of M&A Produces Abnormal Returns to Stockholders of Acquiring/Surviving Company and Target	30
Table 3.6	Hypotheses whether Announcements of M&A Produces Abnormal Returns that is not Different from Stockholder of Acquiring/Surviving Company and that of Target.....	30
Table 3.7	Hypotheses whether there are Differences In Abnormal Returns Earned by Stockholders Of Acquiring/Surviving Company and Target If The M&A Transactions Use Cash Deal or Stock-For-Stock Deal	31
Table 4.1	Summary of the SIMM.....	33
Table 4.2	Empirical Result of the Significance Test for Acquiring/Surviving Company According to Non- Standardized- and Standardized Abnormal Return	34
Table 4.3	Empirical Result of the Significance Test for Acquiring/Surviving Company According to Non- Standardized- and Standardized Cumulative Abnormal Return	35
Table 4.4	Empirical Result of the Significance Test for Target According to Non-Standardized- and Standardized Abnormal Return.....	41
Table 4.5	Empirical Result of the Significance Test for Target According to Non-Standardized- and Standardized Cumulative Abnormal Return	43
Table 4.6	Non-standardized- and Standardized Abnormal Returns for Acquiring/Surviving and Target.....	47
Table 4.7	Non-standardized- and Standardized Cumulative Abnormal Returns for Acquiring/Surviving and Target.....	49
Table 4.8	Significance Test for Cash Deal vs. Stock Deal – Acquiring Company based on Abnormal Returns.....	51
Table 4.9	Significance Test for Cash Deal vs. Stock Deal - Acquiring Company based on Cumulative Abnormal Returns	52
Table 4.10	Significance Test for Cash Deal vs. Stock Deal – Target based on Abnormal Returns	56
Table 4.11	Significance Test for Cash Deal vs. Stock Deal – Target based on Cumulative Abnormal Returns.....	57

LIST OF FORMULAS

(3.1)	Calculation of Individual Stock Return	25
(3.2)	Calculation of Index Return.....	25
(3.3)	Single Index Market Model	25
(3.4)	Decomposition of Alpha.....	26
(3.5)	Single Index Market Model with the Random Component	26
(3.6)	Market Covariance	26
(3.7)	Industry and Other Effect.....	27
(3.8)	Estimated Individual Stock Return	27
(3.9)	Estimated Individual Stock Return – Rewritten I.....	27
(3.10)	Estimated Individual Stock Return – Rewritten II.....	27
(3.11)	Abnormal Return.....	27
(3.12)	Cumulative Abnormal Return.....	28
(3.13)	Average Abnormal Return Across Companies.....	28
(3.14)	Cumulative Averaged Abnormal Return	28
(3.15)	Standard Abnormal Return	29
(3.16)	Standardized Cumulative Abnormal Return.....	29
(3.17)	Standardized Average Abnormal Return	29
(3.18)	Standardized Cumulative Averaged Abnormal Return	29
(3.19)	<i>t</i> -Test	32
(3.20)	Standard error of samples	32

LIST OF APPENDICES

Appendix 1	Overall Fit of the Regression Line and Statistical Significance...	66
Appendix 2	A Sample Calculation of Abnormal Return on PT. Bank Niaga, Tbk. (BNGA).....	67



CHAPTER 1

INTRODUCTION

1.1. Background

That companies have two options in facing business competition - to grow or to die – is a common practice for any kind of industry in business world. There are various means in order for companies to grow inorganically, and mergers and acquisitions have been recently the most important means (Bertoncelj and Kovač, 2007).

Ross et al (2009) point out that the only one justifiable reason for mergers is synergy. Ross et al (2009) argue that the combined companies obtain synergy when the value after the merger is greater than the sum of value of Acquiring company and that of Target before the merger. The synergy occurs from the increase in cash flow which is initially due to revenue enhancement, cost reduction, lower taxes and lower capital requirements (Ross et al, 2009).

M&As experienced an upward trend from 2004 to 2007 before declining gradually afterwards due to unfavorable economic conditions. The number of completed deals increased significantly by 60.72% from 18,401 deals in 2004 to 29,574 deals in 2007 before declining by 38.38% to 18,224 deals in 2010. Overall, the number of M&A deals decreased by 0.16% compounded annual growth rate (“CAGR”) over the years (Figure 1.1). Despite the downward trends of the overall number of M&A deals, the target companies obtained an overall increase of 5.95% CAGR due to a gradual increase in premium received from Acquiring/Surviving companies (Figure 1.2) (Bloomberg Terminal, 15 November 2011).

Out of the total deals completed in 2010, Asian companies contributed the highest percentages amounting to 38.06% while North American companies contributed as much as 34.16% followed by European companies (21.18%), Latin American and Caribbean companies (3.76%) and Middle Eastern and African companies (2.84%) (Figure 1.3). In addition, M&A activities were worth US\$ 2 trillion in 2010 as North American companies spent the most totaling US\$ 871 billion (42.38%) and Asian companies were in the second place by spending US\$ 515 billion (25.04%) followed by European companies (23.91%), Latin American and Caribbean companies (6.25%) and Middle East and African companies

(2.42%) with deal volume of US\$ 491 billion, US\$ 128 billion, and US\$ 50 billion, respectively (Figure 1.4) (Bloomberg Terminal, 15 November 2011).

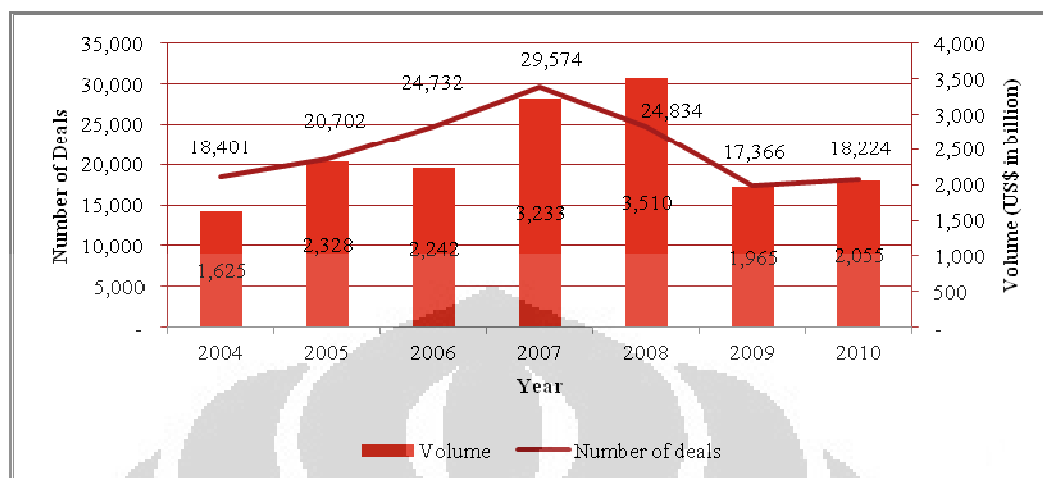


Figure 1.1 M&A by Volume and Number of Deals

Source: Bloomberg Terminal, 15 November 2011

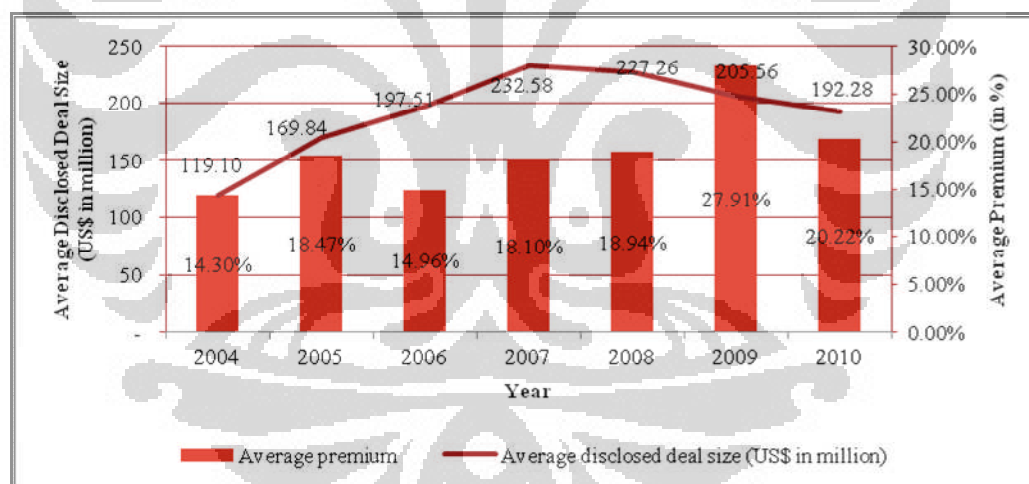


Figure 1.2 M&A by Average Premium and Average Disclosed Deal Size

Source: Bloomberg Terminal, 15 November 2011

Given the large number of transaction of M&A deals in the world, several studies were conducted to provide a closer look of M&A cases. For the purpose of this thesis, the author will only focus on the effects of the announcement of M&A and how the deals were financed to stockholder's wealth.

Prior to this thesis, several studies were conducted to scrutinize the intended topics. For instance, Jensen and Ruback (1983), Huang and Walkling (1987), and Andrade, Mitchell and Stafford (2001) conclude that returns on Target stock are higher if the M&A transaction uses the cash deal rather than the stock-for-stock deal. The cash deal resulted in higher abnormal returns for stockholders of Target due to tax consideration; shareholders of Target require relatively higher premiums in conditions that force them to pay immediate taxes on their gains (Huang and Walkling, 1987). Similar case is also applicable to the returns on Acquiring/Surviving companies whereas returns on Acquiring/Surviving company are higher when the M&A transactions uses cash deal rather than stock-for-stock deal (Travlos, 1987; Andrade, Mitchell and Stafford, 2001).

In Indonesia itself, Widyawirasari (2001) reports that announcement of M&A during the period of 1995-1996 provided abnormal return to stockholders even though the return decreased gradually after the announcement date. Thus, Widyawirasari concludes that M&A does not bring any additional wealth to stockholders. Meanwhile, Cahyono (2006) conducts a research on return abnormality received by stockholders associated with the announcement of M&A for publicly traded Indonesian companies whose stocks were registered in the Jakarta Stock Exchange (“BEJ”) for the period of 2001 until 2005. Cahyono concludes that M&A transactions do not create synergy and therefore, do not create value for acquiring firms.

Markets have interest on information as it conveys profit opportunities so that they are responsive towards new information (Bodie, Kane and Marcus, 2009). Market reaction is supposedly unpredictable as the information come all of a sudden, therefore stock price – theoretically – will move randomly (Bodie, Kane, Marcus, 2009). Damodaran (2002) argues that the event study methodology is best suited to scrutinize the market reactions towards the information events.

To provide value added to the previous researches, this research is intended to explore market reactions to M&As announcements by adding the method of payment element for publicly traded Acquiring/Surviving company and Target in Indonesia for the period of 2004-2010.

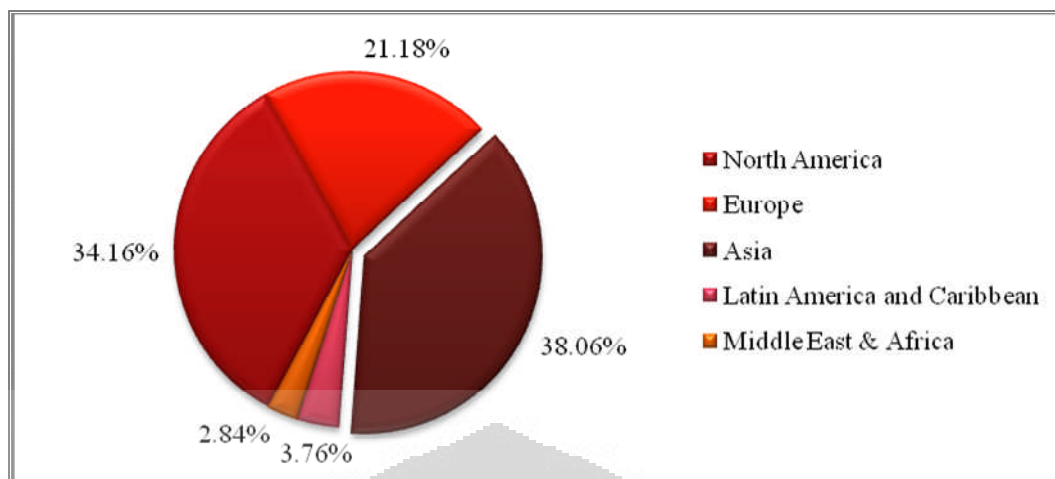


Figure 1.3 Number of M&A Deals by Region in 2010

Source: Bloomberg Terminal, 15 November 2011

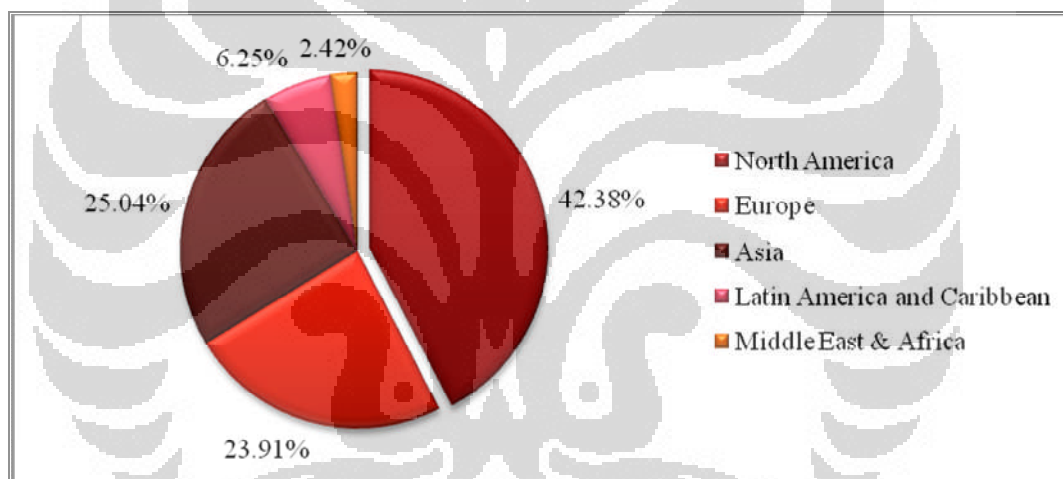


Figure 1.4 M&A Deals by Volume (US\$ in billion) in 2010

Source: Bloomberg Terminal, 15 November 2011

1.2. Problems

This research is intended to discuss the following problems:

1. whether announcement of M&As brings abnormal return to stockholders of Acquiring/Surviving company and Target.
2. whether stockholders of Acquiring/Surviving company receive different abnormal return compared to stockholders of Target with regards to the announcement of M&A.

3. whether stockholders of Acquiring/Surviving company receive different abnormal return compared to stockholders of Target if the M&A deals are financed with cash or stocks.

1.3. Objectives of Research

Given the above problems, therefore, the objectives of this research are as follows:

1. to identify whether announcement of M&A brings abnormal returns to stockholders of Acquiring/Surviving company and Target.
2. to identify whether there are differences in abnormal returns earned by stockholders of the Acquiring/Surviving company and Target.
3. to identify whether there are differences in abnormal returns earned by stockholders of the Acquiring/Surviving company and Target if the M&A deals are financed by cash or stocks.

1.4. Benefits of Research

Benefits of this research are as follows:

1. To Future Researchers, this research provides fresher look on market reactions (in Indonesia) towards mergers and acquisitions announcements and methods of payments in the form of cash or stocks.
2. To Stockholders, this research provides insight on how Indonesian market reacted towards mergers and acquisitions announcements. In addition, this research also provides insight that stockholders may want to consider method of payment in negotiating the deal as it brings impacts on stock returns.

1.5. Organization of Thesis

Chapter 1 Introduction

This chapter conveys background of M&A activities by volume, number of deals, average premium, and average disclosed deal size for the period of 2004-2010. In addition, chapter I consists of problems, purposes (objectives) of research, and organization of the thesis

Chapter 2 Literature Review

This chapter presents the underlying rules in relation to mergers, acquisitions, consolidations and tender offers. Chapter II also discusses academic theories which provide basis and foundation of the research; basic forms of acquisitions, types of merger, M&As and shareholder value, M&A motives, assumptions in event study methodology, steps in event study, and basic methods of conducting event study methodology.

Chapter 3 Methodology

The discussion in this chapter includes research design, hypothesis, hypothesis testing tool, and explanation of the methodology employed during the research.

Chapter 4 Analysis and Discussion

This chapter covers the analysis towards the result of the research and hypothesis testing based on the processed data.

Chapter 5 Conclusions and Suggestions

This chapter presents of conclusions of the research and suggestions addressed to stockholders of Acquiring/Surviving companies and Target and for further research.

CHAPTER 2 LITERATURE REVIEW

2.1. Definition and Basic Forms of Acquisitions

Damodaran (2002) defines acquisitions by the way a company is acquired; by another firm and by its internal management and outside investors. If a company is acquired by another firm, then the acquisition can take place in four different forms; merger, consolidation, tender offer, or acquisition of assets. Both merger and consolidation require the approval of shareholders whereas no shareholder approval is needed for tender offer and acquisition of assets. A buyout occurs when a company is acquired by its own management and outside investors, consequently the acquired company will continue to exist but becomes a private company (Figure 2.1).

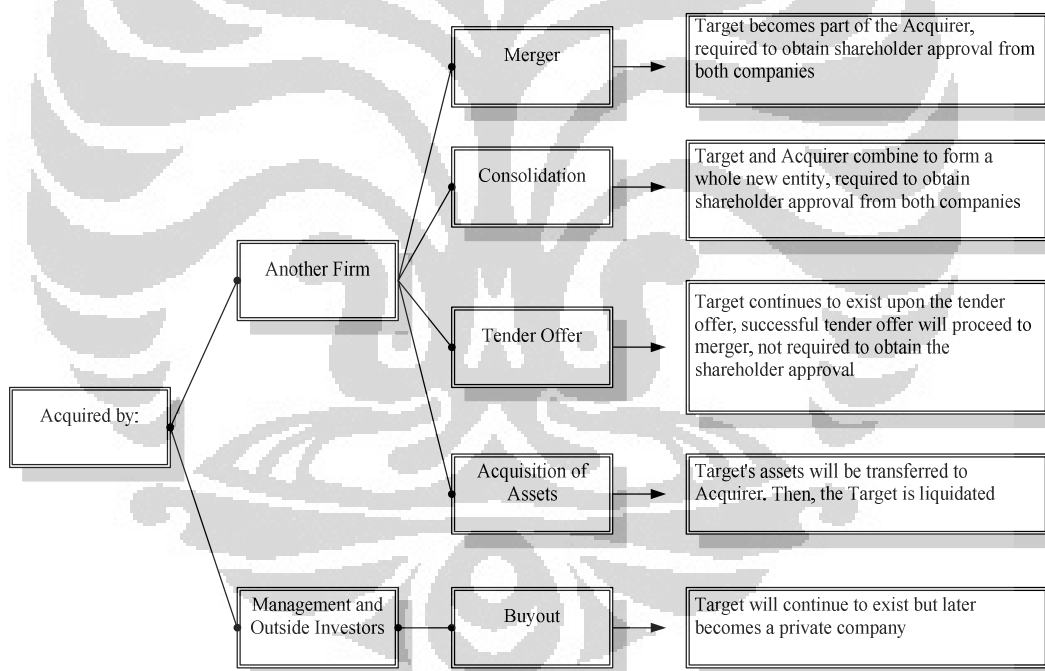


Figure 0.1 Classification of Acquisitions

Source: Damodaran (2002:691)

The basic forms of acquisitions in common business practice are (Scharf, Shea and Beck, 1991) as follows:

- Statutory Merger

Merger is defined as incorporation of one company to another. Acquiring firm assumes all of the assets and liabilities of Target and creates no separate business entity. A statutory merger is accomplished upon the signing of a merger agreement by the board of directors and the shareholders of acquiring company and Target.

- Acquisition of stock

Acquisition of stock takes place when acquiring company purchases the voting stock of Target in exchange for cash and shares of stock. The process of acquisition of stock starts when the acquiring company proposes a direct offer to stockholders of Target. An offer might take place in the form of public offer to buy shares of the Target (by public announcement i.e. newspaper) – this is usually known as tender offer. Acquisition of stock does not necessarily obtain the consent of the Board of Directors and shareholders of Target, which opens possibility to a hostile takeover.

- Acquisition of assets

Acquisition of assets generates the transfer of title from Target to acquiring company. In order for acquisition of asset to be accomplished, a vote among Target stockholder must take place. Acquisition of assets will not create minority shareholders as in the acquisition of stock.

2.2. Definition and Types of Merger

Merger occurs when two (or more) companies combine their shares into a portfolio (Langetieg, Haugen and Wichern, 1980). Merger activity can be grouped into three different types according to the level of economic activity; horizontal-, vertical-, and conglomerate merger. Horizontal merger represents a business combination of two or more companies operating and competing in a relatively same business activity. Vertical merger is a business combination of two or more companies operating and competing in different activities along with the value chain of an industry. In addition, conglomerate merger reflects a business combination of two or more companies operating and competing in totally different types of business activities in different industries (Weston, Mitchel, and Mulherin, 2004).

2.3. Merger and Acquisition and Shareholder Value

2.3.1. Merger and Acquisition as Value-increasing Activity

Scholars draw different conclusions on valuation effects of M&As. Coase (1937) believes that M&As are value-increasing decisions as he argues that M&As create transaction cost efficiency, that is, the decision to produce goods (and services) depends on the balance of the transaction cost of markets and internal production after taking technological changes into consideration.

An alternative theory regarding why M&As create value for shareholder is based on the notion of synergy proposed by Bradley, Desai, and Kim (1988). They argued that the combined value of the Target and Acquiring companies increase by 7.4% in a successful tender offer – an attempt to exploit a profit opportunity due to a change in economic condition by Acquiring/Surviving company. The value generated by the combination of companies may take in the form of management efficiency, economies of scale, and any other value-creating item that falls under the general definition of corporate synergy.

Manne (1965) also views the M&As as value-increasing activities as they act as self-mechanism to corporate control by facilitating competition for management of both acquiring company and Target. Manne argues that management of acquiring company has the right to replace management of Target if they are held responsible for company's poor performance.

The research regarding the relationship between merger types and shareholder returns conducted by Elgers and Clark (1980) argue that conglomerate mergers resulted in significant wealth effect for stockholders of both acquiring company and Target, compared to non conglomerate mergers.

2.3.2. Merger and Acquisition as Value-decreasing Activity

In contrast, Jensen (1986) views M&As as value-reducing activities due to agency costs of free cash flow. In his research of the oil industry in 1970s, Jensen found that excess of free cash flow led to poor diversification decisions. An alternative theory in relation to why M&As reduce value for shareholder is based on the notion of the management entrenchment proposed by Shleifer and Vishny (1989); management makes investment decisions to increase managements' value and is not necessarily in favor of shareholders.

Langetieg et al (1980) report that M&A is a risk-increasing activity to stockholder as it increases both systematic, total, and diversifiable risk for the combined companies.

2.3.3. Merger and Acquisition as Value-neutral Activity

Roll (1986) offers different view from the aforementioned scholars as he proposed a managerial hubris model – individual managers tend to be overly confidence in making investment decisions, leading to over value Target's value which later falls into the winner's curse.

2.4. Merger and Acquisition Motives

Berkovitch and Narayanan (1993) researched the correlation among Target, Acquiring company and total gains to research the motivations behind 330 tender offers during 1963-1988. They found that the synergy was the main driver for the majority of tender offers occurred during that period, followed by agency and hubris.

M&A occurs due to both exogenous changes and internal initiatives. Exogenous changes refer to (1) technological changes, (2) globalization, (3) changes in industrial organization, (4) new industries, (5) deregulation and regulation, (6) better macroeconomic condition, (7) higher inequalities in income and wealth (Weston, Mitchel and Mulherin, 2004).

As far as the internal initiatives are concerned, the most common motivations in an acquisition from Target's perspective include (1) inability to face business competition independently, (2) economies of scale, (3) obtaining better resources of the acquiring company. In contrast, the most common motivations in acquisition from acquiring firm's perspective are, but not limited to, (1) revenue enhancement, (2) cost reduction, (3) synergies, (4) idle resources, (5) increasing market share and reducing price competition, (6) extending new geographic coverage, and (7) diversifying strategy (Sherman and Hart, 2006).

One or more companies which agree to merge usually share the same motivations such as (1) to reorganize the industry value chain, (2) to achieve economies of scale and scope in response to threat from low-cost player, (3) to improve technological processes, (4) to best utilize best management talent, (5) to receive tax benefits (Sherman and Hart, 2006).

2.5. Definition of Merger and Acquisition, Consolidation, and Tender Offer

The M&A activities in Indonesia are overseen by the Indonesia Capital Market and Supervisory Agency (Bapepam) through the issuance of several regulations; (1) Bapepam Rules No. IX.G.1 concerning Mergers and Consolidations of Public Companies and Issuers, (2) Bapepam Rules No IX.F.1 regarding Tender Offers, and (3) Bapepam Rules No. IX.H.1 in relation to Open Company Takeover.

According to the Bapepam rules No. IX.G.1, a merger refers to a legal act of combining one company or more with another company where only one of the companies retains its identity. Meanwhile, according to the same regulation, Bapepam defines consolidation as a legal act in which two or more companies are combined into new company and all of previous companies cease to operate and are dissolved. In Bapepam Rules No IX. F. 1, tender offer refers to an offer through the mass media to acquire equity securities by purchasing or exchanging with other securities. A company takeover is defined – by Bapepam Rules No. IX. H. 1 – as an activity which directly or indirectly causes a change in a company's control

Based on the same regulation, company's control is (1) any individual who owns a minimum of 25% of a company's shares, unless the person individual could prove that (s)he does not control the company, or (2) any person individual who has the ability to control a company directly or indirectly in determining the designation and resignation of directors (and commissioners) or in making any change in the company's article of association.

2.6. Mechanisms According to Bapepam

2.6.1. Requirements of Merger and Consolidation

Bapepam rules No.IX.G.I stipulates the requirements of merger and consolidation ~~are~~ as follows; (1) directors and commissioners of a public company that is a participant in a merger or consolidation must submit a Statement to Bapepam and to the company's General Meeting of Shareholders which confirm that the Merger or Consolidation takes into account the interest of the companies, the public, and fair competition, and will guarantee the rights of shareholders and employees, (2) aforementioned Statement must be supported by an opinion given

by an independent individual, (3) the action must obtain the approval of the General Meeting of Shareholders of the company, (4) participants in the merger and consolidation action must provide a merger or consolidation statement to Bapepam that contains the merger or consolidation plan.

2.6.2. Procedures for Mergers or Consolidations

In addition to the requirements of Mergers and Consolidation, rule No.IX.G.I also provides procedures which have to be followed by companies that are planning to perform a non organic growth (i.e. merger and consolidations). The procedures for mergers or consolidations are as follows: (1) that directors of each company must conduct a feasibility study of the merger or consolidation upon the receipt of agreement from the commissioners, (2) directors of each company must provide a merger or consolidation plan that is approved by commissioners, (3) if the aforementioned merger or consolidation will result in a material change in the nature of the company, its financial condition or other relevant matters, the impact of the changes must be described in the merger or consolidation plan, (4) the merger or consolidation statement along with supporting documents must be submitted to Bapepam not later than two working days upon approval by the commissioners, (5) a summary of the merger or consolidation plan must be announced to the public in two Indonesian newspapers, one of which must have national circulation, not later than two working days after the approval of the commissioners. The announcement must state that the planned merger or consolidation has not been declared effectively by Bapepam nor received approval of the General Meeting of Shareholders, (6) if Bapepam does not require additional information from the company within 20 days upon receiving the merger or consolidation statement, it may be assumed that the statement was complete and that it fulfills all of the established requirements when submitted, (7) if information regarding the planned merger or consolidation becomes known by an outside party, the companies participating in the merger or consolidation must immediately inform Bapepam and announce the planned merger or consolidation to the public not later than the next work day after the plan becomes known by outside party, (8) if the shares of companies that are

participants in the merger or consolidation are listed on a securities exchange, such companies must comply with the rules of the exchange.

2.6.3. Tender Offer

In the event of a company takeover, Bapepam Rule No. IX.F.1 stipulates that the new controller of the company must conduct a tender offer for the whole remaining shares of the company, except for: (1) shares owned by shareholder that has made another company takeover transaction with the new controller of that company, (2) shares owned by any other person that has already made an offering with similar terms and conditions as those of new controller of that company, (3) shares owned by any other person who, at the same time, also conducts a tender offer for the same shares, (4) shares owned by substantial shareholders or other controllers of that company.

The exercise execution of aforementioned tender offer must start no later than the end of the second workday after the company takeover takes place and must be performed in accordance with Bapepam Rule No. IX.F.1

2.7. Event Study

2.7.1. Assumptions

2.7.1.1. Market Efficiency

Information is the currency in the stock market, as investors trade stocks because of the (economic) opportunities from companies whose shares are being traded. In a simple way, information conveys profit opportunity – something that is looked after by investors (Bodie, Kane and Marcus, 2009). Thus, if an investor receives information indicating that some underpriced stocks are available in the stock market, investor is likely to take long positions until the stock prices reach the fair level. In case of the price of the stocks increase straight away – at all already available information – such increase must be driven by new information (e.g. stock splits, dividends, M&As, resignation of then CEO or appointment of new CEOs, etc). As the name implies, new information must come all of a sudden, be unpredictable, so that market (reflected in the stock price) reactions towards the new information should be unpredictable too. The phenomenon of the unpredictable market reactions towards the unpredictable information is the

underlying concept of the random walk theory which is closely related to the efficient market hypothesis.

The random walk theory argues that the expected change in the stock price can be positive (or negative) after taking the time value of money and risk factors (i.e. systematic risk) . Loosely speaking, the theory argues that stock price moves randomly and unpredictably (Bodie, Kane and Marcus, 2009).

Stock market is efficient when the expected net present value of all future profits are reflected in the stock price at a given period (Hirschey and Nofsinger, 2008). Damodaran (2002) defines market efficiency based on the true value - stock price conveys unbiased estimation of the true value of the investment with the following three important concepts. First, market efficiency does not refer to the fact that the stock price must reflect the true value of investment every single time. Alternatively, stock price may be greater or lesser than the true value of investment only if the price deviation move randomly (and the stock price be unbiased). In the real world, the stock price may deviate from true value but the first and foremost criterion is that the deviation must be random. The randomness in stock price movement leads to the second concept; the stock price deviations are not correlated with any observable variable – causing an equal chance that every stock being traded in the market is greater or lower than the true value of investment at any point in time. Finally, randomness in stock price movement should prevent any investor in finding under- or over valued stocks consistently.

The efficient market hypothesis suggests that (1) a group of investor is unable to beat the market consistently by employing any investment strategy and (2) the expected return aligns with the risk over the long term. The conditions for market efficiency are created by investors reactions toward other investors actions in the stock market. Followings are necessary conditions for market efficiency (Fama, 1970); (1) there is no transaction cost in stock trading, (2) information is readily available and can be accessed quickly and (3) investors have homogeneous expectations and are risk-averse.

Alternatively, the required conditions for a market inefficiency to be eliminated are as follow (Damodaran, 2002); (1) the asset or assets which is/are the source of the inefficiency has/have to be traded and the transactions costs

should be lower than the expected profits from certain investment scheme, (2) a group of investors who are profit-maximizing oriented that they recognize the potential for excess return and are able to employ the same investment scheme to obtain excess return due to availability of funds until the inefficient market disappear.

As far as the market efficiency is concerned, (There are three different levels of market efficiency : weak form, semi-strong form, and strong form (Fama, 1970). Characteristic of the weak-form efficiency is that the current stock price aligns with the information carried in the historical stock price. Such condition prevents the chartists and fundamentalists to spot undervalued stocks by solely depending on the historical price. Meanwhile, the semi-strong form market efficiency suggests that the current price reflects the combination of the information in the historical price and all public information (e.g. annual reports, financial statements, stock dividends, etc.). The implication of such condition is that a group of investors may not solely rely on the public information in order to spot undervalued stocks. The strong form market efficiency suggests that the current price reflects both public and private information so that undervalued stocks are hardly found consistent.

Scholars use various means to test market efficiency depending on the investment schemes being observed, among them are portfolio approach and event study. Portfolio approach is best suited to study excess (abnormal) return for investment scheme based on trading on observable characteristic of a firm, for example; P/E ratios, price-to-book ratios, dividend yields, etc. On the other hand, event study is best suited to study the effect of information events (M&As announcements, option listing announcements, stock split announcements, etc.) towards the abnormal return (Damodaran, 2002) . The event study has been widely recognized as a powerful means to measure the stock price reactions for two reasons; it tests the null hypothesis that stock market is efficient in relation to (new) information and to scrutinize the effect of some event on the wealth of stockholders (Binder, 1998).

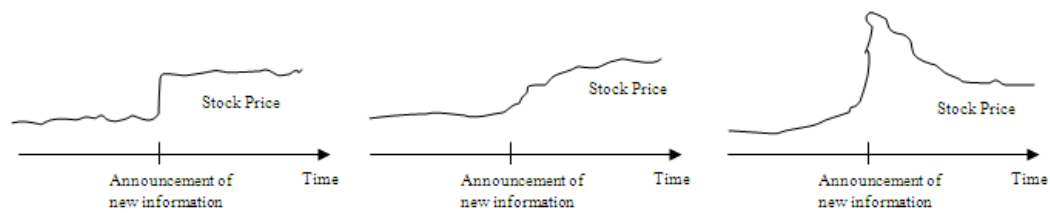


Figure 0.2 Market Reactions toward Announcement of M&A

Source: Damodaran (2002:132)

Figure 2.2 depicts three different market reactions towards announcement of new information. The first one suggests that market is efficient. The following picture shows that the stock price increases steadily – providing a chance for investors to gain excess (abnormal) return upon the announcement. The last picture shows that the stock increases immediately upon the announcement of new information followed by some price adjustments, implying that the market overreacts towards the new information.

2.7.1.2. Confounding Effects

Confounding effects (i.e. industry and size effects) during the event window are isolated, meaning that there are no other events whose impacts may disrupt the results of the event study being researched (Slamka, Soukhoroukova and Spann, 2008).

2.7.2. Steps in Event Study

Event study is employed to scrutinize the market reactions and excess returns before/after specific information event. Event study involves five steps (Damodaran, 2002). The first and foremost step is to identify the event to be studied – the date on which the event is announced. The rationale behind it is that the market reacts to the information about event rather than about the event itself; therefore, researcher is encouraged to center the study around the announcement date for Announcement of M&A. The second step is to make two decisions in relation to gathering stock returns for acquiring company and Target around the announcement dates; collection period or data mining (e.g. daily, weekly, etc) and the event window (number of periods of stock returns before and after the announcement dates). The third step requires an adjustment to the stock return by period (around the announcement date). The fourth step is to average the excess of

returns by period across the acquiring company and Target and to compute a standard error. The last step requires an estimation of the t -statistic for each period by dividing the average excess return by standard error. This last step is designed to ensure whether the excess returns around the announcement are different from zero.

2.7.3. Basic Methods

There are three methods with regards to the event study (Weston, Mitchel, and Mulherin, 2004):

- The mean adjusted return method

Under this method, the average daily returns for acquiring company and Target are estimated after the “clean” period is predetermined. The clean period may refer to before the event period, after the event period, or both, but it never includes the event period. Days on which no information related to the event is announced must be included into the clean period. The predicted return for the firm for each day in the event period is simply the mean daily return for the clean period for acquiring company and Target.

- The market model method

The market model requires the clean period selection first before employing a regression for the days in the clean period. The idea behind this method is to predict daily return for companies by taking into consideration (1) the sensitivity of companies to the return on a market index for certain period (i.e. daily) and (2) the mean return over the period not explained by the market.

- The market adjusted return method

The predicted return for a company for a day in the event period is simply the return on the market index for that particular day.

CHAPTER 3 METHODOLOGY

3.1. Overview

As stated in the introduction, the main purpose of this study is to find the effects of announcement of M&A and how the deals are financed to abnormal return for stockholders of publicly traded Acquiring/Surviving companies and Target. In addition, this study also aims to find whether there are differences in abnormal returns earned by the stockholders and also to find whether there are differences in abnormal returns earned by stockholders of the acquiring company and Target if the M&A transaction use deal and or stock-for-stock deal.

The methodology of this study consists the following steps (Fidiasari, 2006):

1. Data collection, which consists of identifying the event to be studied, identifying event date, determining estimation period and event window, data gathering and sample selection,

2. Data processing, which consists of expected return- and event study modeling.

The expected return modeling is aimed to obtain the expected individual stock return of Acquiring/Surviving companies and Target by employing regression analysis with market return as regressor (time series analysis is employed for insignificant expected return model).

The event study is aimed to capture the abnormal return of Acquiring/Surviving company and Target by calculating the difference between the actual return and the expected return. The difference, known as the residual return or abnormal return, is then accumulated to obtain the cumulative abnormal return (CAR).

3. Significance test, which consists of building hypothesis, conducting statistical significance test, and obtaining interpretation of the test result. The purpose of the significance test is to obtain whether the effects of announcement of M&A and method of payment are statistically significant different from zero to validate that the stockholders of both Acquiring/Surviving company and

Target receives abnormal returns. Following table describes the aforementioned methodology.

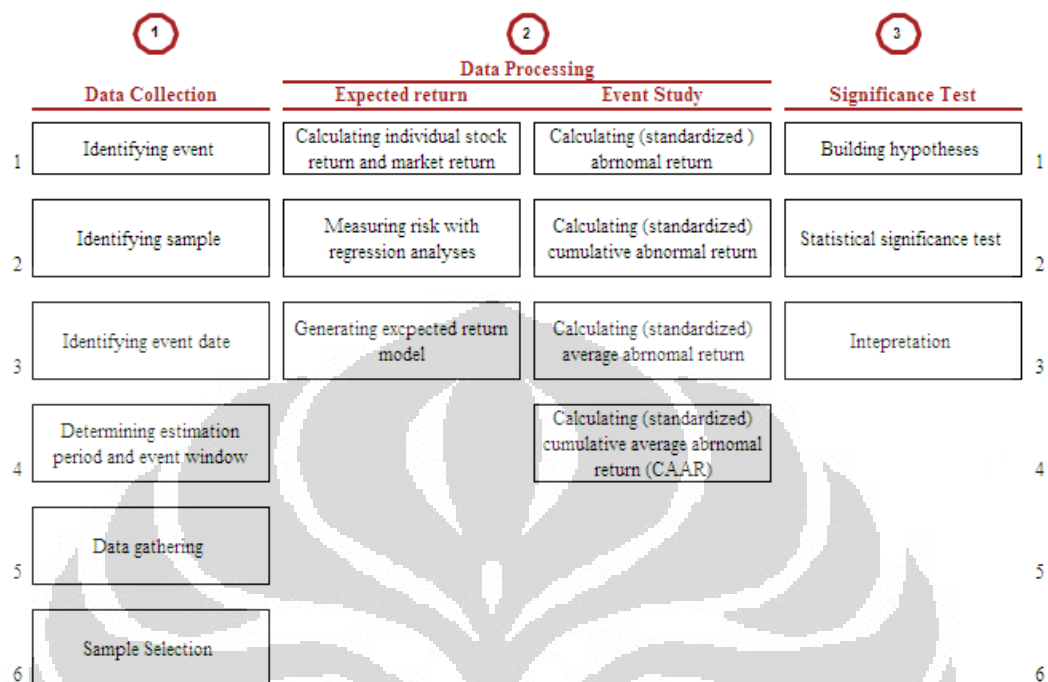


Figure 3.1 Methodology Sequence

Source: Fidiyasari (2006:32), Author analysis

3.2. Data Collection

3.2.1. Identifying Event

Event to be studied is the first announcement of M&A published by potential Acquiring/Surviving company as Bapepam allows the second announcement – caused by addition of changes of information as required by Bapepam according to Bapepam Rules No. IX.F.1. and No.IX.G.I.

The main idea of choosing only the announcement of M&A (not the effective date of M&A) is that the difficulty of indicating whether the abnormal return generated before the date of M&A is the result of a merger event or due to good performance before the M&A takes place (Dodd and Ruback, 1997 in Cahyono, 2006).

3.2.2. Identifying Sample

Samples in this research involve publicly traded Acquiring/Surviving companies and Target whose stocks are listed in the Indonesian stock market for

the announcement period of 2004-2010 and completed M&A deals in the aforementioned period either by cash or stocks (Table 3.1 and Table 3.2). The author believes that the seven-year span will meet the number of data in conducting statistical significance test. The sample identification is designed to have a fresher look on the M&A phenomena for the past seven years.

Table 3.1 Identifying Sample

Year	Acquiring/Surviving Company	Ticker	Target	Ticker	Announce date
2004					
1	PT Bank CIC International	Tbk BCIC	PT Bank Pikko PT Bank Danpac	Tbk BNPB Tbk BDPC	08-Sep-04
2	- International Finance Corp	-	PT Wahana Ottomitra Multiartha	Tbk WOMF	16-Sep-04
3	- Pharmaniaga Bhd	-	PT Millennium Pharmakon International	Tbk SDPC	28-Sep-04
4	- Standard Chartered PLC	-	PT Bank Permata	Tbk BNLI	08-Oct-04
5	PT Bakrie and Brothers	Tbk BNBR	PT Bakrie Sumatera Plantations	Tbk UNSP	27-Oct-04
6	- Dairy Farm International Holdings Ltd	-	PT Hero Supermarket	Tbk HERO	02-Dec-04
2005					
7	PT BAT Indonesia	Tbk BATI	PT Rothmans of Pall Mall Indonesia	Tbk RPMI	04-Jul-05
8	PT Kalbe Farma	Tbk KLBF	PT Dankos Laboratories PT Enseval	Tbk DNKS Tbk EPMT	30-Sep-05
9	Aspac Food Industries Pte. Ltd	-	PT Multi Prima Persada	Tbk TRPK	04-Jul-05
10	PT Sarasa Nugraha	Tbk SRSN	PT Indo Acidtama	-	25-Jun-05
11	PT Siwani Trimitra	Tbk MITI	PT Caraka Berkat Sarana	-	05-Oct-05
12	- Altria Group Inc	-	PT Hanjaya Mandala Sampoerna	Tbk HMSP	13-Mar-05
13	- Oversea-Chinese Banking Corp Ltd	-	PT Bank OCBC Nisp	Tbk NISP	05-Apr-05
14	- HeidelbergCement AG	-	PT Indocement Tunggal Prakarsa	Tbk INTPT	31-May-05
15	- Danone Baby and Medical Nutrition BV	-	PT Sari Husada	Tbk SHDA	20-Jul-05
16	- Komatsu Ltd	-	PT Komatsu Indonesia	Tbk KOMI	11-Aug-05
17	- Scomi Marine Bhd	-	PT Rig Tenders Indonesia	Tbk RIGS	16-Aug-05
18	- United Overseas Bank Ltd	-	PT Bank UOB Buana	Tbk BBIA	20-Oct-05
2006					
19	PT Aedes Waters Indonesia	Tbk ADES	PT Pamargha Indojatim	-	20-Apr-06
20	PT Selamat Sempurna	Tbk SMSM	PT Andhi Chandra Automotive Products	Tbk ACAP	12-Oct-06
21	PT Bumi Resources Nusantara Infrastructure	Tbk BUMI	PT Energi Mega Persada	Tbk ENRG	14-Jun-06
22	d/h PT Metamedia Technologies	Tbk META	PT Nusantara Konstruksi Indonesia	-	19-Jul-06
23	PT Surya Toto Indonesia	Tbk TOTO	PT Surya Pertiwi Paramita	-	21-Dec-06
24	- Sumitomo Corp	-	PT Summitplast	Tbk SMPL	10-Feb-06
25	- Multiple acquirers	-	PT Bank Nusantara Parahyangan	Tbk BBNP	28-Nov-06
26	- Kordsa Global Endustriyel Iplik ve Kord Bezi Sanay	-	PT Indo Kordsa	Tbk BRAM	26-Dec-06
2007					
27	PT Bank Multicor	Tbk MCOR	PT Bank Windu Kentjana	-	03-Oct-07
28	PT PT Mobile-8 Telecom	Tbk FREN	PT Komunikasi Seluler Indonesia PT Metro Seluler Nusantara PT Telekomindo Seluler Raya	- - -	08-Jun-07
29	- Commonwealth Bank of Australia	-	PT Bank Arta Niaga Kencana	Tbk ANKB	08-Jan-07
30	- Mincorp PLC	-	PT ATPK Resources	Tbk ATPK	16-May-07
31	- Indofood Agri Resources Ltd	-	PT Perusahaan Perkebunan London Sumatra Indonesia	Tbk LSIP	26-May-07
32	- Titan Chemicals Corp	-	PT Titan Kimia Nusantara	Tbk FPNI	07-Nov-07
33	PT Media Nusantara Citra	Tbk MNCN	- Linktone Ltd	-	28-Nov-07
34	- Golden Agri-Resources Ltd	-	PT Sinar Mas Agro Resources and Technology	Tbk SMAR	03-Dec-07
35	PT Bumi Resources	Tbk BUMI	- Herald Resources Ltd	-	12-Dec-07
36	- Moya Asia Ltd	-	PT ATPK Resources	Tbk ATPK	18-Dec-07
2008					
37	PT Bank Niaga	Tbk BNGA	PT Bank Lippo	Tbk LPBN	03-Jun-08
38	- Carrefour SA	-	PT Alfa Retailindo	Tbk ALFA	25-Jan-08
39	- Malayan Banking Bhd	-	PT Bank Internasional Indonesia	Tbk BNII	26-Mar-08
40	- Independent News & Media PLC	-	PT Mahaka Media	Tbk ABBA	30-May-08
41	PT Barito Pacific	Tbk BRPT	PT Chandra Asri Petrochemical	Tbk TPIA	27-Jun-08
42	- Qatar Telecom Qtel Q.S.C.	-	PT Indosat	Tbk ISAT	03-Jul-08
43	PT Mitra International Resources	Tbk MIRA	PT Apexindo Pratama Duta	Tbk APEX	28-Oct-08

Table 3.1 Identifying Sample (continued)

Year	Acquiring/Surviving Company	Ticker	Target	Ticker	Announce date
2009					
44	PT Bentoel International Investama	Tbk RMBA	PT BAT Indonesia	Tbk BATI	20-Oct-09
45	- Australia & New Zealand Banking Group Ltd	- -	PT Bank Pan Indonesia	Tbk PNBK	13-Jan-09
46	- HSBC Holdings PLC	- -	PT Bank Ekonomi Rahaaja	Tbk BAEK	25-May-09
47	PT Indika Energy	Tbk INDY	PT Petrosea	Tbk PTRO	14-Jul-09
48	- Taisho Pharmaceutical Co Ltd	- -	PT Taisho Pharmaceutical Indonesia	Tbk	02-Nov-09
2010					
49	- Korea Electric Power Corp	- -	PT Bayan Resources	Tbk BYAN	21-Jul-10
50	- Bumi PLC	- -	PT Berau Coal Energy	Tbk BRAU	16-Nov-10
51	- Asia Pacific Breweries Ltd	- -	PT Multi Bintang Indonesia	Tbk MLBI	12-Feb-10
52	PT Bank Rakyat Indonesia Persero	Tbk BBRI	PT Bank Agroniaga	Tbk AGRO	13-Jul-10
53	- Ramba Energy Ltd	- -	PT Sugih Energy	Tbk SUGI	12-Aug-10

Source: Bloomberg Terminal, 15 November 2011

Author analysis

Table 3.2 Total Samples

Number of Acquiring/Surviving Company	52
Number of Target	56
Total samples	108

Source: Bloomberg Terminal, 15 November 2011

Author analysis

3.2.3. Identifying Event Date

According to aforementioned events, the first event date in this research is the first announcement date by Acquiring/Surviving company as issued in Indonesian newspaper that is nationally circulated. In the case where the announcement dates in the newspaper are not available, the author refers to the dates as recorded by Bloomberg.

3.2.4. Determining Estimation Period and Event Window

There is no exact science on determining event window as it requires professional judgments. Employing long event window provides better condition for researchers to capture the effect of stock price movements in response to an event at the expense of noise towards the data. Weston, Mitchel, and Mulherin (2004) reported that many scholars use an event window of [-40,40] in conducting event studies.

Jogiyanto (in Tobing, 2004) suggests that the choice of long or short event window is subject to the type of an event; short event window is preferable if the economic value on the event is easily predictable (i.e. announcement of annual

earnings and dividends) because stockholders will react to the announcement quickly. In contrast, long event window is preferable if the economic value of an event is hardly predictable such as announcement of M&A as stockholders require longer time to react in response to the announcement. Jogyanto suggests that an event window of 71 days (10 days before the Announcement of M&A, one day at the announcement date, and 60 days after the announcement) is preferable for M&A. Solibakke (in Cahyono, 2006: 25) uses estimation period of 12 to 14 months before the announcement to observe daily return in the Norwegian market for the period 1983 to 1994. Solibakke argues that (1) events can influence returns in various ways, (2) the market model can be modified to control for non-synchronous trading and asymmetric volatility, and (3) event and non-event period can be molded into a single model.

Likewise, there is no exact science on determining the estimation period as it solely depends on the researcher's judgment. As far as estimation period is concerned, 250 days is preferable because it reflects the average trading day in the Indonesian stock market. Thus, the event window and estimation period for this research will be [-10,60] and 250 days, respectively.

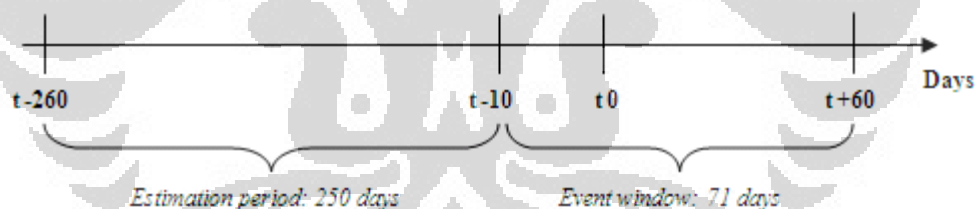


Figure 3.2 Estimation Period and Event Window

Source: Author analysis

3.2.5. Data Gathering

The data for daily individual stock performance and market return are acquired from Bloomberg based on the event date starting from day -260 (before the announcement) until 60 days after the announcement.

3.2.6. Sample Selection

Samples will be eliminated if they fail to fulfill the following criteria: (1) both Acquiring/Surviving company and Target must not experience a major change in business nature (i.e. altering the core business operation of the

companies), (2) both Acquiring/Surviving companies and Target stock must still be listed in the Indonesian stock exchange during the event window [-10,60] and during the estimation period (3) M&A transaction occurred during the event window must not represent an additional stake purchase, (4) both Acquiring/Surviving companies and Target must be Indonesian companies whose stocks are publicly traded in the Jakarta Stock Exchange, (5) there must not be stock split during the estimation period and event window, and (6) there should be data sufficiency and liquidity for both acquiring company and Target during estimation period and event window.

Table 3.3 Applying Elimination Criteria to Identified Samples

Year	Acquiring/Surviving Company	Ticker	Target	Ticker	Announce date	Payment method	Elimination Criteria					
							1	2	3	4	5	6
2004	1 PT Bank CIC International	Tbk BCIC	PT Bank Pkiko PT Bank Danpac	Tbk BNPK Tbk BDPC	08-Sep-04	Stock						✓
	2 - International Finance Corp	-	PT Wahana Ottomitra Multiartha	Tbk WOMF	16-Sep-04	Cash						✓
	3 - Pharmaniaga Bhd	-	PT Millennium Pharmacoin International	Tbk SDPC	28-Sep-04	Cash						✓
	4 - Standard Chartered PLC	-	PT Bank Permata	Tbk BNLI	08-Oct-04	Cash						✓
	5 PT Bakrie and Brothers	Tbk BNBR	PT Bakrie Sumatera Plantations	Tbk UNSP	27-Oct-04	Cash						✓
	6 - Dairy Farm International Holdings Ltd	-	PT Hero Supermarket	Tbk HERO	02-Dec-04	Cash						✓
2005	7 PT BAT Indonesia	Tbk BATI	PT Rothmans of Pall Mall Indonesia	Tbk RPMI	04-Jul-05	Undisclosed						✓
	8 PT Kalbe Farma	Tbk KLBF	PT Dankos Laboratories PT Enseval	Tbk DNKS Tbk EPMT	30-Sep-05	Stock Cash						
	9 Aspac Food Industries Pte. Ltd	-	PT Multi Prima Persada	Tbk TRPK	04-Jul-05	Cash and stock						✓
	10 PT Sarasa Nugraha	Tbk SRSN	PT Indo Acidtama	-	25-Jun-05	Stock						✓
	11 PT Sivanu Trimitra	Tbk MITI	PT Caraka Berkat Sarana	-	05-Oct-05	Stock						✓
	12 - Altria Group Inc	-	PT Hanjaya Mandala Sampoerna	Tbk HMSP	13-Mar-05	Cash						✓
	13 - Oversea-Chinese Banking Corp Ltd	-	PT Bank OCBC Nisp	Tbk NISP	05-Apr-05	Cash						✓
	14 - HeidelbergCement AG	-	PT Indocement Tungal Prakarsa	Tbk INTP	31-May-05	Stock						✓
	15 - Danone Baby and Medical Nutrition BV	-	PT Sari Husada	Tbk SHDA	20-Jul-05	Cash						✓
	16 - Komatsu Ltd	-	PT Komatsu Indonesia	Tbk KOMI	11-Aug-05	Cash						✓
	17 - Seomi Marine Bhd	-	PT Rig Tenders Indonesia	Tbk RIGS	16-Aug-05	Cash						✓
	18 - United Overseas Bank Ltd	-	PT Bank UOB Buana	Tbk BBIA	20-Oct-05	Cash						✓
2006	19 PT Ades Waters Indonesia	Tbk ADES	PT Pamarga Indojatim	-	20-Apr-06	Cash						
	20 PT Selamat Sempurna	Tbk SMSM	PT Andhi Chandra Automotive Products	Tbk ACAP	12-Oct-06	Undisclosed						✓
	21 PT Bumi Resources Nusantara Infrastructure	Tbk BUMI	PT Energi Mega Persada	Tbk ENRG	14-Jun-06	Stock						
	22 PT d/h PT Metamedia Technologies	Tbk META	PT Nusantara Konstruksi Indonesia	-	19-Jul-06	Undisclosed						✓
	23 PT Surya Toto Indonesia	Tbk TOTO	PT Surya Pertiwi Paramita	-	21-Dec-06	Undisclosed						✓
	24 - Sumitomo Corp	-	PT Summitplast	Tbk SMPL	10-Feb-06	Cash						✓
	25 - Multiple acquirers	-	PT Bank Nusantara Perahwangan	Tbk BBNP	28-Nov-06	Cash						✓
	26 - Kordsa Global Industriyel Iplik ve Kord Bez Sanay	-	PT Indo Kordsa	Tbk BRAM	26-Dec-06	Cash						✓
2007	27 PT Bank Multicor	Tbk MCOR	PT Bank Windu Kentjana	-	03-Oct-07	Undisclosed						✓
	28 PT PT Mobile-8 Telecom	Tbk FREN	PT Komunikasi Sehuler Indonesia PT Metro Sehuler Nusantara PT Telekomindo Sehuler Raya	- - -	08-Jun-07	n/a						✓
	29 - Commonwealth Bank of Australia	-	PT Bank Arta Niaga Kencana	Tbk ANKB	08-Jan-07	Cash						✓
	30 - Mincorp PLC	-	PT ATPK Resources	Tbk ATPK	16-May-07	Cash						✓
	31 - Indofood Agri Resources Ltd	-	PT Perusahaan Perkebunan London Sumatra Indonesia	Tbk LSIP	26-May-07	Stock						✓
	32 - Titan Chemicals Corp	-	PT Titan Kimia Nusantara	Tbk FPNI	07-Nov-07	Cash						✓
	33 PT Media Nusantara Citra	Tbk MNCN	- Linktone Ltd	-	28-Nov-07	Cash						✓
	34 - Golden Agri-Resources Ltd	-	PT Sinar Mas Agro Resources and Technology	Tbk SMAR	03-Dec-07	Cash						✓
	35 PT Bumi Resources	Tbk BUMI	- Herald Resources Ltd	-	12-Dec-07	Cash						✓
	36 - Moya Asia Ltd	-	PT ATPK Resources	Tbk ATPK	18-Dec-07	Cash						✓
2008	37 PT Bank Niaga	Tbk BNGA	PT Bank Lippo	Tbk LPBN	03-Jun-08	Stock						
	38 - Carrefour SA	-	PT Alfa Retailindo	Tbk ALFA	25-Jan-08	Cash						✓
	39 - Malayan Banking Bhd	-	PT Bank Internasional Indonesia	Tbk BNII	26-Mar-08	Cash						✓
	40 - Independent News & Media PLC	-	PT Mahaka Media	Tbk ABBA	30-May-08	Cash						✓
	41 PT Barito Pacific	Tbk BRPT	PT Chandra Asri Petrochemical	Tbk TPIA	27-Jun-08	Cash						✓
	42 - Qatar Telecom Qtel Q.S.C.	-	PT Indosat	Tbk ISAT	03-Jul-08	Cash						✓
	43 PT Mitra International Resources	Tbk MIRA	PT Apexindo Pratama Duta	Tbk APEX	28-Oct-08	Cash						✓

Table 3.3 Applying Elimination Criteria to Identified Samples (continued)

Year	Acquiring/Surviving Company	Ticker	Target	Ticker	Announce date	Payment method	Elimination Criteria					
							1	2	3	4	5	6
2009												
44	PT Bentoel International Investama	Tbk RMBA	PT BAT Indonesia	Tbk BATI	20-Oct-09	Cash						✓
45	- Australia & New Zealand Banking Group Ltd	- -	PT Bank Pan Indonesia	Tbk PNBN	13-Jan-09	Cash						✓
46	- HSBC Holdings PLC	- -	PT Bank Ekonomi Raharja	Tbk BAEK	25-May-09	Cash						✓
47	PT Indika Energy	Tbk INDY	PT Petrosea	Tbk PTRO	14-Jul-09	Cash						✓
48	- Taisho Pharmaceutical Co Ltd	- -	PT Taisho Pharmaceutical Indonesia	Tbk	02-Nov-09	Cash						✓ ✓
2010												
49	- Korea Electric Power Corp	- -	PT Bayan Resources	Tbk BYAN	21-Jul-10	Cash						✓
50	- Bumi PLC	- -	PT Berau Coal Energy	Tbk BRAU	16-Nov-10	Cash						✓ ✓
51	- Asia Pacific Breweries Ltd	- -	PT Muhi Bintang Indonesia	Tbk MLBI	12-Feb-10	Cash						✓ ✓
52	PT Bank Rakyat Indonesia Persero	Tbk BBRI	PT Bank Agroniaga	Tbk AGRO	13-Jul-10	Cash						✓
53	- Ramba Energy Ltd	- -	PT Sugh Energy	Tbk SUGI	12-Aug-10	Cash						✓ ✓

Source: Bloomberg Terminal, 15 November 2011

Author analysis

In total, there are 28 publicly traded Indonesian companies meeting the aforementioned criteria. The samples include 10 Acquiring/Surviving companies and 18 Targets. Please refer to the following table for more details regarding the selected samples.

Table 3.4 Qualified Samples

Year	Acquiring/surviving company	Ticker	Target/Merged company	Ticker	Announce date	Payment method
2004						
1	PT Bank CIC International	Tbk BCIC	-	- - -	08-Sep-04	Stock
2	-	- - -	PT Millennium Pharmacon International	Tbk SDPC	28-Sep-04	Cash
3	PT Bakrie and Brothers	Tbk BNBR	-	- - -	27-Oct-04	Cash
4	-	- - -	PT Hero Supermarket	Tbk HERO	02-Dec-04	Cash
2005						
5	PT Kalbe Farma	Tbk KLBK	PT Dankos Laboratories	Tbk DNKS	30-Sep-05	Stock
			PT Enseval	Tbk EPMT		Cash
6	-	- - -	PT Hanjaya Mandala Sampoerna	Tbk HMSP	13-Mar-05	Cash
7	-	- - -	PT Indocement Tunggal Prakarsa	Tbk INTPT	31-May-05	Stock
8	-	- - -	PT Sari Husada	Tbk SHDA	20-Jul-05	Cash
2006						
9	PT Bumi Resources	Tbk BUMI	PT Energi Mega Persada	Tbk ENRG	14-Jun-06	Stock
10	PT Ades Waters Indonesia	Tbk ADES	-	- - -	20-Apr-06	Cash
2007						
11	-	- - -	PT Perusahaan Perkebunan London Sumatra Indonesia	Tbk LSIP	26-May-07	Stock
12	-	- - -	PT Sinar Mas Agro Resources and Technology	Tbk SMAR	03-Dec-07	Cash
13	PT Bumi Resources	Tbk BUMI	-	- - -	12-Dec-07	Cash
2008						
14	PT Bank Niaga	Tbk BNGA	PT Bank Lippo	Tbk LPBN	03-Jun-08	Stock
15	-	- - -	PT Bank Internasional Indonesia	Tbk BNII	26-Mar-08	Cash
16	-	- - -	PT Mahaka Media	Tbk ABBA	30-May-08	Cash
17	PT Barito Pacific	Tbk BRPT	-	- - -	27-Jun-08	Cash
18	-	- - -	PT Indosat	Tbk ISAT	03-Jul-08	Cash
2009						
19	PT Bentoel International Investama	Tbk RMBA	-	- - -	20-Oct-09	Cash
20	-	- - -	PT Bank Pan Indonesia	Tbk PNBN	13-Jan-09	Cash
21	-	- - -	PT Bank Ekonomi Raharja	Tbk BAEK	25-May-09	Cash
22	-	- - -	PT Petrosea	Tbk PTRO	14-Jul-09	Cash
2010						
23	-	- - -	PT Bayan Resources	Tbk BYAN	21-Jul-10	Cash
24	PT Bank Rakyat Indonesia Persero	Tbk BBRI	-	- - -	13-Jul-10	Cash

Source: Bloomberg Terminal, 15 November 2011

Author analysis

3.3. Data Processing

3.3.1. Calculation of Individual Stock and Market Return

The very first step in data processing is to calculate the return of daily individual stock return by applying the following formula (Fidiasari, 2006: 39):

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}} \quad (3.1)$$

Where: R_{it} = actual return stock i for period t

P_{it} = individual stock price for stock i for period t

P_{it-1} = individual stock price for stock i for period $t-1$

Then, then daily return on market (“JCI”) is calculated by applying following formula (Fidiasari, 2006: 39):

$$R_{mt} = \frac{JCI_t - JCI_{t-1}}{JCI_{t-1}} \quad (3.2)$$

Where: R_{mt} = market return for period t

JCI_t = JCI for period t

JCI_{t-1} = JCI for period $t-1$

3.3.2. Single Index Market Model

The author applies the event study methodology to estimate the expected return of the Indonesian stock market using daily data by applying a single index (market) model as it is widely recognized as a powerful tool for testing stock market efficiency (Binder, 1998). As the name implies, the single index model assumes that the stock price movement is driven by a single common influence or index.

The fact that movement of stock price follows the movement of market price suggest that the stock return might be correlated due to a common response to market changes. Given the aforementioned condition, a useful measure of this correlation might be obtained by relating the return on a stock return to market return on a stock market (index) which is formulated as follows (Elton, et al., 2007: 132):

$$R_i = a_i + \beta_i R_m \quad (3.3)$$

Where: R_i = return on stock i

a_i = a random variable of security i 's return that is independent of the market's performance

R_m = a random variable of market index return

β_i = a constant variable that measures the sensitivity of firm i to the market, a measure of risk

In order to capture the effect of the event on stock i , the author controls for normal relation between the return on stock i during day t , R_{it} and R_m during day t by including the period containing the event in determining the β_i (Binder, 1998). As the random variable of security i 's return that is independent of the market's performance (a_i), it is necessary to break it into two different elements; the expected value of a_i (α_i) and the random (uncertain) component of a_i (e_i). The decomposition of a_i can be written as follows (Elton, et al., 2007: 133):

$$a_i = \alpha_i + e_i \quad (3.4)$$

Therefore, substituting a_i with the equation (3.4), the equation (3.3) can be written as follows (Elton, et al., 2007: 133):

$$R_i = \alpha_i + \beta_i R_m + e_i \quad (3.5)$$

Note that (1) e_i and R_m are random variables so that both variables have probabilities distribution and means as well as standard deviations and (2) e_i and R_m are uncorrelated – implying how well equation (3.5) explains the return on any security is independent of what the return on the market happens to be. Aforementioned statements can be constructed as follows (Elton, et al., 2007: 133):

$$\text{cov}(e_i, R_m) = E[(e_i - 0)(R_m - \bar{R}_m)] = 0 \quad (3.6)$$

Value of α_i and β_i (as well as $\sigma^2_{e_i}$) can be estimated by employing a time series-regression analysis, a technique guarantees that e_i and R_m will be uncorrelated for the period to which the equation has been fit (Elton, et al., 2007).

Elton, et al. (2007) argues that the single index model has a unique characteristic compare to other models, that is based on the assumption that value

of e_i is independent of that of e_j . Alternatively, a common co-movement with the stock market is the only driven factor why stocks vary together systematically. This notion implies that industry effects and any other effects beyond market do not play roles in co-movement among securities, which can be written as (Elton, et al., 2007: 133):

$$E(e_i e_j) = 0 \quad (3.7)$$

3.3.3. Estimated Return

The expected return on a security i for period of t can be written as (Elton, et al., 2007: 134):

$$E(R_{it}) = E[\alpha_i + \beta_i R_{mt} + e_i] \quad (3.8)$$

As the expected value of sum of random variables is simply the sum of the expected values, equation (3.8) may be rearranged as (Elton, et al., 2007: 134):

$$E(R_{it}) = E(\alpha_i) + E(\beta_i R_{mt}) + E(e_i) \quad (3.9)$$

The fact that both α_i and β_i are constant variables and the expected value of e_i is zero. Therefore equation (3.9) can be written as follows (Elton, et al., 2007: 134):

$$E(R_{it}) = \alpha_i + \beta_i R_{mt} \quad (3.10)$$

3.3.4. Abnormal Return

A stock experience an abnormal return when e_i is different from zero. Thus, the abnormal return is calculated as the discrepancies between the actual return and the expected return in the event window. It is essentially the part of the return that is unpredicted. In other words, it is an estimate of the change in stock value on that day triggered by the event. The formula for abnormal return is as follows (Oelger and Schiereck, 2011: 147):

$$AR_{it} = R_{it} - E(R_{it}) \quad (3.11)$$

Where: AR_{it} = abnormal return stock i for period t (usually known as the e_i - in a condition that the value of e_i is different from zero)

R_{it} = actual return stock i for period t

$E(R_{it})$ = expected return stock i for period t

3.3.5. Cumulative Abnormal Return

Next is to cumulate the average return across the companies which is then accumulated for each day over the entire event period to produce the cumulative average return (Oelger and Schiereck, 2011: 47):

$$CAR_{it} = \sum_{t=t1}^{t2} AR_t \quad (3.12)$$

Where: CAR_{it} = cumulative average return for stock i for period t

AR_t = averaged abnormal return across the companies for period t

3.3.6. Average Abnormal Return Across Companies

The next step is to average the abnormal return across the companies for each day in event time to produce the average residual for that day (Oelger and Schiereck, 2011: 47):

$$AAR_t = \left(\frac{1}{n} \right) \sum_{i=1}^n AR_{it} \quad (3.13)$$

Where: AAR_t = averaged abnormal return across the companies for period t

AR_{it} = abnormal return stock i for period t

n = number of companies

3.3.7. Cumulative Averaged Abnormal Return

The next step is to average the cumulative abnormal return across the companies (MacKinley, 1997: 23):

$$CAAR_{t1,t2} = \sum_{t=t1}^{t2} AAR_t \quad (3.14)$$

Where: $CAAR_{t1,t2}$ = cumulative averaged abnormal return during event window

AAR_t = averaged abnormal return across the companies for period t

3.3.8. Heteroskedasticity and Dependence

The fact that the abnormal return estimators are not independent or the absence of identical variance will generate problems in hypothesis testing. Most of the time, the abnormal return estimators fall into following conditions: (1) they are cross-sectionally correlated, (2) each individual stock has its unique variances, (3) they are dependent over the periods, and (4) they have even greater variance during the event period compared to the surrounding periods. Such problems can be solved by standardizing the abnormal return by its estimated standard deviation

based on the residual variance (prediction errors) from the estimation period (Binder, 1998). Therefore, formula (3.11) to (3.14) should be re-written as follows.

3.3.9. Standardized Abnormal Return

$$SAR_{it} = \frac{R_{it} - E(R_{it})}{\sigma_{SAR_i}} \quad (3.15)$$

Where: SAR_{it} = standardized abnormal return stock i for period t (usually known as the e_i - in a condition that the value of e_i is different from zero)

R_{it} = actual return stock i for period t

$E(R_{it})$ = expected return stock i for period t

σ_{SAR_i} = standard error or the residual variance (prediction errors) for stock i

3.3.10. Standardized Cumulative Abnormal Return

$$SCAR_{it} = \sum_{t=t1}^{t2} SAR_t \quad (3.16)$$

Where: $SCAR_{it}$ = standardized cumulative average return for stock i for period t

SAR_t = standardized abnormal return across the companies for period t

3.3.11. Standardized Average Abnormal Return

$$SAAR_t = \left(\frac{1}{n} \right) \sum_{i=1}^n SAR_{it} \quad (3.17)$$

Where: $SAAR_t$ = standardized averaged abnormal return across the companies for period t

SAR_{it} = standardized abnormal return stock i for period t

n = number of companies

3.3.12. Standardized Cumulative Averaged Abnormal Return

$$SCAAR_{t1,t2} = \sum_{t=t1}^{t2} SAAR_t \quad (3.18)$$

Where: $SCAAR_{t1,t2}$ = standardized cumulative averaged abnormal return during event window

$SAAR_t$ = standardized averaged abnormal return across the companies for period t

3.3.13. Hypothesis-testing Procedure

Sanders (1990) states the essential steps in conducting a hypothesis-testing procedure; (1) stating the null and alternative hypothesis, (2) selecting the level of significance, (3) determining the test distribution to use, and (4) defining the rejection region. For the purpose of this research, the author employs both standardized and non-standardized methods.

3.3.14. Stating the Null- and Alternative Hypothesis

In order to reach the three objectives mentioned in chapter one, this research is structured with three different hypotheses, presented in the following tables;

Table 3.5 Hypotheses whether Announcements of M&A Produces Abnormal Returns to Stockholders of Acquiring/Surviving Company and Target

	Non-standardized		Standardized
1	$H_0: \mu_{ARt} = 0$ $H_1: \mu_{ARt} \neq 0$	3	$H_0: \mu_{SARt} = 0$ $H_1: \mu_{SARt} \neq 0$
2	$H_0: \mu_{CARt} = 0$ $H_1: \mu_{CARt} \neq 0$	4	$H_0: \mu_{SCARt} = 0$ $H_1: \mu_{SCARt} \neq 0$

Source: Author analysis

Table 3.6 Hypotheses whether Announcements of M&A Produces Abnormal Returns that is not Different from Stockholder of Acquiring/Surviving Company and that of Target

	Non-standardized		Standardized
5	$H_0: \mu_{AR_{Acquirer}} = \mu_{AR_{Target}}$ $H_1: \mu_{AR_{Acquirer}} \neq \mu_{AR_{Target}}$	7	$H_0: \mu_{SAR_{Acquirer}} = \mu_{SAR_{Target}}$ $H_1: \mu_{SAR_{Acquirer}} \neq \mu_{SAR_{Target}}$
6	$H_0: \mu_{CAR_{Acquirer}} = \mu_{CAR_{Target}}$ $H_1: \mu_{CAR_{Acquirer}} \neq \mu_{CAR_{Target}}$	8	$H_0: \mu_{SCAR_{Acquirer}} = \mu_{SCAR_{Target}}$ $H_1: \mu_{SCAR_{Acquirer}} \neq \mu_{SCAR_{Target}}$

Source: Author analysis

Table 3.7 Hypotheses whether there are Differences In Abnormal Returns Earned by Stockholders Of Acquiring/Surviving Company and Target If The M&A Transactions Use Cash Deal or Stock-For-Stock Deal

	Non-standardized		Standardized
9	$H_0: \mu_{AR_{Acquirer-Cash}} = \mu_{AR_{Acquirer-Stock}}$ $H_1: \mu_{AR_{Acquirer-Cash}} \neq \mu_{AR_{Acquirer-Stock}}$	13	$H_0: \mu_{SAR_{Acquirer-Cash}} = \mu_{SAR_{Acquirer-Stock}}$ $H_1: \mu_{SAR_{Acquirer-Cash}} \neq \mu_{SAR_{Acquirer-Stock}}$
10	$H_0: \mu_{AR_{Target-Cash}} = \mu_{AR_{Target-Stock}}$ $H_1: \mu_{AR_{Target-Cash}} \neq \mu_{AR_{Target-Stock}}$	14	$H_0: \mu_{SAR_{Target-Cash}} = \mu_{SAR_{Target-Stock}}$ $H_1: \mu_{SAR_{Target-Cash}} \neq \mu_{SAR_{Target-Stock}}$
11	$H_0: \mu_{CAR_{Acquirer-Cash}} = \mu_{CAR_{Acquirer-Stock}}$ $H_1: \mu_{CAR_{Acquirer-Cash}} \neq \mu_{CAR_{Acquirer-Stock}}$	15	$H_0: \mu_{SCAR_{Acquirer-Cash}} = \mu_{SCAR_{Acquirer-Stock}}$ $H_1: \mu_{SCAR_{Acquirer-Cash}} \neq \mu_{SCAR_{Acquirer-Stock}}$
12	$H_0: \mu_{CAR_{Target-Cash}} = \mu_{CAR_{Target-Stock}}$ $H_1: \mu_{CAR_{Target-Cash}} \neq \mu_{CAR_{Target-Stock}}$	16	$H_0: \mu_{SCAR_{Target-Cash}} = \mu_{SCAR_{Target-Stock}}$ $H_1: \mu_{SCAR_{Target-Cash}} \neq \mu_{SCAR_{Target-Stock}}$

Source: Author analysis

3.3.15. Selecting the Level of Significance

A level of significance (α) or the risk or erroneous rejection used under this research is 5%. As a rule of thumb, the α represents the Type I error, that is the risk that a true hypothesis will be rejected whereas Type II error occurs when a false hypothesis is erroneously accepted as true.

3.3.16. Determining the Test Distribution to Use

This research is going to use one sample t_{test} with two-tailed test to test the significance of both abnormal return and cumulative abnormal return for period I as (1) the standard deviation of the population is unknown and (2) the number of samples is less than 30. The t value is used to determine the rejection and acceptance region of the t distribution depends on the level of significance and the degrees of freedom (which are $n-1$) (Sanders, 1990).

In the t_{test} , abnormal return is compared when they are statistically different from zero which is formulated as follows (Binder, 1998):

$$t = \frac{AAR_t - \mu_{H_0}}{\hat{\sigma}_{AAR_t}} \quad (3.19)$$

Let:

$$\hat{\sigma}_{AAR_t} = \frac{s}{\sqrt{n}} \quad (3.20)$$

Where: AAR_t = average abnormal return across the companies for period t

$\hat{\sigma}_{AAR_t}$ = standard error of samples (i.e. abnormal return stock for period t)

$\mu_{H_0} = 0$

s = standard deviation of AAR_t

\sqrt{n} = number of samples

3.3.17. Defining the Rejection Region

If the probability value (p -value) is less than the pre-determined significance level then it falls into rejection area. Thus, the null hypothesis is rejected and consequently the alternative hypothesis is accepted. The t_{test} for cumulative abnormal return is calculated in the same fashion.

CHAPTER 4

ANALYSIS AND DISCUSSIONS

4.1. Analysis on the Expected Return Model

The author applies the Analyses ToolPak embedded in the Microsoft Excel 2007 to perform regression analysis to obtain the Single Index Market Model (SIMM). Below is the summary of the expected model for qualified samples. Please refer to Appendix 1 for the Overall Fit of the Regression Line and Statistical Significance.

Table 4.1 Summary of the SIMM

	Company	Ticker	Single Index Market Model	F-Stat	Significance
Acquiring/Surviving Company					
1	PT Bank CIC International	Tbk BCIC	$E(BCIC) = -0.0015 + 0.7706 RJCI$	20.6572	•
2	PT Bakrie and Brothers	Tbk BNBR	$E(BNBR) = 0.0037 + 1.6250 RJCI$	16.3826	•
3	PT Kalbe Farma	Tbk KLBF	$E(KLBF) = 0.0017 + 1.1106 RJCI$	89.7978	•
4	PT Bumi Resources	Tbk BUMI*	$E(BUMI) = -0.0006 + 0.6349 RJCI$	67.0978	•
5	PT Ades Waters Indonesia	Tbk ADES	$E(ADES) = -0.0011 + 0.8074 RJCI$	21.5832	•
6	PT Bumi Resources	Tbk BUMI**	$E(BUMI) = 0.0054 + 1.4390 RJCI$	236.3614	•
7	PT Bank Niaga	Tbk BNGA	$E(BNGA) = 0.0002 + 1.1480 RJCI$	237.7338	•
8	PT Barito Pacific	Tbk BRPT	$E(BRPT) = 0.0039 + 1.5111 RJCI$	83.4119	•
9	PT Bentoel International Investama	Tbk RMBA	$E(RMBA) = -0.0010 + 0.6232 RJCI$	58.9740	•
10	PT Bank Rakyat Indonesia Persero	Tbk BBRI	$E(BBRI) = -0.0003 + 1.2280 RJCI$	284.3488	•
Target					
11	PT Millennium Pharmacon International	Tbk SDPC	$E(SDPC) = 0.0016 + 0.7084 RJCI$	6.5148	•
12	PT Hero Supermarket	Tbk HERO	$E(HERO) = 0.0040 + 0.0045 RJCI$	0.0006	
13	PT Dankos Laboratories	Tbk DNKS	$E(DNKS) = 0.0014 + 0.6277 RJCI$	30.2900	•
14	PT Enseval	Tbk EPMT	$E(EMPT) = 0.0009 + 1.0373 RJCI$	58.5485	•
15	PT Hanjaya Mandala Sampoerna	Tbk HMSP	$E(HMSP) = 0.0011 + 0.7011 RJCI$	47.7282	•
16	PT Indocement Tunggul Prakarsa	Tbk INTP	$E(INTP) = 0.0005 + 1.6539 RJCI$	212.5182	•
17	PT Sari Husada	Tbk SHDA	$E(SHDA) = 0.0015 + 0.3708 RJCI$	6.2957	•
18	PT Energi Mega Persada	Tbk ENRG	$E(ENRG) = -0.0009 + 0.6158 RJCI$	48.0153	•
19	PT Perusahaan Perkebunan London Sumatra Indonesia	Tbk LSIP	$E(LSIP) = 0.0009 + 0.8444 RJCI$	108.6662	•
20	PT Sinar Mas Agro Resources and Technology	Tbk SMAR	$E(SMAR) = 0.0029 + 0.2342 RJCI$	6.0720	•
21	PT Bank Lippo	Tbk LPBN	$E(LPBN) = 0.0016 + 0.4806 RJCI$	32.5354	•
22	PT Bank Internasional Indonesia	Tbk BNII	$E(BNII) = 0.0014 + 0.8822 RJCI$	100.2596	•
23	PT Mahaka Media	Tbk ABBA	$E(ABBA) = 0.0012 + 0.4373 RJCI$	4.6740	•
24	PT Indosat	Tbk ISAT	$E(ISAT) = 0.0003 + 0.8583 RJCI$	114.5266	•
25	PT Bank Pan Indonesia	Tbk PNBNI	$E(PNBNI) = 0.0021 + 1.0643 RJCI$	164.6514	•
26	PT Bank Ekonomi Raharja	Tbk BAEK	$E(BAEK) = 0.0030 + 0.1675 RJCI$	8.1592	•
27	PT Petrosea	Tbk PTRO	$E(PTRO) = 0.0020 + 0.1897 RJCI$	5.5320	•
28	PT Bayan Resources	Tbk BYAN	$E(BYAN) = 0.0026 + 0.1794 RJCI$	7.5701	•

Note: *For M&A deal in 2006
 ** For M&A deal in 2007
 • Significance at 5%

Source: Author analysis

According to Table 4.1, the SIMM is statistically significant for all companies but PT Hero Supermarket Tbk. (HERO). It indicates that other variables (other than return on index) might have affected HERO stock return.

4.2. Hypothesis I

4.2.1. Empirical Results for Acquiring/Surviving Companies

A two-tail t_{test} with a significance level of 5% is employed in order to see the significance of the abnormal returns and cumulative abnormal returns for stockholders of the Acquiring/Surviving company. The empirical results of the test are summarized in following tables;

Table 4.2 Empirical Result of the Significance Test for Acquiring/Surviving Company According to Non-standardized- and Standardized Abnormal Returns

Event Window	Non-Standardized Abnormal Return				Standardized Abnormal Return				Event Window
	Average (AAR)	Std. Dev	t -stat	Significance	Average (SAAR)	Std. Dev	t -stat	Significance	
t-10	0.0041	0.0557	0.2349	Do not Reject H0	0.0513	1.9961	0.0813	Do not Reject H0	t-10
t-9	0.0143	0.0990	0.4566	Do not Reject H0	0.1673	2.4673	0.2144	Do not Reject H0	t-9
t-8	0.0082	0.0379	0.6842	Do not Reject H0	0.1238	0.8716	-0.4493	Do not Reject H0	t-8
t-7	-0.0032	0.0582	-0.1740	Do not Reject H0	-0.1953	1.1234	-0.5497	Do not Reject H0	t-7
t-6	0.0137	0.0379	1.1412	Do not Reject H0	0.5460	1.2155	-1.4205	Do not Reject H0	t-6
t-5	0.0032	0.0303	0.3376	Do not Reject H0	0.0970	1.0881	0.2820	Do not Reject H0	t-5
t-4	-0.0116	0.0391	-0.9416	Do not Reject H0	-0.0633	0.9926	-0.2016	Do not Reject H0	t-4
t-3	-0.0021	0.0644	-0.1031	Do not Reject H0	0.2747	1.3044	0.6661	Do not Reject H0	t-3
t-2	0.0019	0.0557	0.1108	Do not Reject H0	-0.2640	1.1104	-0.7519	Do not Reject H0	t-2
t-1	0.0024	0.0136	0.5592	Do not Reject H0	0.0715	0.3611	0.6262	Do not Reject H0	t-1
t0	0.0097	0.0365	0.8440	Do not Reject H0	0.4744	1.2146	1.2351	Do not Reject H0	t0
t+1	0.0064	0.0416	0.4866	Do not Reject H0	0.0743	1.0037	0.2342	Do not Reject H0	t+1
t+2	-0.0161	0.0427	-1.1906	Do not Reject H0	-0.4282	1.2127	-1.1166	Do not Reject H0	t+2
t+3	-0.0117	0.0185	-1.9981	Do not Reject H0	-0.3294	0.5448	-1.9122	Do not Reject H0	t+3
t+4	0.0112	0.0309	1.1525	Do not Reject H0	0.2355	0.7784	0.9567	Do not Reject H0	t+4
t+5	-0.0230	0.0778	-0.9342	Do not Reject H0	-0.1897	0.9583	-0.6260	Do not Reject H0	t+5
t+6	0.0204	0.0457	1.4092	Do not Reject H0	-0.2918	0.7029	1.3125	Do not Reject H0	t+6
t+7	-0.0073	0.0194	-1.1966	Do not Reject H0	-0.2494	0.5097	-1.5472	Do not Reject H0	t+7
t+8	-0.0031	0.0114	-0.8644	Do not Reject H0	-0.1115	0.4807	-0.7338	Do not Reject H0	t+8
t+9	0.0008	0.0254	0.0933	Do not Reject H0	0.0654	0.7592	0.2724	Do not Reject H0	t+9
t+10	-0.0047	0.0178	-0.8378	Do not Reject H0	0.0151	0.5070	0.0940	Do not Reject H0	t+10
t+11	-0.0016	0.0142	-0.3616	Do not Reject H0	-0.0844	0.5358	-0.4983	Do not Reject H0	t+11
t+12	0.0050	0.0425	0.3744	Do not Reject H0	-0.0316	0.8588	-0.1165	Do not Reject H0	t+12
t+13	-0.0064	0.0129	-1.5616	Do not Reject H0	-0.1506	0.5409	-0.8807	Do not Reject H0	t+13
t+14	-0.0318	0.0452	-2.2271	Do not Reject H0	-0.7405	0.8532	-2.7443	*	t+14
t+15	-0.0003	0.0108	-0.0875	Do not Reject H0	0.0344	0.3977	0.2739	Do not Reject H0	t+15
t+16	-0.0023	0.0257	-0.2904	Do not Reject H0	0.0900	0.8241	0.3456	Do not Reject H0	t+16
t+17	0.0136	0.0324	1.3273	Do not Reject H0	0.6501	1.4376	1.4300	Do not Reject H0	t+17
t+18	-0.0064	0.0178	-1.1459	Do not Reject H0	-0.3127	0.6900	-1.4332	Do not Reject H0	t+18
t+19	-0.0072	0.0162	-1.3980	Do not Reject H0	-0.1435	0.5794	-0.7834	Do not Reject H0	t+19
t+20	-0.0120	0.0212	-1.7969	Do not Reject H0	-0.4089	0.8551	-1.5123	Do not Reject H0	t+20
t+21	-0.0108	0.0262	-1.3107	Do not Reject H0	-0.2716	0.8435	-1.0183	Do not Reject H0	t+21
t+22	0.0150	0.0235	2.0258	Do not Reject H0	0.3903	0.7556	1.6332	Do not Reject H0	t+22
t+23	-0.0165	0.0444	-1.1755	Do not Reject H0	-0.1503	0.9074	-0.5237	Do not Reject H0	t+23
t+24	0.0165	0.0446	1.1678	Do not Reject H0	0.1796	0.8676	0.6547	Do not Reject H0	t+24
t+25	0.0045	0.0416	0.3391	Do not Reject H0	0.1443	1.4455	0.3158	Do not Reject H0	t+25
t+26	0.0106	0.0144	2.3246	**	0.3987	0.7118	1.7714	Do not Reject H0	t+26
t+27	-0.0010	0.0188	-0.1681	Do not Reject H0	-0.0982	0.6299	-0.4932	Do not Reject H0	t+27
t+28	-0.0122	0.0188	-2.0512	Do not Reject H0	-0.5275	0.7491	-2.2270	Do not Reject H0	t+28
t+29	0.0117	0.0248	1.4961	Do not Reject H0	0.3758	0.8330	1.4266	Do not Reject H0	t+29

Table 4.2 Empirical Result of the Significance Test for Acquiring/Surviving Company According to Non-standardized- and Standardized Abnormal Returns (continued)

Event Window	Non-Standardized Abnormal Return				Standardized Abnormal Return				Event Window
	Average (AAR)	Std. Dev	t-stat	Significance	Average (SAAR)	Std. Dev	t-stat	Significance	
t+30	-0.0021	0.0235	-0.2799	Do not Reject H0	-0.0511	0.7732	-0.2090	Do not Reject H0	t+30
t+31	-0.0124	0.0375	-1.0410	Do not Reject H0	-0.1805	1.0882	-0.5245	Do not Reject H0	t+31
t+32	-0.0066	0.0579	-0.3616	Do not Reject H0	0.0685	0.9826	0.2206	Do not Reject H0	t+32
t+33	0.0247	0.0485	1.6134	Do not Reject H0	0.5817	1.0669	1.7241	Do not Reject H0	t+33
t+34	-0.0050	0.0301	-0.5270	Do not Reject H0	-0.1280	1.0383	-0.3900	Do not Reject H0	t+34
t+35	0.0021	0.0133	0.5046	Do not Reject H0	0.0814	0.4566	0.5636	Do not Reject H0	t+35
t+36	-0.0094	0.0177	-1.6820	Do not Reject H0	-0.2957	0.5010	-1.8664	Do not Reject H0	t+36
t+37	-0.0161	0.0166	-3.0596	*	-0.4564	0.6012	-2.4007	**	t+37
t+38	-0.0101	0.0157	-2.0297	Do not Reject H0	-0.3262	0.5806	-1.7766	Do not Reject H0	t+38
t+39	-0.0171	0.0203	-2.6697	**	-0.4939	0.5700	-2.7399	*	t+39
t+40	0.0095	0.0319	0.9429	Do not Reject H0	0.1771	0.6477	0.8645	Do not Reject H0	t+40
t+41	0.0139	0.0265	1.6626	Do not Reject H0	0.5195	1.2495	1.3147	Do not Reject H0	t+41
t+42	-0.0060	0.0218	-0.8673	Do not Reject H0	-0.1589	0.9163	-0.5485	Do not Reject H0	t+42
t+43	-0.0161	0.0142	-3.5832	*	-0.5822	0.6039	-3.0486	*	t+43
t+44	0.0029	0.0241	0.3789	Do not Reject H0	0.0617	0.7317	0.2664	Do not Reject H0	t+44
t+45	0.0086	0.0459	0.5907	Do not Reject H0	0.0790	0.9237	0.2704	Do not Reject H0	t+45
t+46	-0.0284	0.0400	-2.2442	Do not Reject H0	-0.6831	0.8811	-2.4518	**	t+46
t+47	0.0063	0.0216	0.9288	Do not Reject H0	0.1534	0.7690	0.6308	Do not Reject H0	t+47
t+48	-0.0162	0.0271	-1.8877	Do not Reject H0	-0.5065	0.9068	-1.7662	Do not Reject H0	t+48
t+49	-0.0062	0.0232	-0.8394	Do not Reject H0	-0.1274	0.8639	-0.4664	Do not Reject H0	t+49
t+50	-0.0221	0.0392	-1.7818	Do not Reject H0	-0.4474	0.5517	-2.5645	**	t+50
t+51	-0.0040	0.0357	-0.3557	Do not Reject H0	-0.2220	1.0200	-0.6883	Do not Reject H0	t+51
t+52	0.0263	0.0604	1.3766	Do not Reject H0	0.5087	1.2928	1.2443	Do not Reject H0	t+52
t+53	-0.0054	0.0216	-0.7923	Do not Reject H0	-0.1465	0.8417	-0.5506	Do not Reject H0	t+53
t+54	-0.0042	0.0562	-0.2386	Do not Reject H0	0.0280	1.2950	0.0684	Do not Reject H0	t+54
t+55	-0.0015	0.0228	-0.2027	Do not Reject H0	-0.0155	0.6798	-0.0723	Do not Reject H0	t+55
t+56	-0.0032	0.0251	-0.3996	Do not Reject H0	-0.0646	0.7153	-0.2855	Do not Reject H0	t+56
t+57	0.0025	0.0290	0.2755	Do not Reject H0	0.1493	0.9061	0.5211	Do not Reject H0	t+57
t+58	-0.0038	0.0379	-0.3216	Do not Reject H0	0.0598	1.0733	0.1761	Do not Reject H0	t+58
t+59	-0.0182	0.0474	-1.2166	Do not Reject H0	-0.4674	0.8403	-1.7591	Do not Reject H0	t+59
t+60	0.0176	0.0452	1.2345	Do not Reject H0	0.2022	0.6765	0.9451	Do not Reject H0	t+60

Note: * Significance at $\alpha = 1\%$

** Significance at $\alpha = 5\%$

Source: Author analysis

Table 4.3 Empirical Result of the Significance Test for Acquiring/Surviving Company According to Non-standardized- and Standardized Cumulative Abnormal Returns

Event Window	Non-Standardized Cumulative Abnormal Return				Standardized Cumulative Abnormal Return				Event Window
	Average (CAAR)	Std. Dev	t-stat	Significance	Average (SCAAR)	Std. Dev	t-stat	Significance	
t-10	0.0041	0.0557	0.2349	Do not Reject H0	0.0513	1.9961	0.0813	Do not Reject H0	t-10
t-9	0.0184	0.1028	0.5670	Do not Reject H0	0.2186	2.7300	0.2532	Do not Reject H0	t-9
t-8	0.0266	0.0988	0.8522	Do not Reject H0	0.3424	2.7270	0.3971	Do not Reject H0	t-8
t-7	0.0234	0.0767	0.9649	Do not Reject H0	0.1471	2.2854	0.2036	Do not Reject H0	t-7

Table 4.3 Empirical Result of the Significance Test for Acquiring/Surviving Company According to Non-standardized- and Standardized Cumulative Abnormal Returns (continued)

Non-Standardized Cumulative Abnormal Return					Standardized Cumulative Abnormal Return				
Event Window	Average (CAAR)	Std. Dev	t-stat	Significance	Average (SCAAR)	Std. Dev	t-stat	Significance	Event Window
t-6	0.0371	0.0717	1.6352	Do not Reject H0	0.6931	2.4675	0.8883	Do not Reject H0	t-6
t-5	0.0404	0.0591	2.1577	Do not Reject H0	0.7902	1.8312	1.3645	Do not Reject H0	t-5
t-4	0.0287	0.0369	2.4600	**	0.7269	1.2304	1.8681	Do not Reject H0	t-4
t-3	0.0266	0.0780	1.0806	Do not Reject H0	1.0016	1.7981	1.7616	Do not Reject H0	t-3
t-2	0.0286	0.0438	2.0610	Do not Reject H0	0.7376	1.2172	1.9163	Do not Reject H0	t-2
t-1	0.0310	0.0393	2.4929	**	0.8091	1.1448	2.2349	Do not Reject H0	t-1
t0	0.0407	0.0429	2.9981	*	1.2835	1.3904	2.9192	*	t0
t+1	0.0471	0.0501	2.9708	*	1.3578	1.8078	2.3751	**	t+1
t+2	0.0310	0.0562	1.7433	Do not Reject H0	0.9296	2.1658	1.3573	Do not Reject H0	t+2
t+3	0.0193	0.0585	1.0414	Do not Reject H0	0.6002	2.3265	0.8157	Do not Reject H0	t+3
t+4	0.0305	0.0459	2.1049	Do not Reject H0	0.8357	1.7532	1.5073	Do not Reject H0	t+4
t+5	0.0075	0.0857	0.2778	Do not Reject H0	0.6460	2.1979	0.9294	Do not Reject H0	t+5
t+6	0.0279	0.0655	1.3460	Do not Reject H0	0.9377	2.3767	1.2477	Do not Reject H0	t+6
t+7	0.0206	0.0634	1.0252	Do not Reject H0	0.6883	2.2595	0.9634	Do not Reject H0	t+7
t+8	0.0175	0.0634	0.8701	Do not Reject H0	0.5768	2.2418	0.8136	Do not Reject H0	t+8
t+9	0.0182	0.0655	0.8790	Do not Reject H0	0.6422	2.1517	0.9439	Do not Reject H0	t+9
t+10	0.0135	0.0714	0.5981	Do not Reject H0	0.6573	2.1646	0.9603	Do not Reject H0	t+10
t+11	0.0119	0.0795	0.4733	Do not Reject H0	0.5729	2.4013	0.7544	Do not Reject H0	t+11
t+12	0.0169	0.0733	0.7315	Do not Reject H0	0.5412	2.5981	0.6587	Do not Reject H0	t+12
t+13	0.0106	0.0671	0.4975	Do not Reject H0	0.3906	2.1886	0.5643	Do not Reject H0	t+13
t+14	-0.0213	0.0887	-0.7590	Do not Reject H0	-0.3499	2.4216	-0.4569	Do not Reject H0	t+14
t+15	-0.0216	0.0930	-0.7332	Do not Reject H0	-0.3154	2.4928	-0.4002	Do not Reject H0	t+15
t+16	-0.0239	0.0943	-0.8014	Do not Reject H0	-0.2254	2.4858	-0.2868	Do not Reject H0	t+16
t+17	-0.0103	0.1079	-0.3012	Do not Reject H0	0.4247	2.8008	0.4795	Do not Reject H0	t+17
t+18	-0.0167	0.1032	-0.5119	Do not Reject H0	0.1120	2.6980	0.1312	Do not Reject H0	t+18
t+19	-0.0239	0.1066	-0.7082	Do not Reject H0	-0.0315	2.4992	-0.0399	Do not Reject H0	t+19
t+20	-0.0359	0.1031	-1.1002	Do not Reject H0	-0.4405	2.0358	-0.6842	Do not Reject H0	t+20
t+21	-0.0467	0.1102	-1.3412	Do not Reject H0	-0.7121	1.9649	-1.1460	Do not Reject H0	t+21
t+22	-0.0317	0.1101	-0.9095	Do not Reject H0	-0.3218	2.1788	-0.4671	Do not Reject H0	t+22
t+23	-0.0482	0.1448	-1.0521	Do not Reject H0	-0.4721	2.4560	-0.6079	Do not Reject H0	t+23
t+22	-0.0317	0.1101	-0.9095	Do not Reject H0	-0.3218	2.1788	-0.4671	Do not Reject H0	t+22
t+23	-0.0482	0.1448	-1.0521	Do not Reject H0	-0.4721	2.4560	-0.6079	Do not Reject H0	t+23
t+24	-0.0317	0.1134	-0.8847	Do not Reject H0	-0.2925	2.4088	-0.3840	Do not Reject H0	t+24
t+25	-0.0273	0.1257	-0.6859	Do not Reject H0	-0.1482	3.0229	-0.1550	Do not Reject H0	t+25
t+26	-0.0167	0.1176	-0.4489	Do not Reject H0	0.2506	2.6259	0.3018	Do not Reject H0	t+26
t+27	-0.0177	0.1118	-0.5008	Do not Reject H0	0.1523	2.6159	0.1841	Do not Reject H0	t+27
t+28	-0.0299	0.1126	-0.8386	Do not Reject H0	-0.3752	2.7841	-0.4262	Do not Reject H0	t+28
t+29	-0.0181	0.1117	-0.5138	Do not Reject H0	0.0006	2.8130	0.0006	Do not Reject H0	t+29
t+30	-0.0202	0.1219	-0.5248	Do not Reject H0	-0.0505	3.2298	-0.0495	Do not Reject H0	t+30
t+31	-0.0326	0.1351	-0.7631	Do not Reject H0	-0.2310	3.3450	-0.2184	Do not Reject H0	t+31
t+32	-0.0392	0.1686	-0.7353	Do not Reject H0	-0.1625	3.5896	-0.1431	Do not Reject H0	t+32
t+33	-0.0145	0.1360	-0.3360	Do not Reject H0	0.4192	3.2598	0.4067	Do not Reject H0	t+33
t+34	-0.0195	0.1370	-0.4496	Do not Reject H0	0.2912	3.3602	0.2740	Do not Reject H0	t+34
t+35	-0.0174	0.1409	-0.3899	Do not Reject H0	0.3726	3.3716	0.3495	Do not Reject H0	t+35
t+36	-0.0268	0.1411	-0.6002	Do not Reject H0	0.0769	3.4403	0.0707	Do not Reject H0	t+36
t+37	-0.0428	0.1422	-0.9530	Do not Reject H0	-0.3795	3.4305	-0.3498	Do not Reject H0	t+37
t+38	-0.0529	0.1531	-1.0933	Do not Reject H0	-0.7057	3.8423	-0.5808	Do not Reject H0	t+38
t+39	-0.0700	0.1555	-1.4237	Do not Reject H0	-1.1995	3.8299	-0.9904	Do not Reject H0	t+39
t+40	-0.0605	0.1382	-1.3844	Do not Reject H0	-1.0225	3.4120	-0.9476	Do not Reject H0	t+40
t+41	-0.0466	0.1384	-1.0637	Do not Reject H0	-0.5030	3.2654	-0.4871	Do not Reject H0	t+41
t+42	-0.0525	0.1537	-1.0806	Do not Reject H0	-0.6619	3.6999	-0.5657	Do not Reject H0	t+42
t+43	-0.0687	0.1534	-1.4152	Do not Reject H0	-1.2441	3.9285	-1.0015	Do not Reject H0	t+43

Table 4.3 Empirical Result of the Significance Test for Acquiring/Surviving Company According to Non-standardized- and Standardized Cumulative Abnormal Returns (continued)

Non-Standardized Cumulative Abnormal Return					Standardized Cumulative Abnormal Return				
Event Window	Average (CAAR)	Std. Dev	t-stat	Significance	Average (SCAAR)	Std. Dev	t-stat	Significance	Event Window
t+44	-0.0658	0.1593	-1.3056	Do not Reject H0	-1.1825	4.1206	-0.9075	Do not Reject H0	t+44
t+45	-0.0572	0.1506	-1.2005	Do not Reject H0	-1.1035	4.4227	-0.7890	Do not Reject H0	t+45
t+46	-0.0856	0.1719	-1.5749	Do not Reject H0	-1.7866	4.5577	-1.2396	Do not Reject H0	t+46
t+47	-0.0793	0.1623	-1.5440	Do not Reject H0	-1.6332	4.2884	-1.2043	Do not Reject H0	t+47
t+48	-0.0954	0.1668	-1.8086	Do not Reject H0	-2.1397	4.6380	-1.4589	Do not Reject H0	t+48
t+49	-0.1016	0.1699	-1.8908	Do not Reject H0	-2.2671	4.7824	-1.4991	Do not Reject H0	t+49
t+50	-0.1237	0.1913	-2.0449	Do not Reject H0	-2.7146	4.7522	-1.8064	Do not Reject H0	t+50
t+51	-0.1277	0.1946	-2.0756	Do not Reject H0	-2.9366	4.7023	-1.9748	Do not Reject H0	t+51
t+52	-0.1014	0.1603	-2.0011	Do not Reject H0	-2.4279	4.8366	-1.5874	Do not Reject H0	t+52
t+53	-0.1068	0.1497	-2.2560	Do not Reject H0	-2.5744	4.1175	-1.9772	Do not Reject H0	t+53
t+54	-0.1111	0.1690	-2.0781	Do not Reject H0	-2.5464	4.3395	-1.8556	Do not Reject H0	t+54
t+55	-0.1125	0.1748	-2.0358	Do not Reject H0	-2.5619	4.4224	-1.8319	Do not Reject H0	t+55
t+56	-0.1157	0.1676	-2.1829	Do not Reject H0	-2.6265	4.1939	-1.9804	Do not Reject H0	t+56
t+57	-0.1132	0.1750	-2.0447	Do not Reject H0	-2.4772	4.1677	-1.8796	Do not Reject H0	t+57
t+58	-0.1170	0.1950	-1.8974	Do not Reject H0	-2.4174	4.0963	-1.8662	Do not Reject H0	t+58
t+59	-0.1352	0.2075	-2.0616	Do not Reject H0	-2.8849	3.8967	-2.3412	**	t+59
t+60	-0.1176	0.1771	-2.1006	Do not Reject H0	-2.6827	3.7123	-2.2852	**	t+60

Note: * Significance at $t_{\alpha} = 1\%$

** Significance at $t_{\alpha} = 5\%$

Source: Author analysis

4.2.2. Analysis for Acquiring/Surviving Companies

On average, the stockholders of Acquiring/Surviving companies experienced a volatile non-standardized abnormal returns across the event window $[-10,60]$ ranging from as low as -0.0318 on t_{+14} to 0.0263 on t_{+52} (Figure 4.1). The stockholders did not receive significant abnormal returns prior to and upon the announcement of M&A as published publicly (on t_0). However, the stockholders started receiving significant abnormal returns – rejecting H_0 – only on (1) t_{+26} by average (AAR) of 0.0106 at $t_{\alpha} = 5\%$, (2) t_{+37} by AAR of -0.0161 at $t_{\alpha} = 1\%$, (3) t_{+39} by AAR of -0.0171 at $t_{\alpha} = 5\%$, and (4) t_{+43} by AAR of -0.0161 at $t_{\alpha} = 1\%$ (Table 4.2, Left-hand side).

As far as cumulative average abnormal returns (CAARs) are concerned, market reacted negatively – in the long run - towards the news starting from t_{+1} onwards as illustrated on Figure 4.2. Despite the downtrend, the significance test reveals that the stockholders obtained positive significant cumulative abnormal returns (CARs) – rejecting H_0 – prior to and post announcement of M&A with following details; (1) on $t_{.4}$ by average (CAAR) of 0.0287 at $t_{\alpha} = 5\%$, (2) on t_{-1} by

0.0310 at $t_\alpha = 5\%$, (3) on t_0 by CAAR of 0.0407 at $t_\alpha = 1\%$, and (4) on t_{+1} by CAAR of 0.0471 at $t_\alpha = 1\%$ while followed by non-significant adjustments shortly after (Table 4.3, Left hand-side).

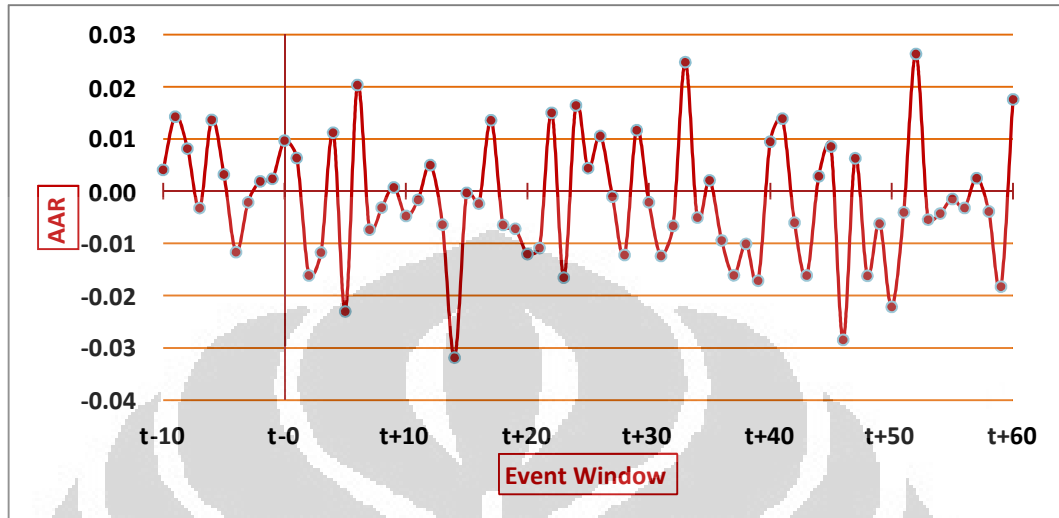


Figure 4.1 Average Abnormal Return of Acquiring/Surviving Company

Source: Author analysis

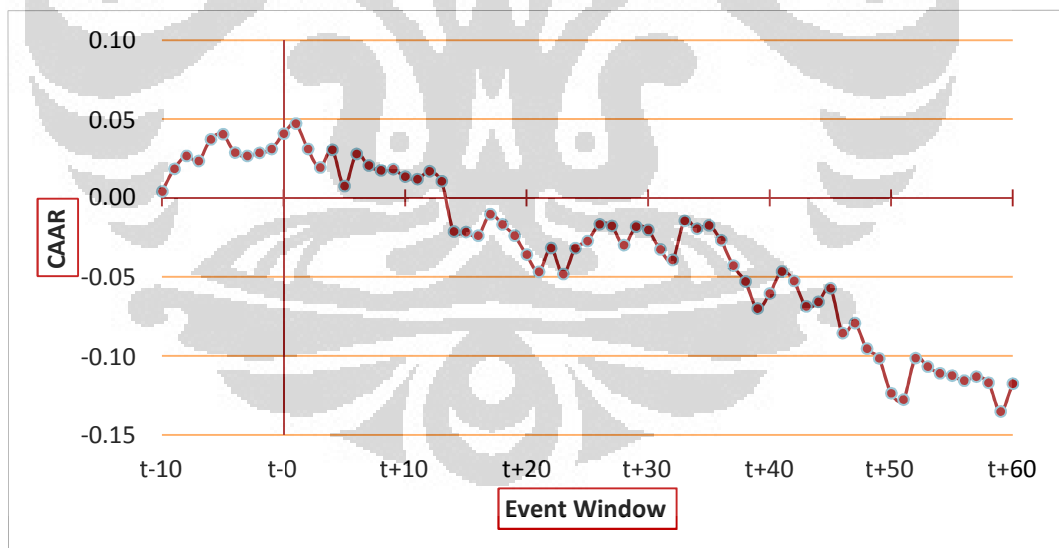


Figure 4.2 Cumulative Average Abnormal Return of Acquiring/Surviving Company

Source: Author analysis

If the AR was standardized, then the stockholders experienced positive abnormal returns (SARs) few days prior to and upon the announcement of M&A.

In addition, the stockholders experienced the same fashion compare to non-standardized *AR* in the sense that the average abnormal returns (*AARs*) fluctuated across the event window (Figure 4.3). The stockholders of Acquiring/Surviving company started obtaining significant negative *SAR* (rejection of H_0) since t_{+14} onwards with following details; on (1) t_{+14} by average (*SAAR*) of -0.7405 at $t_\alpha = 1\%$, (2) t_{+37} by *SAAR* of -0.4564 at $t_\alpha = 5\%$, (3) t_{+39} by *SAAR* of -0.4939 at $t_\alpha = 1\%$, (4) t_{+43} by *SAAR* of -0.5822 at $t_\alpha = 1\%$, (5) t_{+46} by *SAAR* of -0.6831 at $t_\alpha = 5\%$, (6) t_{+50} by *SAAR* of -0.4474 at $t_\alpha = 5\%$ (Table 4.2, Right hand-side).

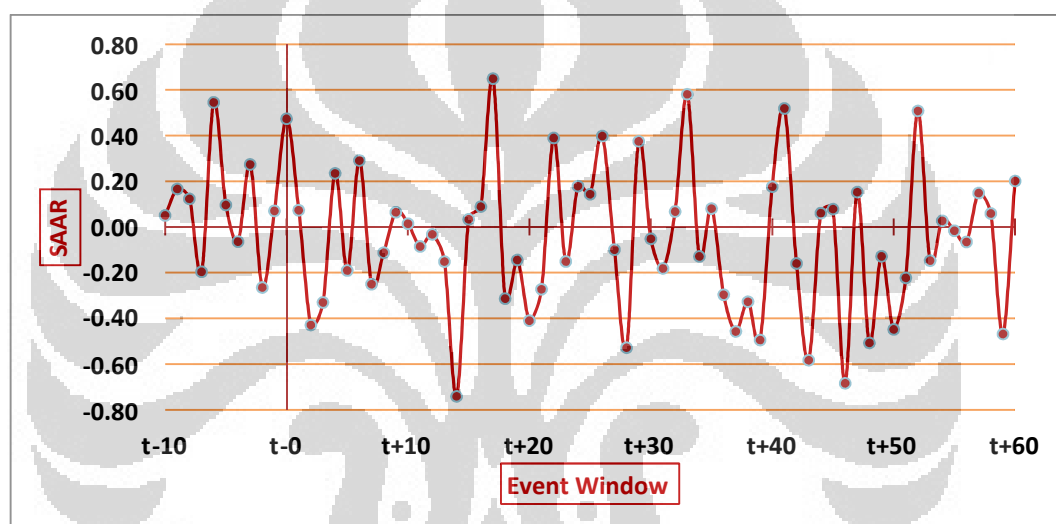


Figure 4.3 Standardized Average Abnormal Return of Acquiring/Surviving Company

Source: Author analysis

Market also reacted negatively in the long run towards the announced M&A plan starting from t_0 onwards in terms of standardized cumulative average abnormal return (*SCAAR*) (Figure 4.4). The stockholders of Acquiring/Surviving company experienced an increasing *SCAAR* by 0.7578 from t_{-10} (0.0513) to t_{-1} (0.8091) but was not statistically significant. Then the stockholders obtained significant positive *SCARs* – rejecting H_0 – only on (1) t_0 by average (*SCAAR*) of 1.2835 at $t_\alpha = 1\%$, (2) t_{+1} by *SCAAR* of 1.3578 at $t_\alpha = 5\%$. Despite the significant positive *SCARs*, the stockholders also started obtaining negative *SCARs* – rejecting H_0 – starting on t_{+14} of -0.3499 and kept decreasing throughout the rest

of event window until it reached significant negative *SCARs* on (1) t_{+59} by *SCAAR* of -2.8849 at $t_{\alpha} = 5\%$, and on (2) t_{+60} by *SCAAR* of -2.6827 at $t_{\alpha} = 5\%$ (Table 4.3, Right hand-side).

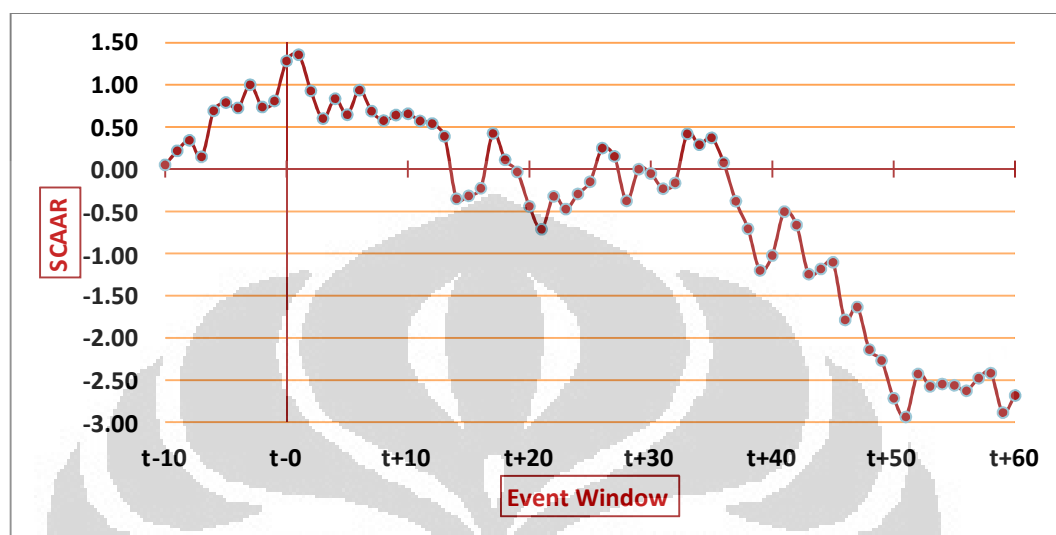


Figure 4.4 Standardized Cumulative Average Abnormal Return of Acquiring/Surviving Company

Source: Author analysis

In conclusion, significant negative *ARs* occurred only for three days post announcement (i.e. t_{+37} , t_{+39} , t_{+43}) but when the *ARs* were standardized (*SARs*), stockholders of Acquiring/Surviving company obtained more significant negative *ARs* across the event window (i.e. t_{+37} , t_{+39} , t_{+43} , t_{+46} and t_{+50}). The measurement of *CAR* shows that market overreacted towards the announcement of M&A and H_0 should only be rejected on followings; a few days prior to announcement (on t_{-4} and on t_{-1}), upon the announcement (t_0) and post announcement (t_{+1}). When the *CAR* was standardized (*SCAR*), then the stockholders overreacted towards the news as it was reflected on significant positive *SCARs* only on t_0 and t_{+1} before experiencing sharp declines shortly after and finally reached significant negative *SCAARs* on t_{+59} (-2.8849) and t_{+60} (-2.6827) so that H_0 should be rejected accordingly.

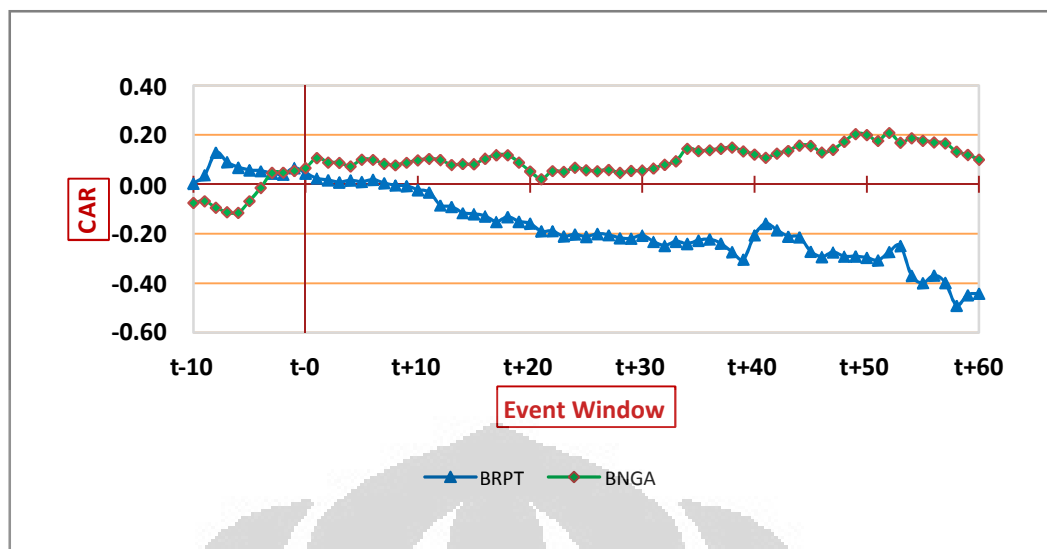


Figure 4.5 Outliers Snapshot for Acquiring Company based on Cumulative Abnormal Returns

Source: Author analysis

4.2.3. Empirical Results for Target

A two-tail t_{test} with a significance level of 5% is employed in order to see the significance of the abnormal returns and cumulative abnormal returns for stockholders of Target. The empirical results of the test are summarized in following tables;

Table 4.4 Empirical Result of the Significance Test for Target According to Non-standardized- and Standardized Abnormal Returns

Event Window	Non-Standardized Abnormal Return				Standardized Abnormal Return				Event Window
	Average (AAR)	Std. Dev	t -stat	Significance	Average (SAAR)	Std. Dev	t -stat	Significance	
t-10	-0.0012	0.0284	-0.1801	Do not Reject H0	-0.0803	0.8451	-0.4033	Do not Reject H0	t-10
t-9	0.0014	0.0260	0.2351	Do not Reject H0	0.0159	0.7630	0.0882	Do not Reject H0	t-9
t-8	0.0064	0.0550	0.4892	Do not Reject H0	0.4158	1.2536	1.4071	Do not Reject H0	t-8
t-7	0.0007	0.0283	0.1090	Do not Reject H0	0.0032	0.9941	0.0137	Do not Reject H0	t-7
t-6	-0.0039	0.0169	-0.9855	Do not Reject H0	-0.1576	0.5404	-1.2372	Do not Reject H0	t-6
t-5	0.0066	0.0236	1.1804	Do not Reject H0	0.2609	0.9455	1.1707	Do not Reject H0	t-5
t-4	-0.0041	0.0267	-0.6449	Do not Reject H0	-0.0740	0.9690	-0.3241	Do not Reject H0	t-4
t-3	0.0077	0.0241	1.3571	Do not Reject H0	0.2210	0.8060	1.1632	Do not Reject H0	t-3
t-2	0.0053	0.0351	0.6461	Do not Reject H0	0.1900	1.1043	0.7301	Do not Reject H0	t-2
t-1	0.0098	0.0379	1.0982	Do not Reject H0	0.4476	1.3289	1.4289	Do not Reject H0	t-1
t0	0.0567	0.1040	2.3138	**	1.7359	3.2549	2.2627	**	t0
t+1	-0.0027	0.0484	-0.2325	Do not Reject H0	-0.0068	1.2640	-0.0229	Do not Reject H0	t+1
t+2	0.0010	0.0260	0.1623	Do not Reject H0	-0.0917	0.8194	-0.4747	Do not Reject H0	t+2
t+3	0.0041	0.0457	0.3819	Do not Reject H0	-0.0843	1.0168	-0.3516	Do not Reject H0	t+3
t+4	-0.0034	0.0135	-1.0658	Do not Reject H0	-0.0855	0.4370	-0.8296	Do not Reject H0	t+4
t+5	0.0051	0.0257	0.8352	Do not Reject H0	0.2958	0.8474	1.4809	Do not Reject H0	t+5
t+6	-0.0049	0.0251	-0.8309	Do not Reject H0	-0.2854	0.8425	-1.4370	Do not Reject H0	t+6
t+7	0.0003	0.0226	0.0563	Do not Reject H0	0.1028	0.7743	0.5635	Do not Reject H0	t+7
t+8	-0.0009	0.0224	-0.1644	Do not Reject H0	-0.0373	0.7052	-0.2243	Do not Reject H0	t+8

Table 4.4 Empirical Result of the Significance Test for Target According to Non-standardized- and Standardized Abnormal Returns (continued)

Event Window	Non-Standardized Abnormal Return				Standardized Abnormal Return				Event Window
	Average (AAR)	Std. Dev	t-stat	Significance	Average (SAAR)	Std. Dev	t-stat	Significance	
t+9	0.0085	0.0435	0.8274	Do not Reject H0	0.1615	0.9528	0.7190	Do not Reject H0	t+9
t+10	-0.0011	0.0263	-0.1712	Do not Reject H0	0.0660	0.6529	0.4288	Do not Reject H0	t+10
t+11	0.0029	0.0242	0.5002	Do not Reject H0	0.0615	0.8769	0.2976	Do not Reject H0	t+11
t+12	-0.0025	0.0236	-0.4524	Do not Reject H0	-0.1142	0.7947	-0.6099	Do not Reject H0	t+12
t+13	0.0008	0.0275	0.1190	Do not Reject H0	0.0833	0.8441	0.4187	Do not Reject H0	t+13
t+14	-0.0002	0.0186	-0.0557	Do not Reject H0	-0.0292	0.6836	-0.1813	Do not Reject H0	t+14
t+15	-0.0058	0.0229	-1.0735	Do not Reject H0	-0.1393	0.7892	-0.7491	Do not Reject H0	t+15
t+16	0.0006	0.0200	0.1247	Do not Reject H0	0.1219	0.6920	0.7475	Do not Reject H0	t+16
t+17	0.0070	0.0382	0.7746	Do not Reject H0	0.2828	1.4714	0.8154	Do not Reject H0	t+17
t+18	0.0005	0.0475	0.0427	Do not Reject H0	0.0934	1.4598	0.2713	Do not Reject H0	t+18
t+19	0.0177	0.0557	1.3496	Do not Reject H0	0.5683	1.8181	1.3263	Do not Reject H0	t+19
t+20	-0.0041	0.0121	-1.4449	Do not Reject H0	-0.2073	0.3456	-2.5448 *		t+20
t+21	0.0023	0.0357	0.2714	Do not Reject H0	0.1288	0.7393	0.7392	Do not Reject H0	t+21
t+22	-0.0014	0.0225	-0.2702	Do not Reject H0	0.1129	0.7275	0.6584	Do not Reject H0	t+22
t+23	0.0012	0.0335	0.1483	Do not Reject H0	-0.1162	0.8263	-0.5966	Do not Reject H0	t+23
t+24	-0.0064	0.0317	-0.8545	Do not Reject H0	-0.0607	0.7373	-0.3493	Do not Reject H0	t+24
t+25	0.0076	0.0476	0.6734	Do not Reject H0	-0.0643	0.9992	-0.2729	Do not Reject H0	t+25
t+26	-0.0043	0.0123	-1.4815	Do not Reject H0	-0.1695	0.4674	-1.5387	Do not Reject H0	t+26
t+27	-0.0036	0.0181	-0.8510	Do not Reject H0	-0.0806	0.6103	-0.5604	Do not Reject H0	t+27
t+28	-0.0116	0.0282	-1.7405	Do not Reject H0	-0.4301	1.1630	-1.5691	Do not Reject H0	t+28
t+29	0.0025	0.0335	0.3190	Do not Reject H0	0.2144	1.2901	0.7052	Do not Reject H0	t+29
t+30	0.0165	0.0458	1.5250	Do not Reject H0	0.3105	0.9741	1.3523	Do not Reject H0	t+30
t+31	-0.0086	0.0348	-1.0546	Do not Reject H0	-0.2304	1.0309	-0.9483	Do not Reject H0	t+31
t+32	-0.0015	0.0315	-0.1991	Do not Reject H0	0.0884	0.8841	0.4242	Do not Reject H0	t+32
t+33	-0.0023	0.0212	-0.4647	Do not Reject H0	-0.1366	0.6592	-0.8789	Do not Reject H0	t+33
t+34	0.0063	0.0230	1.1577	Do not Reject H0	0.2591	0.8605	1.2776	Do not Reject H0	t+34
t+35	-0.0061	0.0192	-1.3419	Do not Reject H0	-0.2243	0.6583	-1.4454	Do not Reject H0	t+35
t+36	0.0055	0.0271	0.8656	Do not Reject H0	0.1938	0.9573	0.8591	Do not Reject H0	t+36
t+37	0.0011	0.0379	0.1232	Do not Reject H0	0.0189	1.0673	0.0751	Do not Reject H0	t+37
t+38	-0.0015	0.0116	-0.5449	Do not Reject H0	-0.0593	0.5026	-0.5007	Do not Reject H0	t+38
t+39	-0.0069	0.0205	-1.4245	Do not Reject H0	-0.1317	0.7504	-0.7448	Do not Reject H0	t+39
t+40	0.0003	0.0196	0.0542	Do not Reject H0	0.0064	0.6252	0.0436	Do not Reject H0	t+40
t+41	-0.0088	0.0250	-1.4878	Do not Reject H0	-0.2641	0.6818	-1.6435	Do not Reject H0	t+41
t+42	-0.0039	0.0144	-1.1470	Do not Reject H0	-0.1287	0.6643	-0.8219	Do not Reject H0	t+42
t+43	-0.0080	0.0338	-1.0042	Do not Reject H0	-0.2110	1.5584	-0.5745	Do not Reject H0	t+43
t+44	0.0034	0.0098	1.4904	Do not Reject H0	0.1941	0.5271	1.5628	Do not Reject H0	t+44
t+45	-0.0169	0.0224	-3.1962 *		-0.6265	0.8413	-3.1593 *		t+45
t+46	-0.0065	0.0256	-1.0839	Do not Reject H0	-0.2419	1.1031	-0.9303	Do not Reject H0	t+46
t+47	0.0000	0.0146	0.0000	Do not Reject H0	-0.0800	0.7907	-0.4290	Do not Reject H0	t+47
t+48	0.0042	0.0232	0.7681	Do not Reject H0	0.2408	0.7415	1.3779	Do not Reject H0	t+48
t+49	0.0086	0.0204	1.7792	Do not Reject H0	0.3434	0.7161	2.0347	Do not Reject H0	t+49
t+50	-0.0052	0.0168	-1.3111	Do not Reject H0	-0.1848	0.7729	-1.0145	Do not Reject H0	t+50
t+51	-0.0019	0.0192	-0.4084	Do not Reject H0	-0.0606	0.7656	-0.3357	Do not Reject H0	t+51
t+52	0.0078	0.0251	1.3120	Do not Reject H0	0.3787	1.1050	1.4542	Do not Reject H0	t+52
t+53	0.0036	0.0384	0.3971	Do not Reject H0	-0.0090	1.3949	-0.0273	Do not Reject H0	t+53
t+54	0.0095	0.0283	1.4267	Do not Reject H0	0.3242	0.9629	1.4287	Do not Reject H0	t+54
t+55	-0.0058	0.0402	-0.6069	Do not Reject H0	-0.0917	1.2811	-0.3038	Do not Reject H0	t+55
t+56	0.0089	0.0403	0.9380	Do not Reject H0	0.3182	1.0681	1.2640	Do not Reject H0	t+56
t+57	-0.0063	0.0182	-1.4576	Do not Reject H0	-0.1816	0.6381	-1.2070	Do not Reject H0	t+57
t+58	-0.0018	0.0117	-0.6705	Do not Reject H0	-0.0741	0.4014	-0.7836	Do not Reject H0	t+58
t+59	-0.0001	0.0103	-0.0251	Do not Reject H0	-0.0012	0.4057	-0.0125	Do not Reject H0	t+59
t+60	-0.0082	0.0358	-0.9665	Do not Reject H0	-0.2920	1.3502	-0.9175	Do not Reject H0	t+60

Note: * Significance at $\alpha = 1\%$

** Significance at $\alpha = 5\%$

Source: Author analysis

Table 4.5 Empirical Result of the Significance Test for Target According to Non-standardized- and Standardized Cumulative Abnormal Returns

Non-Standardized Cumulative Abnormal Return					Standardized Cumulative Abnormal Return				
Event Window	Average (CAAR)	Std. Dev	t-stat	Significance	Average (SCAAR)	Std. Dev	t-stat	Significance	Event Window
t-10	-0.0012	0.0284	-0.1801	Do not Reject H0	-0.0803	0.8451	-0.4033	Do not Reject H0	t-10
t-9	0.0003	0.0478	0.0212	Do not Reject H0	-0.0645	1.3132	-0.2083	Do not Reject H0	t-9
t-8	0.0066	0.0910	0.3077	Do not Reject H0	0.3513	2.0830	0.7155	Do not Reject H0	t-8
t-7	0.0073	0.0834	0.3733	Do not Reject H0	0.3545	2.2202	0.6775	Do not Reject H0	t-7
t-6	0.0034	0.0816	0.1783	Do not Reject H0	0.1969	2.3616	0.3538	Do not Reject H0	t-6
t-5	0.0100	0.0781	0.5420	Do not Reject H0	0.4578	2.3942	0.8113	Do not Reject H0	t-5
t-4	0.0059	0.0787	0.3186	Do not Reject H0	0.3838	2.1176	0.7690	Do not Reject H0	t-4
t-3	0.0136	0.0894	0.6463	Do not Reject H0	0.6048	2.3711	1.0822	Do not Reject H0	t-3
t-2	0.0190	0.0865	0.9303	Do not Reject H0	0.7948	2.7616	1.2211	Do not Reject H0	t-2
t-1	0.0288	0.0889	1.3725	Do not Reject H0	1.2424	2.6200	2.0119	Do not Reject H0	t-1
t0	0.0855	0.1183	3.0663 *		2.9783	4.0691	3.1054 *		t0
t+1	0.0828	0.1236	2.8430 *		2.9715	4.1218	3.0587 *		t+1
t+2	0.0838	0.1241	2.8668 *		2.8798	4.1745	2.9268 *		t+2
t+3	0.0880	0.1347	2.7710 *		2.7956	4.4134	2.6874 *		t+3
t+4	0.0846	0.1394	2.5727 *		2.7101	4.5871	2.5066 *		t+4
t+5	0.0896	0.1383	2.7483 *		3.0059	4.6095	2.7667 *		t+5
t+6	0.0847	0.1493	2.4066 **		2.7205	4.9583	2.3278 **		t+6
t+7	0.0850	0.1350	2.6708 *		2.8234	4.5314	2.6434 *		t+7
t+8	0.0841	0.1487	2.4007 **		2.7861	4.9110	2.4070 **		t+8
t+9	0.0926	0.1644	2.3895 **		2.9475	5.0510	2.4758 *		t+9
t+10	0.0915	0.1566	2.4800 *		3.0135	5.1829	2.4668 *		t+10
t+11	0.0944	0.1638	2.4448 **		3.0750	5.3781	2.4258 **		t+11
t+12	0.0919	0.1737	2.2444 **		2.9608	5.6739	2.2140 **		t+12
t+13	0.0927	0.1817	2.1634 **		3.0441	5.8745	2.1985 **		t+13
t+14	0.0924	0.1786	2.1963 **		3.0149	5.7821	2.2122 **		t+14
t+15	0.0867	0.1786	2.0587 Do not Reject H0		2.8756	5.9396	2.0540 Do not Reject H0		t+15
t+16	0.0873	0.1802	2.0538 Do not Reject H0		2.9975	6.0574	2.0995 Do not Reject H0		t+16
t+17	0.0942	0.1759	2.2732 **		3.2803	5.8012	2.3990 **		t+17
t+18	0.0947	0.1787	2.2490 **		3.3736	6.0398	2.3698 **		t+18
t+19	0.1124	0.2098	2.2743 **		3.9420	7.0220	2.3817 **		t+19
t+20	0.1083	0.2080	2.2095 **		3.7347	6.9975	2.2644 **		t+20
t+21	0.1106	0.2102	2.2323 **		3.8635	7.2163	2.2715 **		t+21
t+22	0.1092	0.2173	2.1317 **		3.9764	7.6232	2.2131 **		t+22
t+23	0.1103	0.2208	2.1202 **		3.8602	7.5918	2.1573 **		t+23
t+24	0.1040	0.2219	1.9879 Do not Reject H0		3.7995	7.7160	2.0892 Do not Reject H0		t+24
t+25	0.1115	0.2289	2.0671 Do not Reject H0		3.7353	7.8561	2.0172 Do not Reject H0		t+25
t+26	0.1073	0.2309	1.9713 Do not Reject H0		3.5658	7.9465	1.9038 Do not Reject H0		t+26
t+27	0.1036	0.2367	1.8572 Do not Reject H0		3.4852	8.1292	1.8189 Do not Reject H0		t+27
t+28	0.0921	0.2528	1.5454 Do not Reject H0		3.0550	8.7642	1.4789 Do not Reject H0		t+28
t+29	0.0946	0.2430	1.6518 Do not Reject H0		3.2694	8.3617	1.6589 Do not Reject H0		t+29
t+30	0.1111	0.2606	1.8086 Do not Reject H0		3.5799	8.6116	1.7637 Do not Reject H0		t+30
t+31	0.1024	0.2519	1.7253 Do not Reject H0		3.3495	8.5744	1.6573 Do not Reject H0		t+31
t+32	0.1009	0.2427	1.7648 Do not Reject H0		3.4379	8.4337	1.7294 Do not Reject H0		t+32
t+33	0.0986	0.2339	1.7889 Do not Reject H0		3.3013	8.1325	1.7223 Do not Reject H0		t+33
t+34	0.1049	0.2412	1.8450 Do not Reject H0		3.5604	8.4114	1.7958 Do not Reject H0		t+34
t+35	0.0988	0.2306	1.8182 Do not Reject H0		3.3361	8.1501	1.7367 Do not Reject H0		t+35
t+36	0.1044	0.2249	1.9685 Do not Reject H0		3.5300	7.9087	1.8937 Do not Reject H0		t+36
t+37	0.1055	0.2405	1.8600 Do not Reject H0		3.5489	8.3735	1.7981 Do not Reject H0		t+37
t+38	0.1040	0.2392	1.8442 Do not Reject H0		3.4896	8.2587	1.7927 Do not Reject H0		t+38
t+39	0.0971	0.2337	1.7625 Do not Reject H0		3.3578	8.2976	1.7169 Do not Reject H0		t+39
t+40	0.0974	0.2359	1.7513 Do not Reject H0		3.3642	8.4790	1.6834 Do not Reject H0		t+40
t+41	0.0886	0.2284	1.6456 Do not Reject H0		3.1001	8.3601	1.5733 Do not Reject H0		t+41
t+42	0.0847	0.2288	1.5711 Do not Reject H0		2.9714	8.5047	1.4823 Do not Reject H0		t+42

Table 4.5 Empirical Result of the Significance Test for Target According to Non-standardized- and Standardized Cumulative Abnormal Returns (continued)

Non-Standardized Cumulative Abnormal Return					Standardized Cumulative Abnormal Return				
Event Window	Average (CAAR)	Std. Dev	t-stat	Significance	Average (SCAAR)	Std. Dev	t-stat	Significance	Event Window
t+43	0.0767	0.2313	1.4066	Do not Reject H0	2.7604	8.9604	1.3070	Do not Reject H0	t+43
t+44	0.0801	0.2328	1.4603	Do not Reject H0	2.9546	9.1830	1.3651	Do not Reject H0	t+44
t+45	0.0632	0.2328	1.1524	Do not Reject H0	2.3281	9.1646	1.0778	Do not Reject H0	t+45
t+46	0.0567	0.2409	0.9987	Do not Reject H0	2.0862	9.5248	0.9293	Do not Reject H0	t+46
t+47	0.0567	0.2417	0.9948	Do not Reject H0	2.0063	9.2828	0.9170	Do not Reject H0	t+47
t+48	0.0609	0.2347	1.1001	Do not Reject H0	2.2471	9.3213	1.0228	Do not Reject H0	t+48
t+49	0.0694	0.2255	1.3066	Do not Reject H0	2.5905	9.2235	1.1916	Do not Reject H0	t+49
t+50	0.0643	0.2306	1.1820	Do not Reject H0	2.4057	9.5889	1.0644	Do not Reject H0	t+50
t+51	0.0624	0.2372	1.1159	Do not Reject H0	2.3451	9.9840	0.9965	Do not Reject H0	t+51
t+52	0.0702	0.2283	1.3038	Do not Reject H0	2.7238	9.6602	1.1963	Do not Reject H0	t+52
t+53	0.0738	0.2310	1.3548	Do not Reject H0	2.7149	9.9754	1.1547	Do not Reject H0	t+53
t+54	0.0833	0.2471	1.4300	Do not Reject H0	3.0391	10.6141	1.2148	Do not Reject H0	t+54
t+55	0.0775	0.2532	1.2990	Do not Reject H0	2.9474	10.7868	1.1593	Do not Reject H0	t+55
t+56	0.0865	0.2427	1.5115	Do not Reject H0	3.2656	10.6903	1.2960	Do not Reject H0	t+56
t+57	0.0802	0.2383	1.4280	Do not Reject H0	3.0841	10.4913	1.2472	Do not Reject H0	t+57
t+58	0.0783	0.2388	1.3920	Do not Reject H0	3.0099	10.4695	1.2197	Do not Reject H0	t+58
t+59	0.0783	0.2393	1.3878	Do not Reject H0	3.0087	10.4038	1.2269	Do not Reject H0	t+59
t+60	0.0701	0.2366	1.2572	Do not Reject H0	2.7167	10.4131	1.1069	Do not Reject H0	t+60

Note: * Significance at $\alpha = 1\%$

** Significance at $\alpha = 5\%$

Source: Author analysis

4.2.4. Analysis for Target

Both significance tests of AR and SAR show the same pattern of average return abnormality obtained by stockholders of Target (Figure 4.5 and Figure 4.6), that was, the abnormal returns – on average (AARs) – occurred only upon the announcement of M&A news. The stockholders obtained both significant positive AR and SAR by average of 0.0567 at $t_{\alpha} = 5\%$ and of 1.7359 at $t_{\alpha} = 5\%$, respectively, indicating market efficiency. However, there were adjustments on the ARs and SARs as the stockholders obtained significant negative AR on t_{+45} by average of 0.0169 at $t_{\alpha} = 1\%$ and negative significant SARs on t_{+20} by average of 0.2073 at $t_{\alpha} = 5\%$ and on t_{+45} by average of 0.6265 at $t_{\alpha} = 5\%$ (Table 4.4).

Cumulatively, market reacted only upon the announcement and stockholders of Target responded positively to the newly announced M&A as reflected on CAAR as well as SCAAR from t_0 through t_{+14} and from t_{+17} until t_{+23} (Figure 4.7 and Figure 4.8).

Overall, the announced M&A plans were perceived positively by market and therefore producing significant positive *ARs* as well as *SARs* (rejection of H_0) for stockholders of Target upon the announcement followed by some significant negative *AR* days after. However, when the *ARs* were cumulated, the stockholders obtained significant positive *CAR* (either non-standardized or standardized) upon

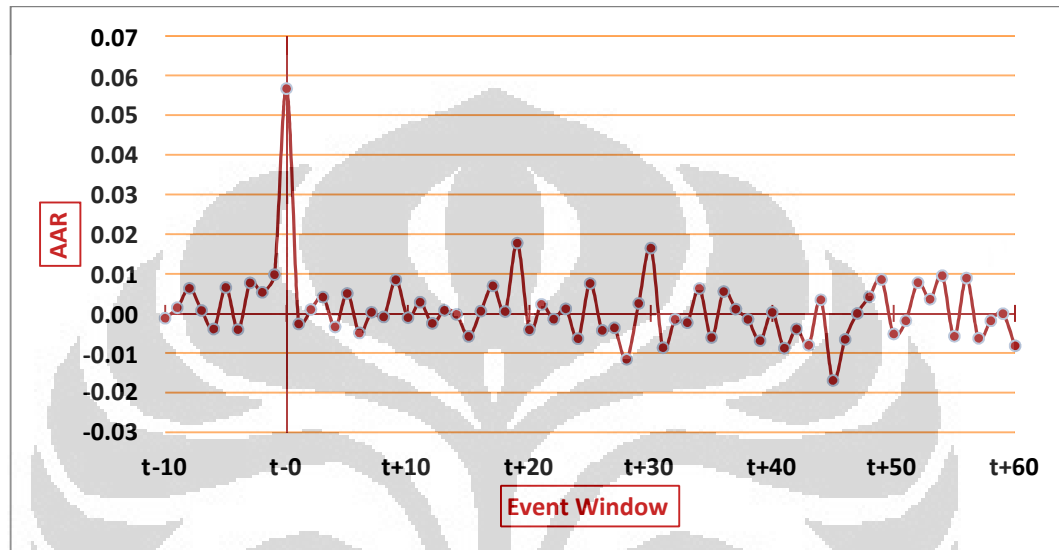


Figure 4.6 Average Abnormal Return of Target

Source: Author analysis

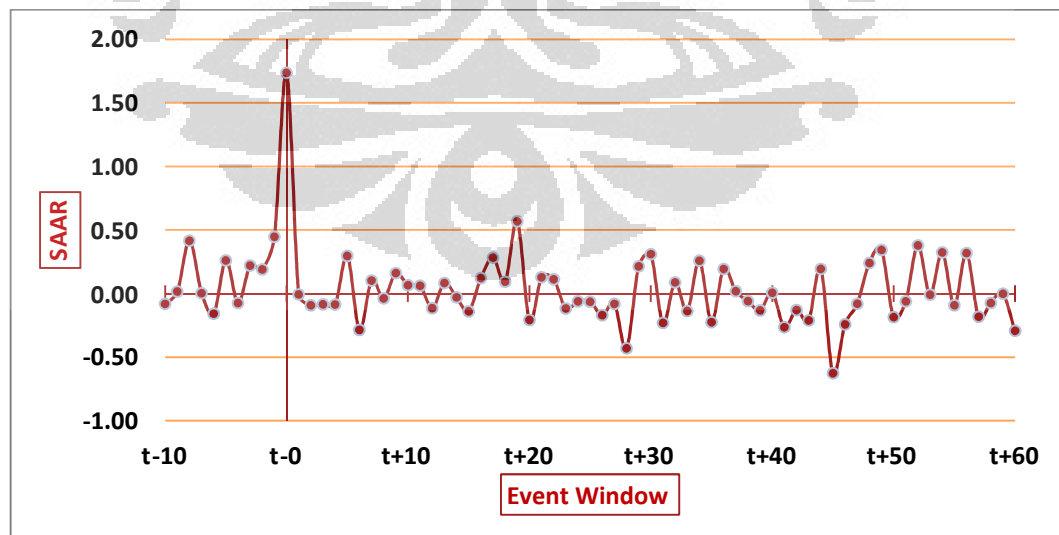


Figure 4.7 Standardized Average Abnormal Return of Target

Source: Author analysis

and post announcement. Having said that, the H_0 should be rejected accordingly.

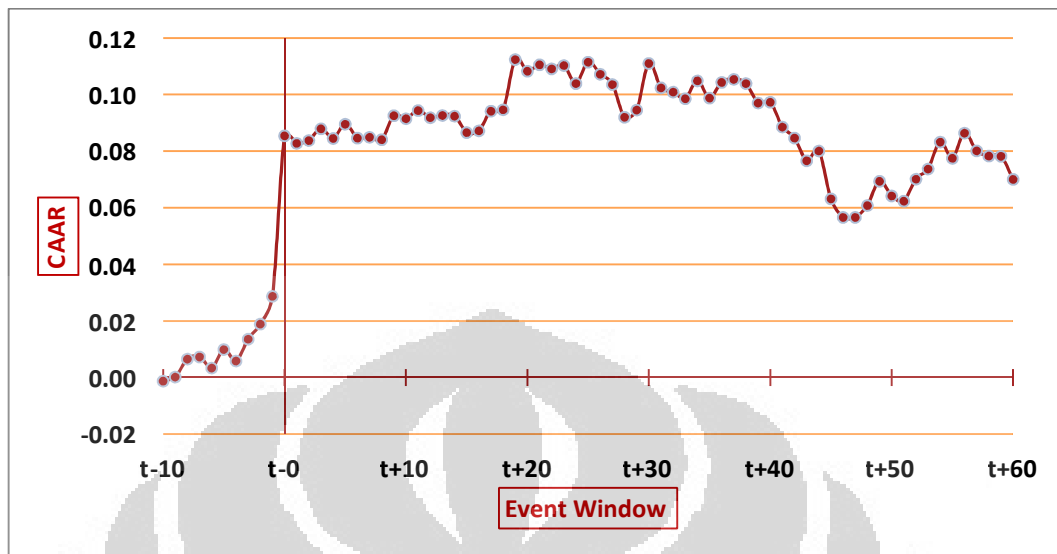


Figure 4.8 Cumulative Average Abnormal Return of Target

Source: Author analysis

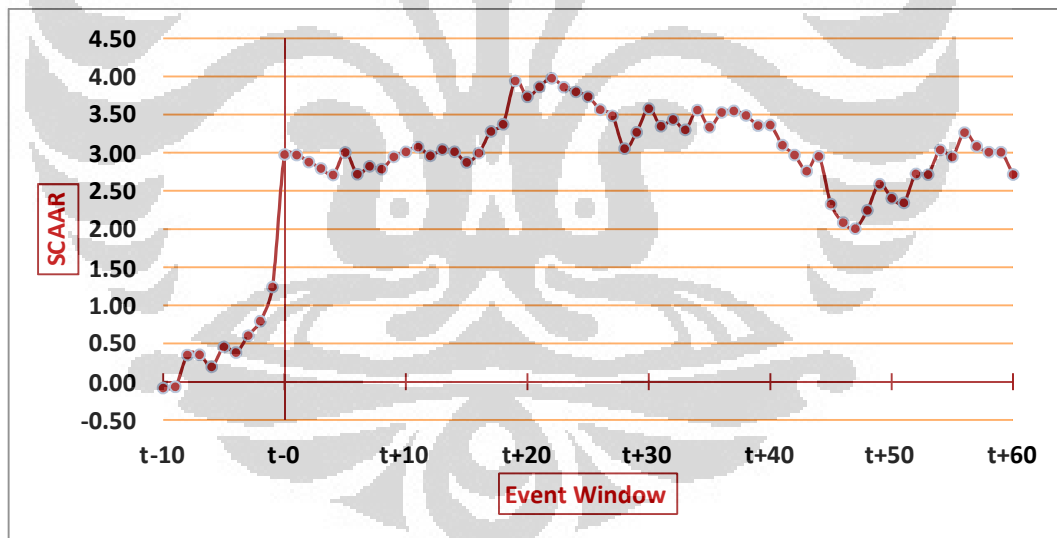


Figure 4.9 Standardized Cumulative Average Abnormal Return of Target

Source: Author analysis

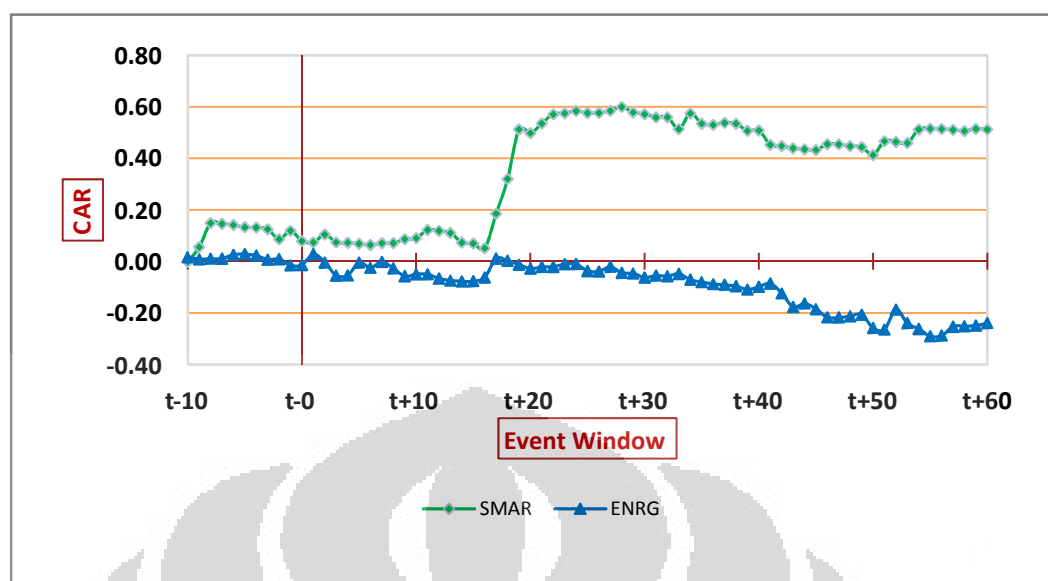


Figure 4.10 Outliers Snapshot for Target based on Cumulative Abnormal Returns

Source: Author analysis

4.3. Hypothesis II

4.3.1. Empirical Results for both Acquiring/Surviving company and Target

A two-tail t_{test} with a significance level of 5% is employed in order to see whether stockholders of Acquiring/Surviving company and stockholders of Target received significant different abnormal returns and cumulative abnormal returns. The empirical results of the test are summarized in following tables;

Table 4.6 Non-standardized- and Standardized Abnormal Returns for Acquiring/Surviving and Target

Event Window	Pair n	Non-Standardized Abnormal Return				Standardized Abnormal Return				Pair n	Event Window
		Acquirer - Average (AAR)	Target - Average (AAR)	t -stat	Significance	Acquirer - Average (SAAR)	Target - Average (SAAR)	t -stat	Significance		
t-10	Pair 1	0.0041	-0.0012	0.2843	Do not Reject H0	0.0513	-0.0803	0.2818	Do not Reject H0	Pair 1	t-10
t-9	Pair 2	0.0143	0.0014	0.2230	Do not Reject H0	0.1673	0.0159	0.0401	Do not Reject H0	Pair 2	t-9
t-8	Pair 3	0.0082	0.0064	-1.0429	Do not Reject H0	0.1238	0.4158	-1.4443	Do not Reject H0	Pair 3	t-8
t-7	Pair 4	-0.0032	0.0007	-0.1336	Do not Reject H0	-0.1953	0.0032	-0.3167	Do not Reject H0	Pair 4	t-7
t-6	Pair 5	0.0137	-0.0039	1.2425	Do not Reject H0	0.5460	-0.1576	1.3981	Do not Reject H0	Pair 5	t-6
t-5	Pair 6	0.0032	0.0066	-0.0224	Do not Reject H0	0.0970	0.2609	-0.2168	Do not Reject H0	Pair 6	t-5
t-4	Pair 7	-0.0116	-0.0041	-0.2908	Do not Reject H0	-0.0633	-0.0740	0.2904	Do not Reject H0	Pair 7	t-4
t-3	Pair 8	-0.0021	0.0077	-0.2875	Do not Reject H0	0.2747	0.2210	0.6545	Do not Reject H0	Pair 8	t-3
t-2	Pair 9	0.0019	0.0053	0.3188	Do not Reject H0	-0.2640	0.1900	-0.4536	Do not Reject H0	Pair 9	t-2
t-1	Pair 10	0.0024	0.0098	-0.5270	Do not Reject H0	0.0715	0.4476	-0.4924	Do not Reject H0	Pair 10	t-1
t0	Pair 11	0.0097	0.0567	-1.4499	Do not Reject H0	0.4744	1.7359	-1.3838	Do not Reject H0	Pair 11	t0
t+1	Pair 12	0.0064	-0.0027	1.0623	Do not Reject H0	0.0743	-0.0068	0.4297	Do not Reject H0	Pair 12	t+1
t+2	Pair 13	-0.0161	0.0010	-1.2267	Do not Reject H0	-0.4282	-0.0917	-0.6125	Do not Reject H0	Pair 13	t+2
t+3	Pair 14	-0.0117	0.0041	-0.6728	Do not Reject H0	-0.3294	-0.0843	-0.1320	Do not Reject H0	Pair 14	t+3
t+4	Pair 15	0.0112	-0.0034	1.2588	Do not Reject H0	0.2355	-0.0855	0.9377	Do not Reject H0	Pair 15	t+4
t+5	Pair 16	-0.0230	0.0051	-1.1574	Do not Reject H0	-0.1897	0.2958	-1.5455	Do not Reject H0	Pair 16	t+5

Table 4.6 Non-Standardized and Standardized Abnormal Returns for Acquiring/Surviving and Target (continued)

Non-Standardized Abnormal Return						Standardized Abnormal Return					
Event Window	Pair n	Acquirer - Target -		t-stat	Significance	Acquirer - Target -		t-stat	Significance	Pair n	Event Window
		Average (AAR)	Average (AAR)			Average (SAAR)	Average (SAAR)				
t+6	Pair 17	0.0204	-0.0049	1.6665	Do not Reject H0	0.2918	-0.2854	2.3245	**	Pair 17	t+6
t+7	Pair 18	-0.0073	0.0003	-0.4391	Do not Reject H0	-0.2494	0.1028	-1.1206	Do not Reject H0	Pair 18	t+7
t+8	Pair 19	-0.0031	-0.0009	-0.6708	Do not Reject H0	-0.1115	-0.0373	-0.4272	Do not Reject H0	Pair 19	t+8
t+9	Pair 20	0.0008	0.0085	-1.1861	Do not Reject H0	0.0654	0.1615	-0.9950	Do not Reject H0	Pair 20	t+9
t+10	Pair 21	-0.0047	-0.0011	0.7060	Do not Reject H0	0.0151	0.0660	0.9497	Do not Reject H0	Pair 21	t+10
t+11	Pair 22	-0.0016	0.0029	-0.6721	Do not Reject H0	-0.0844	0.0615	-0.3922	Do not Reject H0	Pair 22	t+11
t+12	Pair 23	0.0050	-0.0025	0.0000	Do not Reject H0	-0.0316	-0.1142	-0.3815	Do not Reject H0	Pair 23	t+12
t+13	Pair 24	-0.0064	0.0008	-1.2248	Do not Reject H0	-0.1506	0.0833	-0.9286	Do not Reject H0	Pair 24	t+13
t+14	Pair 25	-0.0318	-0.0002	-2.3471	**	-0.7405	-0.0292	-2.5839	**	Pair 25	t+14
t+15	Pair 26	-0.0003	-0.0058	0.6782	Do not Reject H0	0.0344	-0.1393	0.4723	Do not Reject H0	Pair 26	t+15
t+16	Pair 27	-0.0023	0.0006	-0.3068	Do not Reject H0	0.0900	0.1219	0.1209	Do not Reject H0	Pair 27	t+16
t+17	Pair 28	0.0136	0.0070	-0.0574	Do not Reject H0	0.6501	0.2828	0.0541	Do not Reject H0	Pair 28	t+17
t+18	Pair 29	-0.0064	0.0005	-0.3440	Do not Reject H0	-0.3127	0.0934	-0.5585	Do not Reject H0	Pair 29	t+18
t+19	Pair 30	-0.0072	0.0177	-1.8985	Do not Reject H0	-0.1435	0.5683	-1.8093	Do not Reject H0	Pair 30	t+19
t+20	Pair 31	-0.0120	-0.0041	-1.0010	Do not Reject H0	-0.4089	-0.2073	-0.6773	Do not Reject H0	Pair 31	t+20
t+21	Pair 32	-0.0108	0.0023	-0.6716	Do not Reject H0	-0.2716	0.1288	-1.0851	Do not Reject H0	Pair 32	t+21
t+22	Pair 33	0.0150	-0.0014	1.1807	Do not Reject H0	0.3903	0.1129	0.8624	Do not Reject H0	Pair 33	t+22
t+23	Pair 34	-0.0165	0.0012	-1.4388	Do not Reject H0	-0.1503	-0.1162	-0.7411	Do not Reject H0	Pair 34	t+23
t+24	Pair 35	0.0165	-0.0064	1.5906	Do not Reject H0	0.1796	-0.0607	1.0573	Do not Reject H0	Pair 35	t+24
t+25	Pair 36	0.0045	0.0076	-0.1896	Do not Reject H0	0.1443	-0.0643	0.4074	Do not Reject H0	Pair 36	t+25
t+26	Pair 37	0.0106	-0.0043	2.1858	Do not Reject H0	0.3987	-0.1695	1.7816	Do not Reject H0	Pair 37	t+26
t+27	Pair 38	-0.0010	-0.0036	-0.2457	Do not Reject H0	-0.0982	-0.0806	-0.5610	Do not Reject H0	Pair 38	t+27
t+28	Pair 39	-0.0122	-0.0116	-0.1931	Do not Reject H0	-0.5275	-0.4301	-0.1976	Do not Reject H0	Pair 39	t+28
t+29	Pair 40	0.0117	0.0025	0.1806	Do not Reject H0	0.3758	0.2144	-0.1571	Do not Reject H0	Pair 40	t+29
t+30	Pair 41	-0.0021	0.0165	-1.0819	Do not Reject H0	-0.0511	0.3105	-0.8197	Do not Reject H0	Pair 41	t+30
t+31	Pair 42	-0.0124	-0.0086	-0.1280	Do not Reject H0	-0.1805	-0.2304	0.0797	Do not Reject H0	Pair 42	t+31
t+32	Pair 43	-0.0066	-0.0015	-0.1456	Do not Reject H0	0.0685	0.0884	-0.0843	Do not Reject H0	Pair 43	t+32
t+33	Pair 44	0.0247	-0.0023	1.9343	Do not Reject H0	0.5817	-0.1366	1.9272	Do not Reject H0	Pair 44	t+33
t+34	Pair 45	-0.0050	0.0063	-0.9466	Do not Reject H0	-0.1280	-0.2591	-0.8499	Do not Reject H0	Pair 45	t+34
t+35	Pair 46	0.0021	-0.0061	3.0798	*	0.0814	-0.2243	3.0490	*	Pair 46	t+35
t+36	Pair 47	-0.0094	0.0055	-1.2276	Do not Reject H0	-0.2957	-0.1938	-1.0551	Do not Reject H0	Pair 47	t+36
t+37	Pair 48	-0.0161	0.0011	-1.0131	Do not Reject H0	-0.4564	0.0189	-0.9200	Do not Reject H0	Pair 48	t+37
t+38	Pair 49	-0.0101	-0.0015	-1.2019	Do not Reject H0	-0.3262	-0.0593	-1.0102	Do not Reject H0	Pair 49	t+38
t+39	Pair 50	-0.0171	-0.0069	-0.8194	Do not Reject H0	-0.4939	-0.1317	-0.8084	Do not Reject H0	Pair 50	t+39
t+40	Pair 51	0.0095	0.0003	1.1172	Do not Reject H0	0.1771	0.0064	1.6495	Do not Reject H0	Pair 51	t+40
t+41	Pair 52	0.0139	-0.0088	2.5145	**	0.5195	-0.2641	1.6901	Do not Reject H0	Pair 52	t+41
t+42	Pair 53	-0.0060	-0.0039	0.3871	Do not Reject H0	-0.1589	-0.1287	0.5739	Do not Reject H0	Pair 53	t+42
t+43	Pair 54	-0.0161	-0.0080	1.0537	Do not Reject H0	-0.5822	-0.2110	0.8313	Do not Reject H0	Pair 54	t+43
t+44	Pair 55	0.0029	0.0034	-0.0738	Do not Reject H0	0.0617	-0.1941	-0.4695	Do not Reject H0	Pair 55	t+44
t+45	Pair 56	0.0086	-0.0169	1.9644	Do not Reject H0	0.0790	-0.6265	1.9639	Do not Reject H0	Pair 56	t+45
t+46	Pair 57	-0.0284	-0.0065	-1.3156	Do not Reject H0	-0.6831	-0.2419	-0.7158	Do not Reject H0	Pair 57	t+46
t+47	Pair 58	0.0063	0.0000	0.5365	Do not Reject H0	0.1534	-0.0800	0.2941	Do not Reject H0	Pair 58	t+47
t+48	Pair 59	-0.0162	0.0042	-1.3908	Do not Reject H0	-0.5065	0.2408	-1.3592	Do not Reject H0	Pair 59	t+48
t+49	Pair 60	-0.0062	0.0086	-1.3379	Do not Reject H0	-0.1274	0.3434	-1.0173	Do not Reject H0	Pair 60	t+49
t+50	Pair 61	-0.0221	-0.0052	-0.8419	Do not Reject H0	-0.4474	-0.1848	-0.0780	Do not Reject H0	Pair 61	t+50
t+51	Pair 62	-0.0040	-0.0019	0.0008	Do not Reject H0	-0.2220	-0.0606	-0.1419	Do not Reject H0	Pair 62	t+51
t+52	Pair 63	0.0263	0.0078	0.5831	Do not Reject H0	0.5087	0.3787	-0.1251	Do not Reject H0	Pair 63	t+52
t+53	Pair 64	-0.0054	0.0036	-0.0531	Do not Reject H0	-0.1465	-0.0090	0.4210	Do not Reject H0	Pair 64	t+53
t+54	Pair 65	-0.0042	0.0095	-0.9405	Do not Reject H0	0.0280	0.3242	-0.7328	Do not Reject H0	Pair 65	t+54
t+55	Pair 66	-0.0015	-0.0058	-0.3032	Do not Reject H0	-0.0155	-0.0917	-0.5079	Do not Reject H0	Pair 66	t+55
t+56	Pair 67	-0.0032	0.0089	-0.7435	Do not Reject H0	-0.0646	0.3182	-0.8830	Do not Reject H0	Pair 67	t+56
t+57	Pair 68	0.0025	-0.0063	0.5314	Do not Reject H0	0.1493	-0.1816	0.6847	Do not Reject H0	Pair 68	t+57
t+58	Pair 69	-0.0038	-0.0018	-0.3625	Do not Reject H0	0.0598	-0.0741	0.0298	Do not Reject H0	Pair 69	t+58
t+59	Pair 70	-0.0182	-0.0001	-1.1905	Do not Reject H0	-0.4674	-0.0012	-1.5654	Do not Reject H0	Pair 70	t+59
t+60	Pair 71	0.0176	-0.0082	1.2725	Do not Reject H0	0.2022	-0.2920	0.9809	Do not Reject H0	Pair 71	t+60

Note: * Significance at $\alpha = 1\%$

** Significance at $\alpha = 5\%$

Source: Author analysis

Table 4.7 Non-standardized- and Standardized Cumulative Abnormal Returns for Acquiring/Surviving and Target

Non-Standardized Cumulative Abnormal Return						Standardized Cumulative Abnormal Return					
Event Window	Pair n	Acquirer - Average (CAAR)	Target - Average (CAAR)	t-stat	Significance	Acquirer - Average (SCAAR)	Target - Average (SCAAR)	t-stat	Significance	Pair n	Event Window
t-10	Pair 1	0.0041	-0.0012	0.2843	Do not Reject H0	0.0513	-0.0803	0.2818	Do not Reject H0	Pair 1	t-10
t-9	Pair 2	0.0184	0.0003	0.3374	Do not Reject H0	0.2186	-0.0645	0.2226	Do not Reject H0	Pair 2	t-9
t-8	Pair 3	0.0266	0.0066	-0.1522	Do not Reject H0	0.3424	0.3513	-0.5061	Do not Reject H0	Pair 3	t-8
t-7	Pair 4	0.0234	0.0073	-0.2491	Do not Reject H0	0.1471	0.3545	-0.7927	Do not Reject H0	Pair 4	t-7
t-6	Pair 5	0.0371	0.0034	0.2862	Do not Reject H0	0.6931	0.1969	-0.0372	Do not Reject H0	Pair 5	t-6
t-5	Pair 6	0.0404	0.0100	0.2786	Do not Reject H0	0.7902	0.4578	-0.1624	Do not Reject H0	Pair 6	t-5
t-4	Pair 7	0.0287	0.0059	0.1430	Do not Reject H0	0.7269	0.3838	0.0159	Do not Reject H0	Pair 7	t-4
t-3	Pair 8	0.0266	0.0136	-0.0657	Do not Reject H0	1.0016	0.6048	0.2870	Do not Reject H0	Pair 8	t-3
t-2	Pair 9	0.0286	0.0190	0.1589	Do not Reject H0	0.7376	0.7948	0.0611	Do not Reject H0	Pair 9	t-2
t-1	Pair 10	0.0310	0.0288	-0.0596	Do not Reject H0	0.8091	1.2424	-0.1673	Do not Reject H0	Pair 10	t-1
t0	Pair 11	0.0407	0.0855	-1.8040	Do not Reject H0	1.2835	2.9783	-1.7537	Do not Reject H0	Pair 11	t0
t+1	Pair 12	0.0471	0.0828	-1.4480	Do not Reject H0	1.3578	2.9715	-1.5742	Do not Reject H0	Pair 12	t+1
t+2	Pair 13	0.0310	0.0838	-1.5515	Do not Reject H0	0.9296	2.8798	-1.7264	Do not Reject H0	Pair 13	t+2
t+3	Pair 14	0.0193	0.0880	-1.7276	Do not Reject H0	0.6002	2.7956	-1.6783	Do not Reject H0	Pair 14	t+3
t+4	Pair 15	0.0305	0.0846	-1.5406	Do not Reject H0	0.8357	2.7101	-1.3711	Do not Reject H0	Pair 15	t+4
t+5	Pair 16	0.0075	0.0896	-1.6532	Do not Reject H0	0.6460	3.0059	-1.6902	Do not Reject H0	Pair 16	t+5
t+6	Pair 17	0.0279	0.0847	-1.3765	Do not Reject H0	0.9377	2.7205	-1.2186	Do not Reject H0	Pair 17	t+6
t+7	Pair 18	0.0206	0.0850	-1.6781	Do not Reject H0	0.6883	2.8234	-1.6945	Do not Reject H0	Pair 18	t+7
t+8	Pair 19	0.0175	0.0841	-1.5848	Do not Reject H0	0.5768	2.7861	-1.5429	Do not Reject H0	Pair 19	t+8
t+9	Pair 20	0.0182	0.0926	-1.8634	Do not Reject H0	0.6422	2.9475	-1.9269	Do not Reject H0	Pair 20	t+9
t+10	Pair 21	0.0135	0.0915	-1.7054	Do not Reject H0	0.6573	3.0135	-1.5928	Do not Reject H0	Pair 21	t+10
t+11	Pair 22	0.0119	0.0944	-1.7466	Do not Reject H0	0.5729	3.0750	-1.6578	Do not Reject H0	Pair 22	t+11
t+12	Pair 23	0.0169	0.0919	-1.8874	Do not Reject H0	0.5412	2.9608	-1.6819	Do not Reject H0	Pair 23	t+12
t+13	Pair 24	0.0106	0.0927	-1.9805	Do not Reject H0	0.3906	3.0441	-1.7641	Do not Reject H0	Pair 24	t+13
t+14	Pair 25	-0.0213	0.0924	-2.2280	Do not Reject H0	-0.3499	3.0149	-2.1959	Do not Reject H0	Pair 25	t+14
t+15	Pair 26	-0.0216	0.0867	-2.0508	Do not Reject H0	-0.3154	2.8756	-1.9581	Do not Reject H0	Pair 26	t+15
t+16	Pair 27	-0.0239	0.0873	-2.1099	Do not Reject H0	-0.2254	2.9975	-1.9573	Do not Reject H0	Pair 27	t+16
t+17	Pair 28	-0.0103	0.0942	-2.0628	Do not Reject H0	0.4247	3.2803	-1.7788	Do not Reject H0	Pair 28	t+17
t+18	Pair 29	-0.0167	0.0947	-2.2953 **		0.1120	3.3736	-1.8924	Do not Reject H0	Pair 29	t+18
t+19	Pair 30	-0.0239	0.1124	-2.3805 **		-0.0315	3.9420	-2.0233	Do not Reject H0	Pair 30	t+19
t+20	Pair 31	-0.0359	0.1083	-2.5118 **		-0.4405	3.7347	-2.1856	Do not Reject H0	Pair 31	t+20
t+21	Pair 32	-0.0467	0.1106	-2.4516 **		-0.7121	3.8635	-2.1993	Do not Reject H0	Pair 32	t+21
t+22	Pair 33	-0.0317	0.1092	-2.2510	Do not Reject H0	-0.3218	3.9764	-2.0142	Do not Reject H0	Pair 33	t+22
t+23	Pair 34	-0.0482	0.1103	-2.3115 **		-0.4721	3.8602	-2.0248	Do not Reject H0	Pair 34	t+23
t+24	Pair 35	-0.0317	0.1040	-2.1434	Do not Reject H0	-0.2925	3.7995	-1.8352	Do not Reject H0	Pair 35	t+24
t+25	Pair 36	-0.0273	0.1115	-2.0383	Do not Reject H0	-0.1482	3.7353	-1.6784	Do not Reject H0	Pair 36	t+25
t+26	Pair 37	-0.0167	0.1073	-1.9080	Do not Reject H0	0.2506	3.5658	-1.5230	Do not Reject H0	Pair 37	t+26
t+27	Pair 38	-0.0177	0.1036	-1.9191	Do not Reject H0	0.1523	3.4852	-1.5181	Do not Reject H0	Pair 38	t+27
t+28	Pair 39	-0.0299	0.0921	-1.8778	Do not Reject H0	-0.3752	3.0550	-1.4721	Do not Reject H0	Pair 39	t+28
t+29	Pair 40	-0.0181	0.0946	-2.0557	Do not Reject H0	0.0006	3.2694	-1.6950	Do not Reject H0	Pair 40	t+29
t+30	Pair 41	-0.0202	0.1111	-2.0509	Do not Reject H0	-0.0505	3.5799	-1.7300	Do not Reject H0	Pair 41	t+30
t+31	Pair 42	-0.0326	0.1024	-2.1141	Do not Reject H0	-0.2310	3.3495	-1.7433	Do not Reject H0	Pair 42	t+31
t+32	Pair 43	-0.0392	0.1009	-2.0993	Do not Reject H0	-0.1625	3.4379	-1.7777	Do not Reject H0	Pair 43	t+32
t+33	Pair 44	-0.0145	0.0986	-1.9869	Do not Reject H0	0.4192	3.3013	-1.5833	Do not Reject H0	Pair 44	t+33
t+34	Pair 45	-0.0195	0.1049	-2.1766	Do not Reject H0	0.2912	3.5604	-1.7329	Do not Reject H0	Pair 45	t+34
t+35	Pair 46	-0.0174	0.0988	-1.9763	Do not Reject H0	0.3726	3.3361	-1.5522	Do not Reject H0	Pair 46	t+35
t+36	Pair 47	-0.0268	0.1044	-2.1842	Do not Reject H0	0.0769	3.5300	-1.7745	Do not Reject H0	Pair 47	t+36
t+37	Pair 48	-0.0428	0.1055	-2.1430	Do not Reject H0	-0.3795	3.5489	-1.7862	Do not Reject H0	Pair 48	t+37
t+38	Pair 49	-0.0529	0.1040	-2.2277	Do not Reject H0	-0.7057	3.4896	-1.8803	Do not Reject H0	Pair 49	t+38
t+39	Pair 50	-0.0700	0.0971	-2.4259 **		-1.1995	3.3578	-2.0287	Do not Reject H0	Pair 50	t+39
t+40	Pair 51	-0.0605	0.0974	-2.3212 **		-1.0225	3.3642	-1.9373	Do not Reject H0	Pair 51	t+40
t+41	Pair 52	-0.0466	0.0886	-2.1201	Do not Reject H0	-0.5030	3.1001	-1.8002	Do not Reject H0	Pair 52	t+41
t+42	Pair 53	-0.0525	0.0847	-2.0002	Do not Reject H0	-0.6619	2.9714	-1.6193	Do not Reject H0	Pair 53	t+42
t+43	Pair 54	-0.0687	0.0767	-1.9406	Do not Reject H0	-1.2441	2.7604	-1.5058	Do not Reject H0	Pair 54	t+43
t+44	Pair 55	-0.0658	0.0801	-1.9455	Do not Reject H0	-1.1825	2.9546	-1.5489	Do not Reject H0	Pair 55	t+44
t+45	Pair 56	-0.0572	0.0632	-1.7431	Do not Reject H0	-1.1035	2.3281	-1.2488	Do not Reject H0	Pair 56	t+45
t+46	Pair 57	-0.0856	0.0567	-1.8509	Do not Reject H0	-1.7866	2.0862	-1.3557	Do not Reject H0	Pair 57	t+46
t+47	Pair 58	-0.0793	0.0567	-1.8139	Do not Reject H0	-1.6332	2.0063	-1.2999	Do not Reject H0	Pair 58	t+47
t+48	Pair 59	-0.0954	0.0609	-2.0369	Do not Reject H0	-2.1397	2.2471	-1.5277	Do not Reject H0	Pair 59	t+48
t+49	Pair 60	-0.1016	0.0694	-2.1942	Do not Reject H0	-2.2671	2.5905	-1.6684	Do not Reject H0	Pair 60	t+49
t+50	Pair 61	-0.1237	0.0643	-2.1635	Do not Reject H0	-2.7146	2.4057	-1.6554	Do not Reject H0	Pair 61	t+50

Table 4.7 Non-standardized and Standardized Cumulative Abnormal Returns for Acquiring/Surviving and Target (continued)

Non-Standardized Cumulative Abnormal Return						Standardized Cumulative Abnormal Return					
Event Window	Pair n	Acquirer - Target - Average		<i>t</i> -stat	Significance	Acquirer - Target - Average		<i>t</i> -stat	Significance	Pair n	Event Window
		(CAAR)	(CAAR)			(SCAAR)	(SCAAR)				
t+51	Pair 62	-0.1277	0.0624	-2.0805	Do not Reject H0	-2.9366	2.3451	-1.5678	Do not Reject H0	Pair 62	t+51
t+52	Pair 63	-0.1014	0.0702	-2.2267	Do not Reject H0	-2.4279	2.7238	-1.6925	Do not Reject H0	Pair 63	t+52
t+53	Pair 64	-0.1068	0.0738	-2.1919	Do not Reject H0	-2.5744	2.7149	-1.5987	Do not Reject H0	Pair 64	t+53
t+54	Pair 65	-0.1111	0.0833	-2.2586	Do not Reject H0	-2.5464	3.0391	-1.6808	Do not Reject H0	Pair 65	t+54
t+55	Pair 66	-0.1125	0.0775	-2.3057	**	-2.5619	2.9474	-1.7051	Do not Reject H0	Pair 66	t+55
t+56	Pair 67	-0.1157	0.0865	-2.7775	*	-2.6265	3.2656	-2.0021	Do not Reject H0	Pair 67	t+56
t+57	Pair 68	-0.1132	0.0802	-2.6382	**	-2.4772	3.0841	-1.9098	Do not Reject H0	Pair 68	t+57
t+58	Pair 69	-0.1170	0.0783	-2.6638	**	-2.4174	3.0099	-1.9926	Do not Reject H0	Pair 69	t+58
t+59	Pair 70	-0.1352	0.0783	-2.6486	**	-2.8849	3.0087	-2.1552	Do not Reject H0	Pair 70	t+59
t+60	Pair 71	-0.1176	0.0701	-2.7049	*	-2.6827	2.7167	-2.0657	Do not Reject H0	Pair 71	t+60

Note: * Significance at $t_{\alpha} = 1\%$

** Significance at $t_{\alpha} = 5\%$

Source: Author analysis

4.3.2. Analysis for both Acquiring/Surviving company and Target

Stockholders of Acquiring/Surviving company (Group 1) and Stockholders of Target (Group 2) received the same abnormal returns (ARs) prior to and upon the announcement of M&A (on t_0) according to the significance test. However, Group 1 obtained significant different ARs post announcement; on (1) t_{+14} with an average (AAR) of -0.0318 against Group 2's AAR of -0.0002 at $t_{\alpha} = 5\%$, (2) t_{+35} with AAR of 0.0021 against Group 2's AAR of -0.0061 at $t_{\alpha} = 1\%$, and (3) t_{+41} with AAR of 0.0139 against Group 2's AAR of -0.0088 at $t_{\alpha} = 5\%$ (Table 4.6, Left hand-side). Consequently, H_0 should be rejected on aforementioned days.

If the AR was standardized, then Group 1 only received significantly different standardized abnormal returns (SARs) compare to that of Group 2 on (1) t_{+6} by average (SAAR) of 0.2918 against Group 2's SAAR of -0.2854 at $t_{\alpha} = 5\%$, (2) t_{+14} by average (SAAR) of -0.7405 against Group 2's SAAR of -0.0292 at $t_{\alpha} = 5\%$, and (3) t_{+35} by average (SAAR) of 0.0814 against Group 2's SAAR of -0.2243 at $t_{\alpha} = 1\%$ (Table 4.6, Right hand-side). As a result, H_0 was rejected only on t_{+6} , t_{+14} , and t_{+35} .

In conclusion, the Group 1 received significantly different cumulative ARs (CARs) for as much as 13 days post the announcement of M&A when the abnormal returns were cumulated (Table 4.7, Left hand-side). Yet, there were no significantly different standardized CAR (SCAR) received between Group 1 and

Group 2 prior to, upon the announcement and post announcement of M&A (across event window).

4.4. Hypothesis III

4.4.1. Empirical Results for Cash Deal vs. Stock Deal –Acquiring Company

A two-tail t_{test} with a significance level of 5% is employed in order to see whether market reacted differently if Acquiring/Surviving company financed the deal either by cash deal or stocks deal. The empirical results of the test are summarized in following tables;

Table 4.8 Significance Test for Cash Deal vs. Stock Deal – Acquiring Company based on Abnormal Returns

Event Window	Pair n	Non-Standardized Abnormal Return				Standardized Abnormal Return				Pair n	Event Window
		Cash - Average (AAR)	Stock - Average (AAR)	t-stat	Significance	Cash - Average (SAAR)	Stock - Average (SAAR)	t-stat	Significance		
t-10	Pair 1	0.0112	1.4017	0.6341	Do not Reject H0	0.4895	-0.6060	1.0247	Do not Reject H0	Pair 1	t-10
t-9	Pair 2	0.0366	1.6098	1.0620	Do not Reject H0	0.6854	-0.6099	0.9141	Do not Reject H0	Pair 2	t-9
t-8	Pair 3	0.0094	1.6120	0.1679	Do not Reject H0	0.1474	-0.0885	0.1337	Do not Reject H0	Pair 3	t-8
t-7	Pair 4	0.0071	2.6892	0.2682	Do not Reject H0	0.0422	-0.5516	0.0654	Do not Reject H0	Pair 4	t-7
t-6	Pair 5	0.0053	2.2404	-0.7737	Do not Reject H0	0.2857	0.9365	-0.6361	Do not Reject H0	Pair 5	t-6
t-5	Pair 6	0.0018	4.2878	-0.6550	Do not Reject H0	-0.0574	0.3287	-1.0010	Do not Reject H0	Pair 6	t-5
t-4	Pair 7	-0.0253	1.8552	-2.2340	Do not Reject H0	-0.3904	0.4275	-1.7913	Do not Reject H0	Pair 7	t-4
t-3	Pair 8	-0.0174	1.3447	-0.9826	Do not Reject H0	-0.1662	0.9361	-1.2202	Do not Reject H0	Pair 8	t-3
t-2	Pair 9	0.0088	1.4740	0.8004	Do not Reject H0	-0.1516	-0.4328	0.8620	Do not Reject H0	Pair 9	t-2
t-1	Pair 10	0.0037	1.5512	0.5649	Do not Reject H0	0.0922	0.0404	0.4939	Do not Reject H0	Pair 10	t-1
t0	Pair 11	0.0074	1.3544	-2.6026	Do not Reject H0	0.5577	-0.3494	-2.7977	Do not Reject H0	Pair 11	t0
t+1	Pair 12	0.0103	1.3977	0.2613	Do not Reject H0	-0.0082	0.1981	-0.1908	Do not Reject H0	Pair 12	t+1
t+2	Pair 13	-0.0187	1.3479	-0.2686	Do not Reject H0	-0.1469	-0.8502	0.5828	Do not Reject H0	Pair 13	t+2
t+3	Pair 14	-0.0043	1.3844	1.6470	Do not Reject H0	-0.0606	-0.7328	2.2725	Do not Reject H0	Pair 14	t+3
t+4	Pair 15	0.0142	1.5018	0.5132	Do not Reject H0	0.1130	0.4192	-0.2791	Do not Reject H0	Pair 15	t+4
t+5	Pair 16	-0.0436	1.0686	-1.2982	Do not Reject H0	-0.5362	-0.3300	-1.9543	Do not Reject H0	Pair 16	t+5
t+6	Pair 17	0.0385	1.3758	1.8949	Do not Reject H0	0.7136	-0.3410	3.5293 **		Pair 17	t+6
t+7	Pair 18	-0.0149	1.3369	-1.5915	Do not Reject H0	-0.3926	-0.0346	-0.9567	Do not Reject H0	Pair 18	t+7
t+8	Pair 19	-0.0045	1.3206	-0.3201	Do not Reject H0	-0.1657	-0.0303	-0.2702	Do not Reject H0	Pair 19	t+8
t+9	Pair 20	-0.0024	1.3232	0.0000	Do not Reject H0	-0.0178	0.1902	0.1149	Do not Reject H0	Pair 20	t+9
t+10	Pair 21	-0.0113	1.1397	-6.2729 *		-0.1633	0.2826	-3.9189 **		Pair 21	t+10
t+11	Pair 22	-0.0012	1.2097	0.4581	Do not Reject H0	-0.0380	-0.1540	0.8161	Do not Reject H0	Pair 22	t+11
t+12	Pair 23	0.0104	1.2719	0.3113	Do not Reject H0	0.1045	-0.2358	0.2078	Do not Reject H0	Pair 23	t+12
t+13	Pair 24	-0.0114	1.1346	-1.3153	Do not Reject H0	-0.3152	0.0963	-0.8429	Do not Reject H0	Pair 24	t+13
t+14	Pair 25	-0.0439	0.8852	-2.1672	Do not Reject H0	-0.9713	-0.3942	-1.6283	Do not Reject H0	Pair 25	t+14
t+15	Pair 26	0.0002	0.8591	-0.7049	Do not Reject H0	0.0212	0.0542	-0.5184	Do not Reject H0	Pair 26	t+15
t+16	Pair 27	-0.0007	0.8235	0.0651	Do not Reject H0	0.0389	0.1667	-0.3571	Do not Reject H0	Pair 27	t+16
t+17	Pair 28	-0.0017	0.6349	-1.6665	Do not Reject H0	0.0363	1.5708	-1.4571	Do not Reject H0	Pair 28	t+17
t+18	Pair 29	-0.0084	0.5298	-0.6149	Do not Reject H0	-0.3508	-0.2555	-0.3522	Do not Reject H0	Pair 29	t+18
t+19	Pair 30	-0.0073	0.5453	-0.3387	Do not Reject H0	-0.0408	-0.2976	0.7104	Do not Reject H0	Pair 30	t+19
t+20	Pair 31	-0.0122	0.5067	-0.1724	Do not Reject H0	-0.3124	-0.5537	0.4105	Do not Reject H0	Pair 31	t+20
t+21	Pair 32	-0.0034	0.5514	0.9128	Do not Reject H0	0.0511	-0.7557	1.3226	Do not Reject H0	Pair 32	t+21
t+22	Pair 33	0.0106	0.6569	-0.2729	Do not Reject H0	0.2385	0.6178	-0.2694	Do not Reject H0	Pair 33	t+22
t+23	Pair 34	-0.0328	0.4943	-2.1799	Do not Reject H0	-0.5769	0.4896	-1.9365	Do not Reject H0	Pair 34	t+23
t+24	Pair 35	0.0268	0.5782	1.2671	Do not Reject H0	0.3310	-0.0474	0.9672	Do not Reject H0	Pair 35	t+24
t+25	Pair 36	0.0220	0.9056	1.5609	Do not Reject H0	0.7625	-0.7829	1.4981	Do not Reject H0	Pair 36	t+25
t+26	Pair 37	0.0122	0.8916	0.3938	Do not Reject H0	0.4072	0.3860	-0.5247	Do not Reject H0	Pair 37	t+26

Table 4.8 Significance Test for Cash Deal vs. Stock Deal – Acquiring Company based on Abnormal Returns (continued)

Non-Standardized Abnormal Return						Standardized Abnormal Return					
Event Window	Pair n	Cash - Average (AAR)	Stock - Average (AAR)	t-stat	Significance	Cash - Average (SAAR)	Stock - Average (SAAR)	t-stat	Significance	Pair n	Event Window
t+27	Pair 38	-0.0041	0.7762	-0.6779	Do not Reject H0	-0.2855	0.1827	-1.0629	Do not Reject H0	Pair 38	t+27
t+28	Pair 39	-0.0014	0.9520	2.4101	Do not Reject H0	-0.1157	-1.1453	3.3903	**	Pair 39	t+28
t+29	Pair 40	0.0095	0.9292	-0.5952	Do not Reject H0	0.4122	0.3211	-0.3205	Do not Reject H0	Pair 40	t+29
t+30	Pair 41	0.0035	1.0766	1.0166	Do not Reject H0	0.1973	-0.4236	1.3844	Do not Reject H0	Pair 41	t+30
t+31	Pair 42	-0.0108	1.1062	0.2839	Do not Reject H0	-0.2417	-0.0887	0.0809	Do not Reject H0	Pair 42	t+31
t+32	Pair 43	-0.0269	0.9113	-1.1252	Do not Reject H0	-0.3420	0.6843	-1.2016	Do not Reject H0	Pair 43	t+32
t+33	Pair 44	0.0297	0.9696	0.7141	Do not Reject H0	0.3512	0.9276	-0.2600	Do not Reject H0	Pair 44	t+33
t+34	Pair 45	-0.0215	0.8399	-2.9141	Do not Reject H0	-0.6267	0.6200	-2.2473	Do not Reject H0	Pair 45	t+34
t+35	Pair 46	0.0076	0.8962	0.9024	Do not Reject H0	0.3379	-0.3034	1.6109	Do not Reject H0	Pair 46	t+35
t+36	Pair 47	-0.0046	0.9252	0.8651	Do not Reject H0	-0.1524	-0.5106	1.0149	Do not Reject H0	Pair 47	t+36
t+37	Pair 48	-0.0246	0.8561	-3.2090	**	-0.7226	-0.0571	-1.2406	Do not Reject H0	Pair 48	t+37
t+38	Pair 49	-0.0090	0.9105	0.0558	Do not Reject H0	-0.1968	-0.5203	0.7596	Do not Reject H0	Pair 49	t+38
t+39	Pair 50	-0.0153	0.8892	-0.1267	Do not Reject H0	-0.3751	-0.6720	0.2575	Do not Reject H0	Pair 50	t+39
t+40	Pair 51	0.0181	0.9368	1.0720	Do not Reject H0	0.3683	-0.1097	0.9259	Do not Reject H0	Pair 51	t+40
t+41	Pair 52	0.0268	1.0717	1.9051	Do not Reject H0	1.0345	-0.2531	2.3451	Do not Reject H0	Pair 52	t+41
t+42	Pair 53	-0.0116	1.0304	-1.1841	Do not Reject H0	-0.3730	0.1622	-0.8222	Do not Reject H0	Pair 53	t+42
t+43	Pair 54	-0.0163	1.0311	-0.2777	Do not Reject H0	-0.5066	-0.6958	0.5324	Do not Reject H0	Pair 54	t+43
t+44	Pair 55	-0.0079	0.9597	-1.2015	Do not Reject H0	-0.2712	0.5610	-1.4782	Do not Reject H0	Pair 55	t+44
t+45	Pair 56	0.0194	1.0708	0.6445	Do not Reject H0	0.3908	-0.3887	0.7173	Do not Reject H0	Pair 56	t+45
t+46	Pair 57	-0.0190	1.1222	2.2817	Do not Reject H0	-0.2485	-1.3350	2.6346	Do not Reject H0	Pair 57	t+46
t+47	Pair 58	-0.0041	1.0361	-1.2644	Do not Reject H0	-0.2757	0.7971	-1.6349	Do not Reject H0	Pair 58	t+47
t+48	Pair 59	-0.0181	1.0601	0.1108	Do not Reject H0	-0.6042	-0.3600	0.0656	Do not Reject H0	Pair 59	t+48
t+49	Pair 60	-0.0199	0.9087	-6.0572	*	-0.6194	0.6106	-3.5077	**	Pair 60	t+49
t+50	Pair 61	-0.0353	0.7886	-1.3211	Do not Reject H0	-0.6980	-0.0716	-1.7953	Do not Reject H0	Pair 61	t+50
t+51	Pair 62	0.0013	0.9269	1.2647	Do not Reject H0	-0.0081	-0.5428	1.7769	Do not Reject H0	Pair 62	t+51
t+52	Pair 63	0.0292	0.8929	0.0964	Do not Reject H0	0.3730	0.7122	-1.8962	Do not Reject H0	Pair 63	t+52
t+53	Pair 64	-0.0031	0.8252	-0.0228	Do not Reject H0	0.0002	-0.3667	0.1010	Do not Reject H0	Pair 64	t+53
t+54	Pair 65	-0.0270	0.7191	-1.8540	Do not Reject H0	-0.4690	0.7735	-1.8262	Do not Reject H0	Pair 65	t+54
t+55	Pair 66	0.0050	0.7566	0.6553	Do not Reject H0	0.1995	-0.3380	0.9226	Do not Reject H0	Pair 66	t+55
t+56	Pair 67	0.0041	0.8013	1.7430	Do not Reject H0	0.1253	-0.3494	1.6662	Do not Reject H0	Pair 67	t+56
t+57	Pair 68	-0.0128	0.6718	-3.2074	**	-0.3024	0.8269	-2.9640	Do not Reject H0	Pair 68	t+57
t+58	Pair 69	-0.0005	0.7181	-0.3895	Do not Reject H0	0.3717	-0.4082	0.8331	Do not Reject H0	Pair 69	t+58
t+59	Pair 70	-0.0252	0.6694	-0.4598	Do not Reject H0	-0.4952	-0.4257	-0.0377	Do not Reject H0	Pair 70	t+59
t+60	Pair 71	0.0311	0.7740	2.0249	Do not Reject H0	0.4703	-0.2000	5.4289	*	Pair 71	t+60

Note: * Significance at $\alpha = 1\%$

** Significance at $\alpha = 5\%$

Source: Author analysis

Table 4.9 Significance Test for Cash Deal vs. Stock Deal - Acquiring Company based on Cumulative Abnormal Returns

Non-Standardized Cumulative Abnormal Return						Standardized Cumulative Abnormal Return					
Event Window	Pair n	Cash - Average (CAAR)	Stock - Average (CAAR)	t-stat	Significance	Cash - Average (SCAAR)	Stock - Average (SCAAR)	t-stat	Significance	Pair n	Event Window
t-10	Pair 1	0.0112	-0.0065	0.6341	Do not Reject H0	0.4895	-0.6060	1.0247	Do not Reject H0	Pair 1	t-10
t-9	Pair 2	0.0478	-0.0257	1.6271	Do not Reject H0	1.1749	-1.2160	2.1509	Do not Reject H0	Pair 2	t-9
t-8	Pair 3	0.0572	-0.0192	1.6354	Do not Reject H0	1.3223	-1.1275	2.0113	Do not Reject H0	Pair 3	t-8
t-7	Pair 4	0.0643	-0.0379	5.0527	*	1.3646	-1.6790	3.4557	**	Pair 4	t-7
t-6	Pair 5	0.0695	-0.0115	3.6866	**	1.6503	-0.7425	2.0442	Do not Reject H0	Pair 5	t-6
t-5	Pair 6	0.0713	-0.0061	9.8613	*	1.5928	-0.4138	2.8657	Do not Reject H0	Pair 6	t-5
t-4	Pair 7	0.0460	0.0028	2.4761	Do not Reject H0	1.2024	0.0136	2.0677	Do not Reject H0	Pair 7	t-4
t-3	Pair 8	0.0286	0.0236	0.1276	Do not Reject H0	1.0363	0.9497	0.3696	Do not Reject H0	Pair 8	t-3
t-2	Pair 9	0.0375	0.0152	1.0521	Do not Reject H0	0.8847	0.5169	0.7540	Do not Reject H0	Pair 9	t-2
t-1	Pair 10	0.0412	0.0157	1.3968	Do not Reject H0	0.9769	0.5574	0.8330	Do not Reject H0	Pair 10	t-1
t0	Pair 11	0.0486	0.0289	0.2315	Do not Reject H0	1.5346	0.9067	0.0627	Do not Reject H0	Pair 11	t0

Table 4.9 Significance Test for Cash Deal vs. Stock Deal – Acquiring Company based on Cumulative Abnormal Returns (continued)

Non-Standardized Cumulative Abnormal Return					Standardized Cumulative Abnormal Return						
Event Window	Pair n	Cash - Average (CAAR)	Stock - Average (CAAR)	t-stat	Significance	Cash - Average (SCAAR)	Stock - Average (SCAAR)	t-stat	Significance	Pair n	Event Window
t+1	Pair 12	0.0588	0.0295	0.6055	Do not Reject H0	1.5265	1.1048	-0.0661	Do not Reject H0	Pair 12	t+1
t+2	Pair 13	0.0401	0.0173	0.1626	Do not Reject H0	1.3796	0.2547	0.2760	Do not Reject H0	Pair 13	t+2
t+3	Pair 14	0.0358	-0.0054	0.5044	Do not Reject H0	1.3190	-0.4781	0.5959	Do not Reject H0	Pair 14	t+3
t+4	Pair 15	0.0500	0.0014	1.1838	Do not Reject H0	1.4321	-0.0589	0.7002	Do not Reject H0	Pair 15	t+4
t+5	Pair 16	0.0063	0.0093	-0.4666	Do not Reject H0	0.8959	0.2711	-0.0468	Do not Reject H0	Pair 16	t+5
t+6	Pair 17	0.0449	0.0024	0.4336	Do not Reject H0	1.6096	-0.0700	0.4791	Do not Reject H0	Pair 17	t+6
t+7	Pair 18	0.0299	0.0065	0.0399	Do not Reject H0	1.2170	-0.1046	0.3181	Do not Reject H0	Pair 18	t+7
t+8	Pair 19	0.0255	0.0055	-0.0220	Do not Reject H0	1.0512	-0.1348	0.2519	Do not Reject H0	Pair 19	t+8
t+9	Pair 20	0.0231	0.0110	-0.0176	Do not Reject H0	1.0335	0.0553	0.2402	Do not Reject H0	Pair 20	t+9
t+10	Pair 21	0.0118	0.0161	-0.3383	Do not Reject H0	0.8702	0.3379	-0.0262	Do not Reject H0	Pair 21	t+10
t+11	Pair 22	0.0106	0.0139	-0.2147	Do not Reject H0	0.8322	0.1839	-0.1303	Do not Reject H0	Pair 22	t+11
t+12	Pair 23	0.0210	0.0109	-0.1063	Do not Reject H0	0.9366	-0.0519	0.1753	Do not Reject H0	Pair 23	t+12
t+13	Pair 24	0.0096	0.0121	-0.3474	Do not Reject H0	0.6214	0.0444	0.0029	Do not Reject H0	Pair 24	t+13
t+14	Pair 25	-0.0344	-0.0016	-0.8177	Do not Reject H0	-0.3499	-0.3498	-0.2033	Do not Reject H0	Pair 25	t+14
t+15	Pair 26	-0.0342	-0.0026	-0.8706	Do not Reject H0	-0.3287	-0.2956	-0.2546	Do not Reject H0	Pair 26	t+15
t+16	Pair 27	-0.0349	-0.0074	-0.9442	Do not Reject H0	-0.2898	-0.1288	-0.3792	Do not Reject H0	Pair 27	t+16
t+17	Pair 28	-0.0366	0.0292	-1.3617	Do not Reject H0	-0.2535	1.4420	-1.0987	Do not Reject H0	Pair 28	t+17
t+18	Pair 29	-0.0450	0.0257	-1.6154	Do not Reject H0	-0.6043	1.1865	-1.2936	Do not Reject H0	Pair 29	t+18
t+19	Pair 30	-0.0523	0.0188	-1.5770	Do not Reject H0	-0.6451	0.8888	-1.2512	Do not Reject H0	Pair 30	t+19
t+20	Pair 31	-0.0645	0.0070	-1.6728	Do not Reject H0	-0.9575	0.3351	-1.4102	Do not Reject H0	Pair 31	t+20
t+21	Pair 32	-0.0679	-0.0149	-1.5621	Do not Reject H0	-0.9064	-0.4206	-1.1148	Do not Reject H0	Pair 32	t+21
t+22	Pair 33	-0.0573	0.0068	-1.3106	Do not Reject H0	-0.6679	0.1972	-0.8747	Do not Reject H0	Pair 33	t+22
t+23	Pair 34	-0.0902	0.0148	-1.7040	Do not Reject H0	-1.2448	0.6868	-1.8382	Do not Reject H0	Pair 34	t+23
t+24	Pair 35	-0.0634	0.0157	-1.4968	Do not Reject H0	-0.9138	0.6395	-1.1739	Do not Reject H0	Pair 35	t+24
t+25	Pair 36	-0.0414	-0.0061	-0.7770	Do not Reject H0	-0.1513	-0.1434	-0.1387	Do not Reject H0	Pair 36	t+25
t+26	Pair 37	-0.0292	0.0021	-0.8050	Do not Reject H0	0.2559	-0.2425	-0.2496	Do not Reject H0	Pair 37	t+26
t+27	Pair 38	-0.0333	0.0057	-1.0443	Do not Reject H0	-0.0296	0.4252	-0.5763	Do not Reject H0	Pair 38	t+27
t+28	Pair 39	-0.0347	-0.0226	-0.6859	Do not Reject H0	-0.1453	-0.7201	-0.0294	Do not Reject H0	Pair 39	t+28
t+29	Pair 40	-0.0253	-0.0075	-0.7304	Do not Reject H0	0.2669	-0.3989	-0.1055	Do not Reject H0	Pair 40	t+29
t+30	Pair 41	-0.0218	-0.0179	-0.4521	Do not Reject H0	0.4641	-0.8225	0.1985	Do not Reject H0	Pair 41	t+30
t+31	Pair 42	-0.0326	-0.0325	-0.3984	Do not Reject H0	0.2224	-0.9112	0.2317	Do not Reject H0	Pair 42	t+31
t+32	Pair 43	-0.0596	-0.0087	-0.7658	Do not Reject H0	-0.1196	-0.2268	-0.1077	Do not Reject H0	Pair 43	t+32
t+33	Pair 44	-0.0299	0.0087	-0.6522	Do not Reject H0	0.2316	0.7007	-0.2230	Do not Reject H0	Pair 44	t+33
t+34	Pair 45	-0.0514	0.0284	-0.9101	Do not Reject H0	-0.3951	1.3207	-0.5267	Do not Reject H0	Pair 45	t+34
t+35	Pair 46	-0.0438	0.0223	-0.7958	Do not Reject H0	-0.0572	1.0173	-0.3594	Do not Reject H0	Pair 46	t+35
t+36	Pair 47	-0.0484	0.0057	-0.7383	Do not Reject H0	-0.2096	0.5067	-0.2499	Do not Reject H0	Pair 47	t+36
t+37	Pair 48	-0.0730	0.0024	-0.8768	Do not Reject H0	-0.9322	0.4495	-0.3640	Do not Reject H0	Pair 48	t+37
t+38	Pair 49	-0.0820	-0.0093	-0.7673	Do not Reject H0	-1.1289	-0.0707	-0.2107	Do not Reject H0	Pair 49	t+38
t+39	Pair 50	-0.0973	-0.0291	-0.8097	Do not Reject H0	-1.5041	-0.7427	-0.1716	Do not Reject H0	Pair 50	t+39
t+40	Pair 51	-0.0792	-0.0324	-0.7156	Do not Reject H0	-1.1358	-0.8525	-0.0293	Do not Reject H0	Pair 51	t+40
t+41	Pair 52	-0.0524	-0.0378	-0.4611	Do not Reject H0	-0.1013	-1.1056	0.2339	Do not Reject H0	Pair 52	t+41
t+42	Pair 53	-0.0641	-0.0353	-0.5371	Do not Reject H0	-0.4742	-0.9434	0.1377	Do not Reject H0	Pair 53	t+42
t+43	Pair 54	-0.0804	-0.0511	-0.5359	Do not Reject H0	-0.9808	-1.6392	0.1770	Do not Reject H0	Pair 54	t+43
t+44	Pair 55	-0.0883	-0.0319	-0.6711	Do not Reject H0	-1.2520	-1.0782	0.0087	Do not Reject H0	Pair 55	t+44
t+45	Pair 56	-0.0689	-0.0396	-0.4628	Do not Reject H0	-0.8612	-1.4669	0.1231	Do not Reject H0	Pair 56	t+45
t+46	Pair 57	-0.0879	-0.0821	-0.3696	Do not Reject H0	-1.1098	-2.8020	0.3306	Do not Reject H0	Pair 57	t+46
t+47	Pair 58	-0.0921	-0.0600	-0.5267	Do not Reject H0	-1.3855	-2.0049	0.1613	Do not Reject H0	Pair 58	t+47
t+48	Pair 59	-0.1102	-0.0733	-0.4823	Do not Reject H0	-1.9896	-2.3649	0.1547	Do not Reject H0	Pair 59	t+48
t+49	Pair 60	-0.1300	-0.0589	-0.7708	Do not Reject H0	-2.6091	-1.7543	-0.1136	Do not Reject H0	Pair 60	t+49
t+50	Pair 61	-0.1654	-0.0612	-1.0179	Do not Reject H0	-3.3070	-1.8259	-0.2262	Do not Reject H0	Pair 61	t+50
t+51	Pair 62	-0.1640	-0.0732	-0.7350	Do not Reject H0	-3.3152	-2.3687	0.0105	Do not Reject H0	Pair 62	t+51
t+52	Pair 63	-0.1348	-0.0513	-0.8023	Do not Reject H0	-2.9421	-1.6565	-0.1388	Do not Reject H0	Pair 63	t+52
t+53	Pair 64	-0.1379	-0.0602	-0.9406	Do not Reject H0	-2.9419	-2.0232	-0.1459	Do not Reject H0	Pair 64	t+53
t+54	Pair 65	-0.1649	-0.0303	-1.1694	Do not Reject H0	-3.4109	-1.2497	-0.4628	Do not Reject H0	Pair 65	t+54
t+55	Pair 66	-0.1599	-0.0415	-1.0867	Do not Reject H0	-3.2114	-1.5877	-0.3752	Do not Reject H0	Pair 66	t+55
t+56	Pair 67	-0.1558	-0.0556	-0.9909	Do not Reject H0	-3.0861	-1.9371	-0.2549	Do not Reject H0	Pair 67	t+56
t+57	Pair 68	-0.1686	-0.0300	-1.2764	Do not Reject H0	-3.3885	-1.1103	-0.5483	Do not Reject H0	Pair 68	t+57

Table 4.9 Significance Test for Cash Deal vs. Stock Deal – Acquiring Company based on Cumulative Abnormal Returns (continued)

Non-Standardized Cumulative Abnormal Return						Standardized Cumulative Abnormal Return					
Event Window	Pair n	Cash - Average (CAAR)	Stock - Average (CAAR)	t-stat	Significance	Cash - Average (SCAAR)	Stock - Average (SCAAR)	t-stat	Significance	Pair n	Event Window
t+58	Pair 69	-0.1691	-0.0389	-1.1716	Do not Reject H0	-3.0167	-1.5184	-0.4574	Do not Reject H0	Pair 69	t+58
t+59	Pair 70	-0.1942	-0.0468	-1.2818	Do not Reject H0	-3.5120	-1.9441	-0.5015	Do not Reject H0	Pair 70	t+59
t+60	Pair 71	-0.1631	-0.0494	-1.0492	Do not Reject H0	-3.0417	-2.1442	-0.2744	Do not Reject H0	Pair 71	t+60

Note: * Significance at $\alpha = 1\%$

** Significance at $\alpha = 5\%$

Source: Author analysis

4.4.2. Analysis for Cash Deal vs. Stock Deal –Acquiring Company

According to the significance test, stockholders of Acquiring/Surviving company who used cash deal (Group 3) and stockholders of Acquiring/Surviving company who used stock deal (Group 4) received no significant different ARs prior to and upon the announcement of M&A. However, cash deal resulted in significantly lower ARs compared to stock deal post announcement of M&A; on (1) t_{+10} by average (AAR) of -0.0113 against Group 4's AAR of 1.1397 at $t_{\alpha} = 1\%$, (2) t_{+37} by AAR of -0.0246 against Group 4's AAR of 0.8561 at $t_{\alpha} = 5\%$, (3) t_{+49} of -0.0199 against Group 4's AAR of 0.9087 at $t_{\alpha} = 1\%$ and (4) t_{+57} of -0.0128 against Group 4's AAR of 0.6718 at $t_{\alpha} = 5\%$ (Table 4.8, Left hand-side). Consequently, H_0 was only rejected post announcement; on t_{+10} , t_{+37} , t_{+39} , and t_{+57} .

If ARs were standardized, there were still no significant different standardized ARs (SARs) received between Group 3 and Group 4 prior to and upon the announcement of M&A. Significant different SARs only occurred post announcement of M&A with following details; on (1) t_{+6} by average SAR (SAAR) of 0.7136 against Group 4's SAAR of -0.3410 at $t_{\alpha} = 5\%$, (2) t_{+10} by SAAR of -0.1633 against Group 4's SAAR of 0.2826 at $t_{\alpha} = 5\%$, (3) t_{+28} by SAAR of -0.1157 against Group 4's SAAR of -1.1453 at $t_{\alpha} = 5\%$, (4) t_{+49} by SAAR of -0.6194 against Group 4's SAAR of 0.6106 at $t_{\alpha} = 5\%$ and (5) t_{+60} by SAAR of 0.4703 against Group 4's SAAR of -0.2000 at $t_{\alpha} = 1\%$ (Table 4.8, Right hand-side).

There were significant differences in cumulative ARs (CARs) received between Group 3 and Group 4 only prior to the announcement of M&A; on (1) t_{-7}

by average (*CAAR*) of 0.0643 against Group 4's *CAAR* of -0.0379 at $t_\alpha = 1\%$, (2) t_6 by *CAAR* of 0.0695 against Group 4's *CAAR* of -0.0115 at $t_\alpha = 5\%$ and (3) t_5 by *CAAR* of 0.0713 against Group 4's *CAAR* of -0.0061 at $t_\alpha = 1\%$ (Table 4.9, Left hand-side). Thus, market responded positively to the M&A that were financed by cash rather than by stocks, causing Group 3 received higher significant *CARs* compare to Group 4 on the aforementioned days. Supposed the *CARs* across the event window were standardized, then Group 3 received significantly different standardized *CARs* (*SCARs*) compare to Group 4 only on t_7 by average (*SCAAR*) of 1.3646 compare to Group 4' *SCAAR* of -1.6790 at $t_\alpha = 5\%$.

In conclusion, M&A deals financed with stocks have different abnormal effects from M&A deals that are financed with cash - market was in favor of Acquiring/Surviving company which financed the deals by stocks rather than by cash in terms of daily abnormal returns. But when the returns were cumulated, then Acquiring/surviving company which financed the deals by cash became favorable. Some possible reasons include; (1) intuitively, stock-financed M&A (definitely) results in issuance of new shares which eventually brings dilution effects to existing shareholders of Acquiring/Surviving company, (2) as a matter of fact, Acquiring/Surviving company in Indonesia paid higher average premium (24.44%) compared to those globally (18.99%) for the period of 2004-2010 creating higher transfer of wealth from one group of stockholders to another. The fact that there were significant positive *CAR* and *SCAR* prior to the news leads the author to conclude that the market already anticipated the M&A deals before they were announced publicly, (3) M&A theory explains that the different abnormal effects from M&A deals are caused by information differences between managers and outside. The underlying idea is that, "managers are more likely to issue equity when they perceive that it is overvalued by the stock market than when undervalued. Consequently, investors observed an equity issue bid down the stock price" (Myers and Majluf, 1984 in Andrade, Mitchell, and Stafford, 2001: 111).

4.4.3. Empirical Results for Cash Deal vs. Stock Deal – Target

A two-tail t_{test} with a significance level of 5% is employed in order to see whether market reacted differently if Target obtained cash or stocks in M&A deals. The empirical results of the test are summarized in following tables;

Table 4.10 Significance Test for Cash Deal vs. Stock Deal – Target based on Abnormal Returns

		Non-Standardized Abnormal Return				Standardized Abnormal Return					
Event Window	Pair n	Cash - Average (AAR)	Stock - Average (AAR)	t-stat	Significance	Cash - Average (SAAR)	Stock - Average (SAAR)	t-stat	Significance	Pair n	Event Window
t-10	Pair 1	0.0011	-0.0073	0.9883	Do not Reject H0	-0.0361	-0.1955	0.4848	Do not Reject H0	Pair 1	t-10
t-9	Pair 2	-0.0028	0.0126	-0.5357	Do not Reject H0	-0.1586	0.4695	-1.2303	Do not Reject H0	Pair 2	t-9
t-8	Pair 3	-0.0011	0.0256	-0.0598	Do not Reject H0	0.2336	0.8895	-0.1737	Do not Reject H0	Pair 3	t-8
t-7	Pair 4	0.0025	-0.0039	0.4786	Do not Reject H0	0.0578	-0.1388	0.3627	Do not Reject H0	Pair 4	t-7
t-6	Pair 5	-0.0049	-0.0013	-0.5917	Do not Reject H0	-0.2324	0.0369	-0.9142	Do not Reject H0	Pair 5	t-6
t-5	Pair 6	0.0040	0.0132	-1.2829	Do not Reject H0	0.1246	0.6152	-1.2133	Do not Reject H0	Pair 6	t-5
t-4	Pair 7	0.0025	-0.0213	1.9555	Do not Reject H0	0.1999	-0.7861	2.0510	Do not Reject H0	Pair 7	t-4
t-3	Pair 8	0.0114	-0.0020	0.7601	Do not Reject H0	0.3333	-0.0711	0.3642	Do not Reject H0	Pair 8	t-3
t-2	Pair 9	0.0088	-0.0037	-0.0443	Do not Reject H0	0.3263	-0.1641	0.4319	Do not Reject H0	Pair 9	t-2
t-1	Pair 10	0.0073	0.0163	-0.9215	Do not Reject H0	0.4261	0.5033	-0.8139	Do not Reject H0	Pair 10	t-1
t0	Pair 11	0.0230	0.1443	-1.9594	Do not Reject H0	0.6133	4.6547	-1.9502	Do not Reject H0	Pair 11	t0
t+1	Pair 12	-0.0086	0.0127	-0.9530	Do not Reject H0	-0.1305	0.3147	-0.9127	Do not Reject H0	Pair 12	t+1
t+2	Pair 13	0.0006	0.0019	-0.2375	Do not Reject H0	-0.1200	-0.0180	-0.6637	Do not Reject H0	Pair 13	t+2
t+3	Pair 14	0.0129	-0.0187	1.3057	Do not Reject H0	0.1721	-0.7508	1.4844	Do not Reject H0	Pair 14	t+3
t+4	Pair 15	-0.0067	0.0052	-1.9189	Do not Reject H0	-0.1790	0.1577	-1.7291	Do not Reject H0	Pair 15	t+4
t+5	Pair 16	-0.0002	0.0186	-1.4196	Do not Reject H0	0.1261	0.7370	-1.2259	Do not Reject H0	Pair 16	t+5
t+6	Pair 17	-0.0024	-0.0114	0.3935	Do not Reject H0	-0.2247	-0.4432	-0.0661	Do not Reject H0	Pair 17	t+6
t+7	Pair 18	0.0016	-0.0030	0.1760	Do not Reject H0	0.1432	-0.0021	0.5663	Do not Reject H0	Pair 18	t+7
t+8	Pair 19	-0.0071	0.0152	-1.4319	Do not Reject H0	-0.1875	-0.3533	-1.2850	Do not Reject H0	Pair 19	t+8
t+9	Pair 20	0.0127	-0.0025	1.7996	Do not Reject H0	0.2911	-0.1755	2.3783	Do not Reject H0	Pair 20	t+9
t+10	Pair 21	-0.0019	0.0011	-2.6928	Do not Reject H0	0.0397	0.1342	-4.8921 *		Pair 21	t+10
t+11	Pair 22	-0.0013	0.0138	-1.0289	Do not Reject H0	-0.1025	0.4879	-1.6537	Do not Reject H0	Pair 22	t+11
t+12	Pair 23	-0.0084	0.0127	-0.8629	Do not Reject H0	-0.2912	0.3459	-0.7381	Do not Reject H0	Pair 23	t+12
t+13	Pair 24	-0.0015	0.0066	-0.0483	Do not Reject H0	0.0439	0.1857	0.0891	Do not Reject H0	Pair 24	t+13
t+14	Pair 25	0.0021	-0.0062	2.3499	Do not Reject H0	0.0469	-0.2270	2.2045	Do not Reject H0	Pair 25	t+14
t+15	Pair 26	-0.0076	-0.0011	-0.5835	Do not Reject H0	-0.1755	-0.0454	-0.2672	Do not Reject H0	Pair 26	t+15
t+16	Pair 27	0.0016	-0.0019	0.4573	Do not Reject H0	0.1537	0.0393	0.1008	Do not Reject H0	Pair 27	t+16
t+17	Pair 28	-0.0033	0.0338	-1.1921	Do not Reject H0	-0.1409	1.3845	-1.2722	Do not Reject H0	Pair 28	t+17
t+18	Pair 29	0.0014	-0.0019	0.1151	Do not Reject H0	0.0489	0.2088	-0.1736	Do not Reject H0	Pair 29	t+18
t+19	Pair 30	-0.0005	0.0653	-1.3925	Do not Reject H0	0.0219	1.9890	-1.2419	Do not Reject H0	Pair 30	t+19
t+20	Pair 31	-0.0026	-0.0080	4.2271 *		-0.1605	-0.3288	2.6963	Do not Reject H0	Pair 31	t+20
t+21	Pair 32	-0.0025	0.0147	-1.2995	Do not Reject H0	0.0022	0.4581	-1.5669	Do not Reject H0	Pair 32	t+21
t+22	Pair 33	-0.0054	0.0089	-1.6938	Do not Reject H0	0.0244	0.3429	-1.7687	Do not Reject H0	Pair 33	t+22
t+23	Pair 34	0.0011	0.0014	0.7123	Do not Reject H0	-0.2010	0.1042	0.2632	Do not Reject H0	Pair 34	t+23
t+24	Pair 35	-0.0113	0.0064	-2.0769	Do not Reject H0	-0.1849	0.2621	-4.7339 *		Pair 35	t+24
t+25	Pair 36	0.0113	-0.0020	0.7566	Do not Reject H0	-0.0100	-0.2055	0.3696	Do not Reject H0	Pair 36	t+25
t+26	Pair 37	-0.0063	0.0009	-0.9339	Do not Reject H0	-0.2459	0.0291	-0.8259	Do not Reject H0	Pair 37	t+26
t+27	Pair 38	-0.0069	0.0050	-2.5932	Do not Reject H0	-0.2052	0.2432	-2.9734 **		Pair 38	t+27
t+28	Pair 39	-0.0172	0.0032	-1.1024	Do not Reject H0	-0.6355	0.1039	-1.0024	Do not Reject H0	Pair 39	t+28
t+29	Pair 40	0.0057	-0.0057	1.1119	Do not Reject H0	0.3766	-0.2071	1.4586	Do not Reject H0	Pair 40	t+29
t+30	Pair 41	0.0139	0.0231	0.0434	Do not Reject H0	0.2417	0.4892	-0.7236	Do not Reject H0	Pair 41	t+30
t+31	Pair 42	-0.0042	-0.0202	0.8517	Do not Reject H0	-0.1457	-0.4506	0.7362	Do not Reject H0	Pair 42	t+31
t+32	Pair 43	-0.0014	-0.0017	-0.0884	Do not Reject H0	0.1396	-0.0448	0.4089	Do not Reject H0	Pair 43	t+32
t+33	Pair 44	0.0000	-0.0083	0.3828	Do not Reject H0	-0.0825	-0.2773	0.4026	Do not Reject H0	Pair 44	t+33
t+34	Pair 45	0.0059	0.0073	0.0662	Do not Reject H0	0.2718	0.2260	0.1892	Do not Reject H0	Pair 45	t+34
t+35	Pair 46	-0.0008	-0.0198	1.1492	Do not Reject H0	-0.0275	-0.7359	1.5775	Do not Reject H0	Pair 46	t+35
t+36	Pair 47	0.0106	-0.0077	1.9844	Do not Reject H0	0.3881	-0.3112	1.8254	Do not Reject H0	Pair 47	t+36
t+37	Pair 48	-0.0095	0.0285	-1.6695	Do not Reject H0	-0.2458	0.7071	-2.0634	Do not Reject H0	Pair 48	t+37
t+38	Pair 49	-0.0021	0.0000	-0.4578	Do not Reject H0	-0.0829	0.0021	-0.3524	Do not Reject H0	Pair 49	t+38
t+39	Pair 50	-0.0029	-0.0173	1.4792	Do not Reject H0	0.0080	-0.4951	1.5900	Do not Reject H0	Pair 50	t+39
t+40	Pair 51	0.0031	-0.0071	0.5973	Do not Reject H0	0.0656	-0.1474	0.1626	Do not Reject H0	Pair 51	t+40

Table 4.10 Significance Test for Cash Deal vs. Stock Deal – Target Based on Abnormal Returns (continued)

Non-Standardized Abnormal Return						Standardized Abnormal Return					
Event Window	Pair n	Cash - Average	Stock - Average	t-stat	Significance	Cash - Average	Stock - Average	t-stat	Significance	Pair n	Event Window
		(AAR)	(AAR)			(SAAR)	(SAAR)				
t+41	Pair 52	-0.0058	-0.0164	-0.0591	Do not Reject H0	-0.1854	-0.4687	0.1387	Do not Reject H0	Pair 52	t+41
t+42	Pair 53	0.0000	-0.0141	2.2550	Do not Reject H0	0.0559	-0.6085	2.8745	**	Pair 53	t+42
t+43	Pair 54	-0.0005	-0.0275	0.2903	Do not Reject H0	0.1811	-1.2304	0.6894	Do not Reject H0	Pair 54	t+43
t+44	Pair 55	0.0023	0.0065	-0.8528	Do not Reject H0	0.1546	0.2969	-0.8108	Do not Reject H0	Pair 55	t+44
t+45	Pair 56	-0.0147	-0.0225	0.1070	Do not Reject H0	-0.5076	-0.9356	0.4568	Do not Reject H0	Pair 56	t+45
t+46	Pair 57	-0.0011	-0.0208	2.1202	Do not Reject H0	0.0247	-0.9350	2.1099	Do not Reject H0	Pair 57	t+46
t+47	Pair 58	-0.0026	0.0068	-0.9057	Do not Reject H0	-0.2153	0.2720	-1.1473	Do not Reject H0	Pair 58	t+47
t+48	Pair 59	0.0073	-0.0039	-0.1917	Do not Reject H0	0.3886	-0.1434	0.7073	Do not Reject H0	Pair 59	t+48
t+49	Pair 60	0.0130	-0.0029	2.1414	Do not Reject H0	0.5084	-0.0856	2.0368	Do not Reject H0	Pair 60	t+49
t+50	Pair 61	0.0011	-0.0216	2.2211	Do not Reject H0	0.0977	-0.9194	2.0158	Do not Reject H0	Pair 61	t+50
t+51	Pair 62	-0.0035	0.0023	-0.6746	Do not Reject H0	-0.1088	0.0647	-0.6317	Do not Reject H0	Pair 62	t+51
t+52	Pair 63	0.0001	0.0278	-1.8067	Do not Reject H0	0.0282	1.2901	-1.6617	Do not Reject H0	Pair 63	t+52
t+53	Pair 64	0.0141	-0.0238	3.7936	*	0.3905	-1.0476	2.8918	**	Pair 64	t+53
t+54	Pair 65	0.0034	0.0255	-1.0275	Do not Reject H0	0.2016	0.6430	-0.8667	Do not Reject H0	Pair 65	t+54
t+55	Pair 66	-0.0059	-0.0053	0.5898	Do not Reject H0	-0.0362	-0.2361	1.1749	Do not Reject H0	Pair 66	t+55
t+56	Pair 67	0.0203	-0.0208	1.8760	Do not Reject H0	0.6389	-0.5154	2.5967	Do not Reject H0	Pair 67	t+56
t+57	Pair 68	-0.0098	0.0030	-1.3104	Do not Reject H0	-0.3196	0.1774	-1.2917	Do not Reject H0	Pair 68	t+57
t+58	Pair 69	-0.0015	-0.0028	2.0441	Do not Reject H0	-0.0585	-0.1147	2.8739	**	Pair 69	t+58
t+59	Pair 70	-0.0015	0.0037	-0.8246	Do not Reject H0	-0.0508	0.1277	-0.6595	Do not Reject H0	Pair 70	t+59
t+60	Pair 71	-0.0104	-0.0023	0.2854	Do not Reject H0	-0.3847	-0.0510	0.1379	Do not Reject H0	Pair 71	t+60

Note: * Significance at $\alpha = 1\%$

** Significance at $\alpha = 5\%$

Source: Author analysis

Table 4.11 Significance Test for Cash Deal vs. Stock Deal – Target based on Cumulative Abnormal Returns

Non-Standardized Cumulative Abnormal Return						Standardized Cumulative Abnormal Return					
Event Window	Pair n	Cash - Average	Stock - Average	t-stat	Significance	Cash - Average	Stock - Average	t-stat	Significance	Pair n	Event Window
		(CAAR)	(CAAR)			(SCAAR)	(SCAAR)				
t-10	Pair 1	0.0011	-0.0073	0.9883	Do not Reject H0	-0.0361	-0.1955	0.4848	Do not Reject H0	Pair 1	t-10
t-9	Pair 2	-0.0017	0.0053	-0.0903	Do not Reject H0	-0.1946	0.2740	-0.5453	Do not Reject H0	Pair 2	t-9
t-8	Pair 3	-0.0028	0.0310	0.1623	Do not Reject H0	0.0389	1.1635	-0.4147	Do not Reject H0	Pair 3	t-8
t-7	Pair 4	-0.0002	0.0271	1.0511	Do not Reject H0	0.0967	1.0247	-0.2071	Do not Reject H0	Pair 4	t-7
t-6	Pair 5	-0.0052	0.0258	0.7893	Do not Reject H0	-0.1356	1.0616	-0.3727	Do not Reject H0	Pair 5	t-6
t-5	Pair 6	-0.0012	0.0390	0.2696	Do not Reject H0	-0.0110	1.6768	-0.8428	Do not Reject H0	Pair 6	t-5
t-4	Pair 7	0.0014	0.0177	1.8468	Do not Reject H0	0.1889	0.8907	-0.2410	Do not Reject H0	Pair 7	t-4
t-3	Pair 8	0.0128	0.0157	0.9276	Do not Reject H0	0.5222	0.8196	-0.1169	Do not Reject H0	Pair 8	t-3
t-2	Pair 9	0.0216	0.0120	1.4136	Do not Reject H0	0.8484	0.6555	0.0514	Do not Reject H0	Pair 9	t-2
t-1	Pair 10	0.0289	0.0283	0.3998	Do not Reject H0	1.2746	1.1588	-0.2693	Do not Reject H0	Pair 10	t-1
t0	Pair 11	0.0520	0.1726	-1.3684	Do not Reject H0	1.8879	5.8136	-1.7635	Do not Reject H0	Pair 11	t0
t+1	Pair 12	0.0434	0.1854	-0.0153	Do not Reject H0	1.7574	6.1282	-2.3662	Do not Reject H0	Pair 12	t+1
t+2	Pair 13	0.0440	0.1873	0.1970	Do not Reject H0	1.6374	6.1103	-2.3620	Do not Reject H0	Pair 13	t+2
t+3	Pair 14	0.0570	0.1686	0.8813	Do not Reject H0	1.8094	5.3595	-1.7574	Do not Reject H0	Pair 14	t+3
t+4	Pair 15	0.0502	0.1738	0.3887	Do not Reject H0	1.6304	5.5172	-1.8864	Do not Reject H0	Pair 15	t+4
t+5	Pair 16	0.0501	0.1924	0.1205	Do not Reject H0	1.7565	6.2542	-2.1680	Do not Reject H0	Pair 16	t+5
t+6	Pair 17	0.0477	0.1810	0.5216	Do not Reject H0	1.5319	5.8110	-1.9404	Do not Reject H0	Pair 17	t+6
t+7	Pair 18	0.0492	0.1780	0.4577	Do not Reject H0	1.6751	5.8089	-2.0168	Do not Reject H0	Pair 18	t+7
t+8	Pair 19	0.0422	0.1932	-0.0583	Do not Reject H0	1.4876	6.1622	-1.9756	Do not Reject H0	Pair 19	t+8
t+9	Pair 20	0.0549	0.1907	0.8097	Do not Reject H0	1.7786	5.9867	-1.6606	Do not Reject H0	Pair 20	t+9
t+10	Pair 21	0.0530	0.1918	0.4528	Do not Reject H0	1.8184	6.1209	-1.9629	Do not Reject H0	Pair 21	t+10

Table 4.11 Significance Test for Cash Deal vs. Stock Deal – Target based on Cumulative Abnormal Returns (continued)

Non-Standardized Cumulative Abnormal Return						Standardized Cumulative Abnormal Return					
Event Window	Pair n	Cash - Average (CAAR)	Stock - Average (CAAR)	t-stat	Significance	Cash - Average (SCAAR)	Stock - Average (SCAAR)	t-stat	Significance	Pair n	Event Window
t+11	Pair 22	0.0517	0.2055	0.1805	Do not Reject H0	1.7159	6.6088	-2.0171	Do not Reject H0	Pair 22	t+11
t+12	Pair 23	0.0433	0.2182	0.1576	Do not Reject H0	1.4247	6.9547	-1.9001	Do not Reject H0	Pair 23	t+12
t+13	Pair 24	0.0418	0.2249	0.2919	Do not Reject H0	1.4686	7.1404	-1.7217	Do not Reject H0	Pair 24	t+13
t+14	Pair 25	0.0439	0.2186	0.6759	Do not Reject H0	1.5155	6.9134	-1.6040	Do not Reject H0	Pair 25	t+14
t+15	Pair 26	0.0363	0.2176	0.4365	Do not Reject H0	1.3400	6.8680	-1.4427	Do not Reject H0	Pair 26	t+15
t+16	Pair 27	0.0379	0.2157	0.4510	Do not Reject H0	1.4937	6.9073	-1.4497	Do not Reject H0	Pair 27	t+16
t+17	Pair 28	0.0345	0.2495	-0.0569	Do not Reject H0	1.3528	8.2918	-2.1873	Do not Reject H0	Pair 28	t+17
t+18	Pair 29	0.0359	0.2476	0.3198	Do not Reject H0	1.4017	8.5006	-2.0286	Do not Reject H0	Pair 29	t+18
t+19	Pair 30	0.0354	0.3128	-0.3569	Do not Reject H0	1.4237	10.4896	-2.2455	Do not Reject H0	Pair 30	t+19
t+20	Pair 31	0.0327	0.3048	0.6087	Do not Reject H0	1.2631	10.1608	-2.1580	Do not Reject H0	Pair 31	t+20
t+21	Pair 32	0.0303	0.3195	0.0694	Do not Reject H0	1.2653	10.6189	-2.3918	Do not Reject H0	Pair 32	t+21
t+22	Pair 33	0.0249	0.3284	-0.0771	Do not Reject H0	1.2898	10.9618	-2.4195	Do not Reject H0	Pair 33	t+22
t+23	Pair 34	0.0260	0.3297	0.3508	Do not Reject H0	1.0888	11.0660	-2.3395	Do not Reject H0	Pair 34	t+23
t+24	Pair 35	0.0147	0.3361	-0.2173	Do not Reject H0	0.9039	11.3281	-2.5172	Do not Reject H0	Pair 35	t+24
t+25	Pair 36	0.0259	0.3341	0.2181	Do not Reject H0	0.8940	11.1227	-2.2798	Do not Reject H0	Pair 36	t+25
t+26	Pair 37	0.0197	0.3349	0.0701	Do not Reject H0	0.6481	11.1518	-2.2062	Do not Reject H0	Pair 37	t+26
t+27	Pair 38	0.0128	0.3399	-0.0092	Do not Reject H0	0.4429	11.3950	-2.2665	Do not Reject H0	Pair 38	t+27
t+28	Pair 39	-0.0045	0.3431	-0.2219	Do not Reject H0	-0.1926	11.4989	-2.2605	Do not Reject H0	Pair 39	t+28
t+29	Pair 40	0.0012	0.3373	0.1149	Do not Reject H0	0.1839	11.2918	-2.1490	Do not Reject H0	Pair 40	t+29
t+30	Pair 41	0.0152	0.3604	0.0410	Do not Reject H0	0.4256	11.7809	-2.1136	Do not Reject H0	Pair 41	t+30
t+31	Pair 42	0.0110	0.3402	0.3742	Do not Reject H0	0.2799	11.3303	-2.0449	Do not Reject H0	Pair 42	t+31
t+32	Pair 43	0.0096	0.3386	0.3114	Do not Reject H0	0.4196	11.2855	-2.0984	Do not Reject H0	Pair 43	t+32
t+33	Pair 44	0.0095	0.3302	0.3584	Do not Reject H0	0.3371	11.0082	-2.1217	Do not Reject H0	Pair 44	t+33
t+34	Pair 45	0.0154	0.3375	0.2209	Do not Reject H0	0.6089	11.2343	-1.8516	Do not Reject H0	Pair 45	t+34
t+35	Pair 46	0.0147	0.3177	0.4627	Do not Reject H0	0.5814	10.4984	-1.8041	Do not Reject H0	Pair 46	t+35
t+36	Pair 47	0.0253	0.3100	0.5503	Do not Reject H0	0.9695	10.1872	-1.7573	Do not Reject H0	Pair 47	t+36
t+37	Pair 48	0.0158	0.3385	-0.3235	Do not Reject H0	0.7237	10.8943	-1.9724	Do not Reject H0	Pair 48	t+37
t+38	Pair 49	0.0138	0.3385	0.0911	Do not Reject H0	0.6408	10.8964	-2.0594	Do not Reject H0	Pair 49	t+38
t+39	Pair 50	0.0109	0.3212	0.3200	Do not Reject H0	0.6488	10.4013	-1.9895	Do not Reject H0	Pair 50	t+39
t+40	Pair 51	0.0140	0.3141	0.2201	Do not Reject H0	0.7144	10.2539	-2.0151	Do not Reject H0	Pair 51	t+40
t+41	Pair 52	0.0082	0.2978	0.1366	Do not Reject H0	0.5290	9.7852	-2.0600	Do not Reject H0	Pair 52	t+41
t+42	Pair 53	0.0082	0.2837	0.0606	Do not Reject H0	0.5848	9.1767	-1.9545	Do not Reject H0	Pair 53	t+42
t+43	Pair 54	0.0076	0.2562	-0.0491	Do not Reject H0	0.7659	7.9463	-1.7359	Do not Reject H0	Pair 54	t+43
t+44	Pair 55	0.0099	0.2626	-0.5864	Do not Reject H0	0.9205	8.2432	-1.7989	Do not Reject H0	Pair 55	t+44
t+45	Pair 56	-0.0048	0.2401	-0.5524	Do not Reject H0	0.4129	7.3077	-1.7137	Do not Reject H0	Pair 56	t+45
t+46	Pair 57	-0.0059	0.2193	-0.4077	Do not Reject H0	0.4376	6.3726	-1.4333	Do not Reject H0	Pair 57	t+46
t+47	Pair 58	-0.0085	0.2261	-0.8719	Do not Reject H0	0.2222	6.6447	-1.4608	Do not Reject H0	Pair 58	t+47
t+48	Pair 59	-0.0012	0.2222	-0.9623	Do not Reject H0	0.6109	6.5013	-1.4351	Do not Reject H0	Pair 59	t+48
t+49	Pair 60	0.0118	0.2193	-0.8116	Do not Reject H0	1.1193	6.4157	-1.3940	Do not Reject H0	Pair 60	t+49
t+50	Pair 61	0.0129	0.1977	-0.2723	Do not Reject H0	1.2170	5.4964	-1.1665	Do not Reject H0	Pair 61	t+50
t+51	Pair 62	0.0095	0.2000	-1.0192	Do not Reject H0	1.1082	5.3610	-1.2139	Do not Reject H0	Pair 62	t+51
t+52	Pair 63	0.0095	0.2279	-1.8163	Do not Reject H0	1.1364	6.8511	-1.6001	Do not Reject H0	Pair 63	t+52
t+53	Pair 64	0.0236	0.2041	-0.2401	Do not Reject H0	1.5270	5.8035	-1.2705	Do not Reject H0	Pair 64	t+53
t+54	Pair 65	0.0270	0.2296	-1.5115	Do not Reject H0	1.7286	6.4465	-1.3225	Do not Reject H0	Pair 65	t+54
t+55	Pair 66	0.0211	0.2243	-0.5113	Do not Reject H0	1.6924	6.2104	-1.2061	Do not Reject H0	Pair 66	t+55
t+56	Pair 67	0.0414	0.2035	0.7245	Do not Reject H0	2.3313	5.6949	-0.9437	Do not Reject H0	Pair 67	t+56
t+57	Pair 68	0.0316	0.2065	0.2623	Do not Reject H0	2.0116	5.8724	-1.0857	Do not Reject H0	Pair 68	t+57
t+58	Pair 69	0.0301	0.2037	0.4990	Do not Reject H0	1.9531	5.7576	-1.0325	Do not Reject H0	Pair 69	t+58
t+59	Pair 70	0.0287	0.2073	0.2760	Do not Reject H0	1.9023	5.8853	-1.0499	Do not Reject H0	Pair 70	t+59
t+60	Pair 71	0.0182	0.2050	0.3767	Do not Reject H0	1.5177	5.8343	-0.9776	Do not Reject H0	Pair 71	t+60

Note: * Significance at $\alpha = 1\%$

** Significance at $\alpha = 5\%$

Source: Author analysis

4.4.4. Analysis for Cash Deal vs. Stock Deal – Target

The significance test shows that there were no significantly different ARs received between stockholders of Target who received cash (Group 5) and stockholders

of Target who received stocks (Group 6) prior to and upon the announcement of M&A. There were, however, significantly different ARs received by Group 5 and Group 6 post the announcement as follows; on (1) t_{+20} by average (AAR) of -0.0026 against Group 6's AAR of -0.0080 at $t_\alpha = 1\%$ and (2) t_{+53} by AAR of 0.0141 against Group 6's AAR of -0.0238 at $t_\alpha = 1\%$. Thus, market reacted positively when Target was acquired by cash rather than by stocks causing Group 5 to receive significantly higher AARs compared to Group 6 (Table 4.10, Left hand-side). In addition, there were no significantly different standardized ARs (SARs) received by Group 5 and Group 6 prior to and upon the announcement of M&A.

Both Groups received significant SARs only post announcement; on (1) t_{+10} by average (SAAR) of 0.0397 against Group 6's SAAR of 0.1342 at $t_\alpha = 1\%$, (2) t_{+24} by SAAR of -0.1849 against Group 6's SAAR of 0.2621 at $t_\alpha = 1\%$, (3) t_{+27} by SAAR of -0.2052 against Group 6's SAAR of 0.2432 at $t_\alpha = 5\%$, (4) t_{+42} by SAAR of 0.0559 against Group 6's SAAR of -0.6085 at $t_\alpha = 5\%$, (5) t_{+53} by SAAR of 0.3905 against Group 6's SAAR of -1.0476 at $t_\alpha = 5\%$, and (6) t_{+58} by SAAR of -0.0585 against Group 6's SAAR of -0.1147 at $t_\alpha = 5\%$ (Table 4.10, Right hand-side). Cumulatively, both Groups received no significance different abnormal return whether or not the returns were standardized (Table 4.11).

In conclusion, there were significant differences in abnormal returns received by Group 5 and Group 6 post announcement of M&A. However, the evidence on the significance test does not show a clear cut whether it was better for the stockholders to receive cash or stock in M&A deals. Thus, the abnormal effect received by stockholders of Indonesian Target requires further investigation as theory of tax consideration proposed by Huang and Walkling (1987) - shareholders of Target requires relatively higher premiums in conditions that force them to pay immediate taxes on their gains - does not apply in this research (Indonesia applies sales tax instead of capital gain tax).

4.5. Mini Case study of PT Bank Niaga, Tbk.

PT Bank Niaga, Tbk. (BNGA) announced to public that they intended to merge with PT Lippobank, Tbk (LPBN) on 3 June 2008 by cash. BNGA was

established in September 1955 and was listed on the Jakarta and Surabaya Stock Exchange (now the Indonesia Stock Exchange) in 1989. The Government of Indonesia once protected a majority shareholding of BNGA due to unfavorable economic crisis in the late 1990s. CIMB Group Holdings Berhad (the CIMB Group Holdings) successfully obtained a majority control of Bank Niaga from the

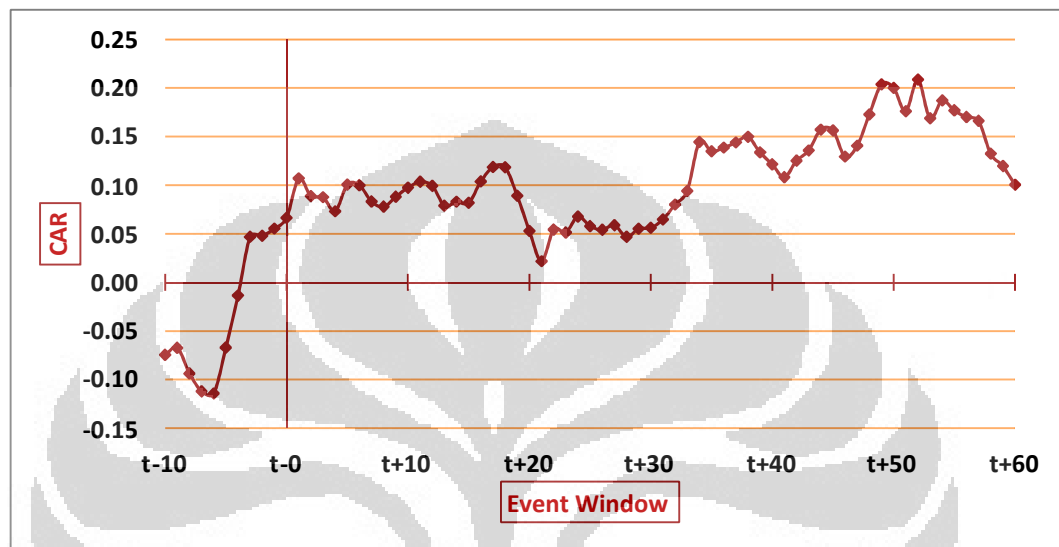


Figure 4.11 Cumulative Abnormal Returns of BNGA

Source: Author analysis

Indonesia Bank Restructuring Agency (IBRA) in 2002. In order for the CIMB Group Holdings to perform an internal reorganization, they consolidated all operating subsidiaries under CIMB Group by transferring their shares in the Bank to CIMB group in 2007. Khazanah, the majority shareholder of CIMB Group Holdings, transferred its shares to CIMB Group in 2008 as part of its internal reorganization following acquisition of majority ownership of LPBN in 2005 (About Us: CIMB Niaga n.d.)

As a result of the merger, BNGA and LPBN have a broad portfolio of banking services in Indonesia; corporate banking services, small-medium enterprises (SMEs) services, mortgages, and payment processing system. The management of BNGA believes that the merger will create a synergy – particularly on revenue enhancement – due to (1) increase in cross selling, (2) increase in lending and deposits, (3) new product development, (4) increase in

fixed income and (5) lower cost of fund as a result of increase in economics of scale (Bisnis Indonesia, 3 January 2008).

Figure 4.11 depicts the cumulative abnormal returns of BNGA 10 days prior to the announcement (t_{-10}) until 60 days post announcement (t_{+60}). It shows that overall, market reacted positively towards the announcement as stockholders obtained an increase in cumulative abnormal returns of 0.1749 from -0.0745 on t_{-10} to 0.1005 on t_{+60} .

The conclusion of hypothesis I points out that the Acquiring/Surviving company's stock price generally falls upon the announcement of the deal. That stockholders of BNGA (intuitively) obtained positive cumulative abnormal returns might be caused by method of payment (by cash). Ross et al (2009) points out that based on empirical evidence, the Acquiring/Surviving company's stock price generally falls upon the announcement of stocks deal.

M&A theory explains that the different abnormal effects from M&A deals are caused by information differences between managers and outside, that is, managers are more likely to use cash deal when they perceive that it is undervalued by the stock market. Consequently, investors observe non-existence of an equity issue bid up the stock price (Myers and Majluf, 1984 in Andrade, Mitchell, and Stafford, 2001).

CHAPTER 5

CONCLUSIONS AND SUGGESTIONS

5.1. Conclusions

Having the Single Index Market Model and significance tests, the author can conclude that:

- Market perceived the announcements of M&A negatively, causing stockholders of Acquiring/Surviving company to earn significant negative abnormal returns (either non-standardized or standardized) few days post announcements. As the abnormal returns were cumulated, the stockholders of Acquiring/Surviving company already anticipated the news so that they might experience the abnormality prior to, upon, and a day after the announcement (applies to *CAARs*) before experiencing negative *SCAARs* in the long run. On the contrary, the announcements of M&A were perceived positively by stockholders of Target by awarding significant positive *AARs* (followed by some significant negative adjustments) and also significant positive *CARs* (either non-standardized or standardized).
- There were significant differences in abnormal returns (*AR*, *SAR*, *CAR*, and *SCAR*) received by stockholders of both Acquiring/Surviving and Target only after the announcement. Stockholders of Acquiring/Surviving companies received significant negative *CARs* and *SCARs* whereas stockholders of Target received significant positive *CARs* and *SCARs*.
- There were significant differences in abnormal returns (*AR*, *SAR*, *CAR*, *SCAR*) earned by stockholders of Acquiring/Surviving company which financed the deal by cash and stock only after the announcement of the deal. Those which financed the deal by cash received significant positive *CAR* and *SCAR* while those which financed the deal by stocks received significant negative *CAR* and *SCAR*. In addition, there were also significant different abnormal returns (*ARs* and *SARs*) earned by stockholders of Target who received cash and stockholders of Target who received stocks only after the announcement.

5.2. Research Limitations

Limitations in this research are as follows;

- Merger and acquisition deal is essentially a complex business transaction so that market reacts towards various non-quantifiable determinants/variables. For instance, animal spirit, different (business/economic) expectation towards the deal, stockholders' irrationality.
- The number of qualified samples is only 26% of total identified samples as most of identified samples are foreign companies (either Acquiring/Surviving companies or Target). Therefore, this research is affected by the characteristics of samples.

5.3. Suggestions

5.3.1. To Future Researchers

- Future researchers may need to take the case-by-case approach (by interviewing particular stockholder) in order to take the non-quantifiable determinants/variables into account.
- With regards to the characteristics of samples, future researchers may need to capture larger sample size by (1) extending the period of research (for example, since the inception of Indonesian stock market) and (2) including alternative method of payment (by leverage buy-out).
- In addition, the effect of both foreign Acquiring/Surviving company and Target could be factored in into future researches.

5.3.2. To Stockholders

According to empirical result of this research, stockholders of Acquiring/Surviving company should anticipate the negative abnormal return in the long run in executing M&A deals. The scale of negative abnormal return is controllable by financing the deal with cash instead of stocks. On the other hand, stockholders of Target should anticipate the positive abnormal return upon- and post announcement (in the long run) of M&A. The scale of abnormal returns, however, is uncontrollable.

REFERENCES

About Us: CIMB Niaga.

http://www.cimbniaga.com/index.php?ch=gen_about&pg=gen_about_us&ac=1 (accessed January 15, 2012).

Andrade, Gregor, Mark Mitchell, and Erik Stafford. "New Evidence and Perspectives on Merger." *Journal of Economic Perspectives* 15, Spring 2001: 103-120.

Berkovitch, Elazar, and M.P. Narayanan. "Motives for Takeovers: An Empirical Investigation." *Journal of Financial and Quantitative Analysis* 28, September 1993: 347-362.

Bertoncelj, Andrej, and Darko Kovač. "An Integrated Approach for a Higher Success." *Zb. rad. Ekon. fak. Rij*, Vol. 25 sv. 1, 2007: 167-188.

Binder, John J. "The Event Study Methodology Since 1969." *Review of Quantitative Finance and Accounting* 11, 1998: 111-137.

Bisnis Indonesia. *Penggabungan PT Bank Lippo Tbk dan PT Bank Niaga Tbk*. 3 June 2008.

Bloomberg L. P. Bloomberg Finance L.P. (2012.1.7.8) [Computer software]. 15 November 2011

Bodie, Ziv, Alex Kane, and Alan J. Marcus. *Investments 8th edition*. Singapore: McGraw-Hill/Irwin, 2009.

Bradley, Michael, Anand Desai, and E. Han Kim. "Synergistic Gains from Corporate Acquisitions and Their Division Between the Stockholders of Target and Acquiring Firms." *Journal of Financial Economics* 21, 1988: 3-40.

Cahyono, Irwan L. "Pengaruh Tindakan Merger dan Akuisisi terhadap Abnormal Return Saham Perusahaan Pengakuisisi (Event Study pada BEJ dalam periode tahun 2001-2005)." Thesis, Jakarta: MM-FEUI, 2006.

Coase, R. H. "The Nature of the Firm." *Economica* 4, November 1937: 386-405.

Damodaran, Aswath. *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset, 2nd edition*. New York: John Wiley & Sons, 2002.

Elgers, Pieter T., and John J. Clark. "Merger Types and shareholder returns: additional evidence." *Financial Management* 9, 1980: 66-72.

Elton, Edwin J., Martin J. Gruber, Stephen J. Brown, and William N. Goetzmann. *Modern Portfolio Theory and Investment Analysis 7th edition*. John Wiley & Sons, Inc., 2007.

Fama, Eugene F. "Efficient Capital Markets: A Review of Theory and Empirical Work." *the American Finance Association*. New York: Wiley-Blackwell, 1970. 383-417.

Fidiasari, Evi. "Pengaruh Pengumuman Akuisisi terhadap Return Saham Perusahaan Target Akuisisi (Event Study pada Bursa Efek Jakarta tahun 2002-2006)." Thesis, Jakarta: MM-FEUI, 2006.

Hirschey, Mark, and John Nofsinger. *Investments: Analysis and Behavior*. New York: McGraw-Hill/Irwin, 2008.

Huang, Yen-Sheng, and Ralph A. Walkling. "Target Abnormal Returns Associated with Acquisition Announcements." *Journal of Financial Economics* 19, 1987: 329-349.

- Jensen, Michael C, and Richard S Ruback. "The Market for Corporate Control: The Scientific Evidence." *Journal of Financial Economics* 11, 1983: 5-50.
- Jensen, Michael. C. "The Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers." *American Economic Review* 76, May 1986: 323-329.
- Langetieg, Terence C., Robert A. Haugen, and Dean W. Wichern. "Merger and Stockholder Risk." *The Journal of Financial and Quantitative Analysis* 15, September 1980: pp. 689-717.
- MacKinley, A. Craig. "Event Studies in Economics and Finance." *Journal of Economic Literature*, Vol.XXXV: 13-39.
- Manne, Henry G. "Mergers and the Market for Corporate Control." *Journal of Political Economy* 73, April 1965: 110-120.
- Oelger, Mehtap, and Dirk Schiereck. "Cross-Border M&A and International Stock Market Integration - Evidence from Turkey." *International Journal of Economics and Research*, 2011: 40-55.
- Roll, Richard. "The Hubris Hypothesis of Corporate Takeovers." *Chicago Journals*, April 1986: 197-216.
- Ross, Stephen A, Randolph W. Westerfield, Jeffrey Jaffe, and Bradford Jordan. *Modern Financial Management*. New York: McGraw-Hill, 2009.
- Sanders, Donald H. *Statistics: a Fresh Approach*. Caledonia: McGraw-Hill, 1990.
- Scharf, Charles A., Edward E. Shea, and George C. Beck. *Acquisitions, Mergers, Sales, Buyouts & Takeovers: A Handbook with forms 4th edition*. Englewood Cliffs: Prentice Hall, 1991.
- Sherman, Andrew J., and Milledge A. Hart. *Mergers & Acquisitions from A to Z, 2nd edition*. New York: Amacom, 2006.
- Shleifer, Andrei, and Robert M. Vishny. "Management Entrenchment: The Case of Manager-Specific Investments." *Journal of Financial Economics*, October 1989: 123-139.
- Slamka, Christian, Arina Soukhoroukova, and Martin Spann. "Event Studies in Real- and Play-Money Prediction Markets." *The Journal of Prediction Markets*, 2008: 53-70.
- Tobing, Vincent L. "Pengaruh Merger terhadap Kinerja Keuangan, Harga Saham serta Abnormal Return Saham PT Bank Bali Tbk." Thesis, Jakarta: MM-FEUI, 2004.
- Travlos, Nickolas G. "Corporate Takeover Bids, Methods of Payment, and Bidding Firms' Stock Returns." *Journal of Finance* 42, September 1987: 943-963.
- Weston, J. Fred, Mark L. Mitchel, and J.H. Mulherin. *Takeovers, Restructuring and Corporate Governance 4th edition*. New Jersey: Pearson Education, Inc., 2004.
- Widyawirasari, Astriana. "Pengaruh Pengumuman Akuisisi terhadap Return Saham Perusahaan Pengakuisisi (Event Study Perusahaan Go Public di BEJ)." Thesis, Jakarta: MM-FEUI, 2001.

Appendix 1

Overall Fit of the Regression Line and Statistical Significance

Overall Fit of the Regression Line			Statistical Significance							
Ticker	R square	F- Stat	α			β				
			Coefficient	t-stat	P-value	Coefficient	t-stat	P-value		
Acquiring/Surviving Company										
BCIC	0.0608	20.6572	-0.0015	0.0023	-0.6515	0.5152	0.7706	0.1696	4.5450	0.0000
BNBR	0.0488	16.3826	0.0037	0.0053	0.7132	0.4763	1.6250	0.4015	4.0475	0.0001
KLBF	0.2197	89.7978	0.0017	0.0013	1.2794	0.2017	1.1106	0.1172	9.4762	0.0000
BUMI*	0.1738	67.0978	-0.0006	0.0010	-0.5960	0.5516	0.0000	0.0000	0.0000	0.0000
ADES	0.0634	21.5832	-0.0011	0.0024	-0.4778	0.6331	0.8074	0.1738	4.6458	0.0000
BUMI**	0.4256	236.3614	0.0054	0.0016	3.4100	0.0007	1.4390	0.0936	15.3740	0.0000
BNGA	0.4270	237.7338	0.0002	0.0013	0.1757	0.8606	1.1480	0.0745	15.4186	0.0000
BRPT	0.2073	83.4119	0.0039	0.0030	1.2661	0.2064	1.5111	0.1655	9.1330	0.0000
RMBA	0.1560	58.9740	-0.0010	0.0017	-0.5743	0.5662	0.6232	0.0811	7.6795	0.0000
BBRI	0.4713	284.3488	-0.0003	0.0010	-0.2543	0.7994	1.2280	0.0728	16.8626	0.0000
Target										
SDPC	0.0200	6.5148	0.0016	0.0037	0.4331	0.6652	0.7084	0.2775	2.5524	0.0112
HERO	0.0000	0.0006	0.0040	0.0023	1.7326	0.0841	0.0045	0.1781	0.0251	0.9800
DNKS	0.0867	30.2900	0.0014	0.0013	1.1286	0.2599	0.6277	0.1141	5.5036	0.0000
EPMT	0.1551	58.5485	0.0009	0.0015	0.5705	0.5687	1.0373	0.1356	7.6517	0.0000
HMSP	0.1301	47.7282	0.0011	0.0013	0.8781	0.3833	0.7011	0.1015	6.9086	0.0000
INTP	0.3998	212.5182	0.0005	0.0014	0.3855	0.7001	1.6539	0.1135	14.5780	0.0000
SHDA	0.0194	6.2957	0.0015	0.0017	0.8907	0.3787	0.3708	0.1478	2.5091	0.0126
ENRG	0.1308	48.0153	-0.0009	0.0012	-0.7527	0.4522	0.6158	0.0889	6.9293	0.0000
LSIP	0.2541	108.6662	0.0009	0.0012	0.7422	0.4585	0.8444	0.0810	10.4243	0.0000
SMAR	0.0187	6.0720	0.0029	0.0016	1.8596	0.0639	0.2342	0.0950	2.4642	0.0143
LPBN	0.0926	32.5354	0.0016	0.0015	1.0571	0.2913	0.4806	0.0843	5.7040	0.0000
BNII	0.2391	100.2596	0.0014	0.0015	0.9330	0.3515	0.8822	0.0881	10.0130	0.0000
ABBA	0.0144	4.6740	0.0012	0.0035	0.3271	0.7438	0.4373	0.2023	2.1620	0.0314
ISAT	0.2642	114.5266	0.0003	0.0015	0.1923	0.8476	0.8583	0.0802	10.7017	0.0000
PNBN	0.3404	164.6514	0.0021	0.0019	1.1042	0.2703	1.0643	0.0829	12.8317	0.0000
BAEK	0.0249	8.1592	0.0030	0.0013	2.3310	0.0204	0.1675	0.0586	2.8564	0.0046
PTRO	0.0170	5.5320	0.0020	0.0018	1.0965	0.2737	0.1897	0.0807	2.3520	0.0193
BYAN	0.0232	7.5701	0.0026	0.0008	3.0305	0.0026	0.1794	0.0652	2.7514	0.0063

Note: *For M&A deal in 2006

** For M&A deal in 2007

Source: Author analysis

Appendix 2

A Sample Calculation of Abnormal Return on PT. Bank Niaga, Tbk. (BNGA)

Event date 03-Jun-08

Event Window	Date	JCI.Price	Rm	BNGA.Price	Ri	α_i	β_i	E(Ri)	$e_i = AR_{it} = R_i - E(R_i)$
t-260	04-May-07	2,033.00	0.0035	825.00	0.0000	0.0002	1.1480	0.0042	(0.0042)
t-259	07-May-07	2,037.00	0.0020	835.00	0.0121	0.0002	1.1480	0.0025	0.0096
t-258	08-May-07	2,023.00	-0.0069	815.00	-0.0240	0.0002	1.1480	(0.0077)	(0.0163)
t-257	09-May-07	2,038.00	0.0074	825.00	0.0123	0.0002	1.1480	0.0087	0.0035
t-256	10-May-07	2,047.00	0.0044	825.00	0.0000	0.0002	1.1480	0.0053	(0.0053)
t-255	11-May-07	2,022.00	-0.0122	825.00	0.0000	0.0002	1.1480	(0.0138)	0.0138
t-254	14-May-07	2,044.00	0.0109	825.00	0.0000	0.0002	1.1480	0.0127	(0.0127)
t-253	15-May-07	2,038.00	-0.0029	815.00	-0.0121	0.0002	1.1480	(0.0031)	(0.0090)
t-252	16-May-07	2,064.00	0.0128	835.00	0.0245	0.0002	1.1480	0.0149	0.0097
t-251	21-May-07	2,071.00	0.0034	825.00	-0.0120	0.0002	1.1480	0.0041	(0.0161)
t-250	22-May-07	2,079.00	0.0039	835.00	0.0121	0.0002	1.1480	0.0047	0.0075
t-249	23-May-07	2,104.00	0.0120	825.00	-0.0120	0.0002	1.1480	0.0140	(0.0260)
t-248	24-May-07	2,079.00	-0.0119	805.00	-0.0242	0.0002	1.1480	(0.0134)	(0.0108)
t-247	25-May-07	2,060.00	-0.0091	805.00	0.0000	0.0002	1.1480	(0.0103)	0.0103
t-246	28-May-07	2,077.00	0.0083	815.00	0.0124	0.0002	1.1480	0.0097	0.0027
t-245	29-May-07	2,059.00	-0.0087	805.00	-0.0123	0.0002	1.1480	(0.0097)	(0.0025)
t-244	30-May-07	2,055.00	-0.0019	805.00	0.0000	0.0002	1.1480	(0.0020)	0.0020
t-243	31-May-07	2,084.00	0.0141	855.00	0.0621	0.0002	1.1480	0.0164	0.0457
t-242	04-Jun-07	2,112.00	0.0134	904.00	0.0575	0.0002	1.1480	0.0157	0.0417
t-241	05-Jun-07	2,093.00	-0.0090	864.00	-0.0442	0.0002	1.1480	(0.0101)	(0.0341)
t-240	06-Jun-07	2,102.00	0.0043	874.00	-0.0116	0.0002	1.1480	0.0052	0.0064
t-239	07-Jun-07	2,094.00	-0.0038	855.00	-0.0217	0.0002	1.1480	(0.0041)	(0.0176)
t-238	08-Jun-07	2,054.00	-0.0191	825.00	-0.0351	0.0002	1.1480	(0.0217)	(0.0134)
t-237	11-Jun-07	2,084.00	0.0146	845.00	0.0242	0.0002	1.1480	0.0170	0.0072
t-236	12-Jun-07	2,109.00	0.0120	835.00	-0.0118	0.0002	1.1480	-0.0140	(0.0258)
t-235	13-Jun-07	2,089.00	-0.0095	835.00	0.0000	0.0002	1.1480	(0.0107)	0.0107
t-234	14-Jun-07	2,108.00	0.0091	835.00	0.0000	0.0002	1.1480	0.0107	(0.0107)
t-233	15-Jun-07	2,121.00	0.0062	825.00	-0.0120	0.0002	1.1480	0.0073	(0.0193)
t-232	18-Jun-07	2,126.00	0.0024	835.00	0.0121	0.0002	1.1480	0.0029	0.0092
t-231	19-Jun-07	2,142.00	0.0075	845.00	0.0120	0.0002	1.1480	0.0089	0.0031
t-230	20-Jun-07	2,161.00	0.0089	845.00	0.0000	0.0002	1.1480	0.0104	(0.0104)
t-229	21-Jun-07	2,152.00	-0.0042	855.00	0.0118	0.0002	1.1480	(0.0046)	0.0164
t-228	22-Jun-07	2,152.00	0.0000	855.00	0.0000	0.0002	1.1480	0.0002	(0.0002)
t-227	25-Jun-07	2,152.00	0.0000	835.00	-0.0234	0.0002	1.1480	0.0002	(0.0236)
t-226	26-Jun-07	2,154.00	0.0009	825.00	-0.0120	0.0002	1.1480	0.0013	(0.0133)
t-225	27-Jun-07	2,125.00	-0.0135	805.00	-0.0242	0.0002	1.1480	(0.0152)	(0.0090)
t-224	28-Jun-07	2,113.00	-0.0056	805.00	0.0000	0.0002	1.1480	(0.0063)	0.0063
t-223	29-Jun-07	2,139.00	0.0123	805.00	0.0000	0.0002	1.1480	0.0144	(0.0144)
t-222	02-Jul-07	2,168.00	0.0136	825.00	0.0248	0.0002	1.1480	0.0158	0.0091
t-221	03-Jul-07	2,189.00	0.0097	835.00	0.0121	0.0002	1.1480	0.0113	0.0008
t-220	04-Jul-07	2,196.00	0.0032	835.00	0.0000	0.0002	1.1480	0.0039	(0.0039)
t-219	05-Jul-07	2,221.00	0.0114	835.00	0.0000	0.0002	1.1480	0.0133	(0.0133)
t-218	06-Jul-07	2,227.00	0.0027	825.00	-0.0120	0.0002	1.1480	0.0033	(0.0153)
t-217	09-Jul-07	2,271.00	0.0198	835.00	0.0121	0.0002	1.1480	0.0229	(0.0108)
t-216	10-Jul-07	2,282.00	0.0048	855.00	0.0240	0.0002	1.1480	0.0058	0.0182
t-215	11-Jul-07	2,273.00	-0.0039	855.00	0.0000	0.0002	1.1480	(0.0043)	0.0043
t-214	12-Jul-07	2,285.00	0.0053	845.00	-0.0117	0.0002	1.1480	0.0063	(0.0180)
t-213	13-Jul-07	2,302.00	0.0074	835.00	-0.0118	0.0002	1.1480	0.0088	(0.0206)
t-212	16-Jul-07	2,286.00	-0.0070	835.00	0.0000	0.0002	1.1480	(0.0078)	0.0078
t-211	17-Jul-07	2,301.00	0.0066	884.00	0.0587	0.0002	1.1480	0.0078	0.0509
t-210	18-Jul-07	2,295.00	-0.0026	894.00	0.0113	0.0002	1.1480	(0.0028)	0.0141
t-209	19-Jul-07	2,334.00	0.0170	923.00	0.0324	0.0002	1.1480	0.0197	0.0127
t-208	20-Jul-07	2,366.00	0.0137	982.00	0.0639	0.0002	1.1480	0.0160	0.0480
t-207	23-Jul-07	2,380.00	0.0059	982.00	0.0000	0.0002	1.1480	0.0070	(0.0070)
t-206	24-Jul-07	2,401.00	0.0088	963.00	-0.0193	0.0002	1.1480	0.0104	(0.0297)
t-205	25-Jul-07	2,395.00	-0.0025	963.00	0.0000	0.0002	1.1480	(0.0026)	0.0026
t-204	26-Jul-07	2,365.00	-0.0125	933.00	-0.0312	0.0002	1.1480	(0.0142)	(0.0170)
t-203	27-Jul-07	2,298.00	-0.0283	914.00	-0.0204	0.0002	1.1480	(0.0323)	0.0119
t-202	30-Jul-07	2,302.00	0.0017	914.00	0.0000	0.0002	1.1480	0.0022	(0.0022)
t-201	31-Jul-07	2,349.00	0.0204	923.00	0.0098	0.0002	1.1480	0.0237	(0.0138)
t-200	01-Aug-07	2,256.00	-0.0396	884.00	-0.0423	0.0002	1.1480	(0.0452)	0.0030
t-199	02-Aug-07	2,271.00	0.0066	864.00	-0.0226	0.0002	1.1480	0.0079	(0.0305)
t-198	03-Aug-07	2,270.00	-0.0004	855.00	-0.0104	0.0002	1.1480	(0.0003)	(0.0101)
t-197	06-Aug-07	2,189.00	-0.0357	835.00	-0.0234	0.0002	1.1480	(0.0407)	0.0173

Appendix 2

A Sample Calculation of Abnormal Return on PT. Bank Niaga, Tbk. (BNGA)
(Continued)

Event Window	Date	JCI.Price	Rm	BNGA.Price	Ri	α_i	β_i	E(Ri)	$e_i = AR_{it} = R_i - E(R_i)$
t-196	07-Aug-07	2,174.00	-0.0069	815.00	-0.0240	0.0002	1.1480	(0.0076)	(0.0163)
t-195	08-Aug-07	2,263.00	0.0409	864.00	0.0601	0.0002	1.1480	0.0472	0.0129
t-194	09-Aug-07	2,241.00	-0.0097	845.00	-0.0220	0.0002	1.1480	(0.0109)	(0.0111)
t-193	10-Aug-07	2,207.00	-0.0152	845.00	0.0000	0.0002	1.1480	(0.0172)	0.0172
t-192	13-Aug-07	2,211.00	0.0018	845.00	0.0000	0.0002	1.1480	0.0023	(0.0023)
t-191	14-Aug-07	2,169.00	-0.0190	825.00	-0.0237	0.0002	1.1480	(0.0216)	(0.0021)
t-190	15-Aug-07	2,029.00	-0.0645	766.00	-0.0715	0.0002	1.1480	(0.0739)	0.0024
t-189	16-Aug-07	1,909.00	-0.0591	678.00	-0.1149	0.0002	1.1480	(0.0677)	(0.0472)
t-188	20-Aug-07	2,042.00	0.0697	727.00	0.0723	0.0002	1.1480	0.0802	(0.0079)
t-187	21-Aug-07	1,993.00	-0.0240	707.00	-0.0275	0.0002	1.1480	(0.0273)	(0.0002)
t-186	22-Aug-07	2,063.00	0.0351	737.00	0.0424	0.0002	1.1480	0.0405	0.0019
t-185	23-Aug-07	2,118.00	0.0267	766.00	0.0393	0.0002	1.1480	0.0308	0.0085
t-184	24-Aug-07	2,143.00	0.0118	756.00	-0.0131	0.0002	1.1480	0.0138	(0.0268)
t-183	27-Aug-07	2,175.00	0.0149	796.00	0.0529	0.0002	1.1480	0.0174	0.0355
t-182	28-Aug-07	2,160.00	-0.0069	815.00	0.0239	0.0002	1.1480	(0.0077)	0.0316
t-181	29-Aug-07	2,135.00	-0.0116	825.00	0.0123	0.0002	1.1480	(0.0131)	0.0253
t-180	30-Aug-07	2,151.00	0.0075	825.00	0.0000	0.0002	1.1480	0.0088	(0.0088)
t-179	31-Aug-07	2,194.00	0.0200	884.00	0.0715	0.0002	1.1480	0.0232	0.0483
t-178	03-Sep-07	2,214.00	0.0091	855.00	-0.0328	0.0002	1.1480	0.0107	(0.0435)
t-177	04-Sep-07	2,215.00	0.0005	825.00	-0.0351	0.0002	1.1480	0.0007	(0.0358)
t-176	05-Sep-07	2,215.00	0.0000	835.00	0.0121	0.0002	1.1480	0.0002	0.0119
t-175	06-Sep-07	2,221.00	0.0027	855.00	0.0240	0.0002	1.1480	0.0033	0.0206
t-174	07-Sep-07	2,240.00	0.0086	845.00	-0.0117	0.0002	1.1480	0.0100	(0.0217)
t-173	10-Sep-07	2,210.00	-0.0134	845.00	0.0000	0.0002	1.1480	(0.0151)	0.0151
t-172	11-Sep-07	2,211.00	0.0005	835.00	-0.0118	0.0002	1.1480	0.0007	(0.0126)
t-171	12-Sep-07	2,210.00	-0.0005	815.00	-0.0240	0.0002	1.1480	(0.0003)	(0.0237)
t-170	13-Sep-07	2,223.00	0.0059	825.00	0.0123	0.0002	1.1480	0.0070	0.0053
t-169	14-Sep-07	2,226.00	0.0013	835.00	0.0121	0.0002	1.1480	0.0018	0.0103
t-168	17-Sep-07	2,223.00	-0.0013	835.00	0.0000	0.0002	1.1480	(0.0013)	0.0013
t-167	18-Sep-07	2,240.00	0.0076	845.00	0.0120	0.0002	1.1480	0.0090	0.0030
t-166	19-Sep-07	2,313.00	0.0326	874.00	0.0343	0.0002	1.1480	0.0376	(0.0033)
t-165	20-Sep-07	2,305.00	-0.0035	874.00	0.0000	0.0002	1.1480	(0.0037)	0.0037
t-164	21-Sep-07	2,335.00	0.0130	874.00	0.0000	0.0002	1.1480	0.0152	(0.0152)
t-163	24-Sep-07	2,354.00	0.0081	884.00	0.0114	0.0002	1.1480	0.0096	0.0019
t-162	25-Sep-07	2,330.00	-0.0102	874.00	-0.0113	0.0002	1.1480	(0.0115)	0.0002
t-161	26-Sep-07	2,361.00	0.0133	874.00	0.0000	0.0002	1.1480	0.0155	(0.0155)
t-160	27-Sep-07	2,379.00	0.0076	874.00	0.0000	0.0002	1.1480	0.0090	(0.0090)
t-159	28-Sep-07	2,359.00	-0.0084	855.00	-0.0217	0.0002	1.1480	(0.0094)	(0.0123)
t-158	01-Oct-07	2,399.00	0.0170	855.00	0.0000	0.0002	1.1480	0.0197	(0.0197)
t-157	02-Oct-07	2,465.00	0.0275	874.00	0.0222	0.0002	1.1480	0.0318	(0.0096)
t-156	03-Oct-07	2,452.00	-0.0053	874.00	0.0000	0.0002	1.1480	(0.0058)	0.0058
t-155	04-Oct-07	2,473.00	0.0086	894.00	0.0229	0.0002	1.1480	0.0101	0.0128
t-154	05-Oct-07	2,501.00	0.0113	894.00	0.0000	0.0002	1.1480	0.0132	(0.0132)
t-153	08-Oct-07	2,524.00	0.0092	894.00	0.0000	0.0002	1.1480	0.0108	(0.0108)
t-152	09-Oct-07	2,547.00	0.0091	904.00	0.0112	0.0002	1.1480	0.0107	0.0005
t-151	10-Oct-07	2,591.00	0.0173	914.00	0.0111	0.0002	1.1480	0.0201	(0.0090)
t-150	11-Oct-07	2,638.00	0.0181	943.00	0.0317	0.0002	1.1480	0.0211	0.0107
t-149	17-Oct-07	2,642.00	-0.0015	933.00	-0.0106	0.0002	1.1480	0.0020	(0.0126)
t-148	18-Oct-07	2,617.00	-0.0095	904.00	-0.0311	0.0002	1.1480	(0.0106)	(0.0204)
t-147	19-Oct-07	2,564.00	-0.0203	864.00	-0.0442	0.0002	1.1480	(0.0230)	(0.0212)
t-146	22-Oct-07	2,453.00	-0.0433	835.00	-0.0336	0.0002	1.1480	(0.0495)	0.0159
t-145	23-Oct-07	2,554.00	0.0412	864.00	0.0347	0.0002	1.1480	0.0475	(0.0128)
t-144	24-Oct-07	2,525.00	-0.0114	835.00	-0.0336	0.0002	1.1480	(0.0128)	(0.0208)
t-143	25-Oct-07	2,597.00	0.0285	884.00	0.0587	0.0002	1.1480	0.0330	0.0257
t-142	26-Oct-07	2,624.00	0.0104	884.00	0.0000	0.0002	1.1480	0.0122	(0.0122)
t-141	29-Oct-07	2,668.00	0.0168	884.00	0.0000	0.0002	1.1480	0.0195	(0.0195)
t-140	30-Oct-07	2,663.00	-0.0019	864.00	-0.0226	0.0002	1.1480	(0.0019)	(0.0207)
t-139	31-Oct-07	2,643.00	-0.0075	845.00	-0.0220	0.0002	1.1480	(0.0084)	(0.0136)
t-138	01-Nov-07	2,705.00	0.0235	845.00	0.0000	0.0002	1.1480	0.0272	(0.0272)
t-137	02-Nov-07	2,711.00	0.0022	835.00	-0.0118	0.0002	1.1480	0.0028	(0.0146)
t-136	05-Nov-07	2,652.00	-0.0218	815.00	-0.0240	0.0002	1.1480	(0.0248)	0.0008
t-135	06-Nov-07	2,682.00	0.0113	815.00	0.0000	0.0002	1.1480	0.0132	(0.0132)
t-134	07-Nov-07	2,714.00	0.0119	815.00	0.0000	0.0002	1.1480	0.0139	(0.0139)
t-133	08-Nov-07	2,678.00	-0.0133	796.00	-0.0233	0.0002	1.1480	(0.0150)	(0.0083)

Appendix 2

A Sample Calculation of Abnormal Return on PT. Bank Niaga, Tbk. (BNGA)
(Continued)

Event Window	Date	JCL.Price	Rm	BNGA.Price	Ri	α_i	β_i	E(Ri)	$ei = ARit = Ri - E(Ri)$
t-132	09-Nov-07	2,708.00	0.0112	796.00	0.0000	0.0002	1.1480	0.0131	(0.0131)
t-131	12-Nov-07	2,672.00	-0.0133	776.00	-0.0251	0.0002	1.1480	(0.0150)	(0.0101)
t-130	13-Nov-07	2,654.00	-0.0067	874.00	0.1263	0.0002	1.1480	(0.0075)	0.1338
t-129	14-Nov-07	2,692.00	0.0143	923.00	0.0561	0.0002	1.1480	0.0167	0.0394
t-128	15-Nov-07	2,706.00	0.0052	923.00	0.0000	0.0002	1.1480	0.0062	(0.0062)
t-127	16-Nov-07	2,669.00	-0.0137	884.00	-0.0423	0.0002	1.1480	(0.0155)	(0.0268)
t-126	19-Nov-07	2,647.00	-0.0082	914.00	0.0339	0.0002	1.1480	(0.0092)	0.0432
t-125	20-Nov-07	2,625.00	-0.0083	884.00	-0.0328	0.0002	1.1480	(0.0093)	(0.0235)
t-124	21-Nov-07	2,564.00	-0.0232	825.00	-0.0667	0.0002	1.1480	(0.0264)	(0.0403)
t-123	22-Nov-07	2,570.00	0.0023	845.00	0.0242	0.0002	1.1480	0.0029	0.0213
t-122	23-Nov-07	2,584.00	0.0054	835.00	-0.0118	0.0002	1.1480	0.0065	(0.0183)
t-121	26-Nov-07	2,648.00	0.0248	835.00	0.0000	0.0002	1.1480	0.0287	(0.0287)
t-120	27-Nov-07	2,628.00	-0.0076	825.00	-0.0120	0.0002	1.1480	(0.0084)	(0.0035)
t-119	28-Nov-07	2,672.00	0.0167	825.00	0.0000	0.0002	1.1480	0.0194	(0.0194)
t-118	29-Nov-07	2,700.00	0.0105	835.00	0.0121	0.0002	1.1480	0.0123	(0.0001)
t-117	30-Nov-07	2,688.00	-0.0044	835.00	0.0000	0.0002	1.1480	(0.0049)	0.0049
t-116	03-Dec-07	2,727.00	0.0145	845.00	0.0120	0.0002	1.1480	0.0169	(0.0049)
t-115	04-Dec-07	2,753.00	0.0095	855.00	0.0118	0.0002	1.1480	0.0112	0.0007
t-114	05-Dec-07	2,768.00	0.0054	855.00	0.0000	0.0002	1.1480	0.0065	(0.0065)
t-113	06-Dec-07	2,795.00	0.0098	864.00	0.0105	0.0002	1.1480	0.0114	(0.0009)
t-112	07-Dec-07	2,779.00	-0.0057	855.00	-0.0104	0.0002	1.1480	(0.0063)	(0.0041)
t-111	10-Dec-07	2,790.00	0.0040	874.00	0.0222	0.0002	1.1480	0.0048	0.0175
t-110	11-Dec-07	2,811.00	0.0075	884.00	0.0114	0.0002	1.1480	0.0089	0.0026
t-109	12-Dec-07	2,796.00	-0.0053	884.00	0.0000	0.0002	1.1480	(0.0059)	0.0059
t-108	13-Dec-07	2,756.00	-0.0143	855.00	-0.0328	0.0002	1.1480	(0.0162)	(0.0166)
t-107	14-Dec-07	2,740.00	-0.0058	845.00	-0.0117	0.0002	1.1480	(0.0064)	(0.0053)
t-106	17-Dec-07	2,665.00	-0.0274	835.00	-0.0118	0.0002	1.1480	(0.0312)	0.0194
t-105	18-Dec-07	2,646.00	-0.0071	825.00	-0.0120	0.0002	1.1480	(0.0080)	(0.0040)
t-104	19-Dec-07	2,658.00	0.0045	835.00	0.0121	0.0002	1.1480	0.0054	0.0067
t-103	26-Dec-07	2,715.00	0.0214	864.00	0.0347	0.0002	1.1480	-0.0248	0.0099
t-102	27-Dec-07	2,740.00	0.0092	874.00	0.0116	0.0002	1.1480	0.0108	0.0008
t-101	28-Dec-07	2,746.00	0.0022	884.00	0.0114	0.0002	1.1480	0.0027	0.0087
t-100	02-Jan-08	2,732.00	-0.0051	855.00	-0.0328	0.0002	1.1480	(0.0056)	(0.0272)
t-99	03-Jan-08	2,715.00	-0.0062	845.00	-0.0117	0.0002	1.1480	(0.0069)	(0.0048)
t-98	04-Jan-08	2,765.00	0.0184	845.00	0.0000	0.0002	1.1480	0.0214	(0.0214)
t-97	07-Jan-08	2,776.00	0.0040	835.00	-0.0118	0.0002	1.1480	0.0048	(0.0166)
t-96	08-Jan-08	2,786.00	0.0036	845.00	0.0120	0.0002	1.1480	0.0044	0.0076
t-95	09-Jan-08	2,830.00	0.0158	835.00	-0.0118	0.0002	1.1480	0.0184	(0.0302)
t-94	14-Jan-08	2,810.00	-0.0071	815.00	-0.0240	0.0002	1.1480	(0.0079)	(0.0161)
t-93	15-Jan-08	2,730.00	-0.0285	786.00	-0.0356	0.0002	1.1480	(0.0325)	(0.0031)
t-92	16-Jan-08	2,592.00	-0.0505	737.00	-0.0623	0.0002	1.1480	(0.0578)	(0.0045)
t-91	17-Jan-08	2,649.00	0.0220	756.00	0.0258	0.0002	1.1480	0.0255	0.0003
t-90	18-Jan-08	2,611.00	-0.0143	737.00	-0.0251	0.0002	1.1480	(0.0162)	(0.0089)
t-89	21-Jan-08	2,486.00	-0.0479	727.00	-0.0136	0.0002	1.1480	(0.0547)	0.0412
t-88	22-Jan-08	2,295.00	-0.0768	629.00	-0.1348	0.0002	1.1480	(0.0880)	(0.0468)
t-87	23-Jan-08	2,476.00	0.0789	707.00	0.1240	0.0002	1.1480	0.0908	0.0332
t-86	24-Jan-08	2,517.00	0.0166	707.00	0.0000	0.0002	1.1480	0.0192	(0.0192)
t-85	25-Jan-08	2,620.00	0.0409	727.00	0.0283	0.0002	1.1480	0.0472	(0.0189)
t-84	28-Jan-08	2,582.00	-0.0145	688.00	-0.0536	0.0002	1.1480	(0.0164)	(0.0372)
t-83	29-Jan-08	2,608.00	0.0101	697.00	0.0131	0.0002	1.1480	0.0118	0.0013
t-82	30-Jan-08	2,610.00	0.0008	688.00	-0.0129	0.0002	1.1480	0.0011	(0.0140)
t-81	31-Jan-08	2,627.00	0.0065	697.00	0.0131	0.0002	1.1480	0.0077	0.0054
t-80	01-Feb-08	2,647.00	0.0076	697.00	0.0000	0.0002	1.1480	0.0090	(0.0090)
t-79	04-Feb-08	2,702.00	0.0208	737.00	0.0574	0.0002	1.1480	0.0241	0.0333
t-78	05-Feb-08	2,704.00	0.0007	747.00	0.0136	0.0002	1.1480	0.0011	0.0125
t-77	06-Feb-08	2,639.00	-0.0240	747.00	0.0000	0.0002	1.1480	(0.0274)	0.0274
t-76	11-Feb-08	2,589.00	-0.0189	717.00	-0.0402	0.0002	1.1480	(0.0215)	(0.0186)
t-75	12-Feb-08	2,592.00	0.0012	717.00	0.0000	0.0002	1.1480	0.0016	(0.0016)
t-74	13-Feb-08	2,611.00	0.0073	727.00	0.0139	0.0002	1.1480	0.0086	0.0053
t-73	14-Feb-08	2,676.00	0.0249	756.00	0.0399	0.0002	1.1480	0.0288	0.0111
t-72	15-Feb-08	2,688.00	0.0045	776.00	0.0265	0.0002	1.1480	0.0054	0.0211
t-71	18-Feb-08	2,685.00	-0.0011	747.00	-0.0374	0.0002	1.1480	(0.0011)	(0.0363)
t-70	19-Feb-08	2,712.00	0.0101	756.00	0.0120	0.0002	1.1480	0.0118	0.0003

Appendix 2

A Sample Calculation of Abnormal Return on PT. Bank Niaga, Tbk. (BNGA)
(Continued)

Event Window	Date	JCI.Price	Rm	BNGA.Price	Ri	α_i	β_i	E(Ri)	$ei = ARit = Ri - E(Ri)$
t-69	20-Feb-08	2,689.00	-0.0085	727.00	-0.0384	0.0002	1.1480	(0.0095)	(0.0289)
t-68	21-Feb-08	2,734.00	0.0167	747.00	0.0275	0.0002	1.1480	0.0194	0.0081
t-67	22-Feb-08	2,741.00	0.0026	737.00	-0.0134	0.0002	1.1480	0.0032	(0.0166)
t-66	25-Feb-08	2,752.00	0.0040	737.00	0.0000	0.0002	1.1480	0.0048	(0.0048)
t-65	26-Feb-08	2,739.00	-0.0047	737.00	0.0000	0.0002	1.1480	(0.0052)	0.0052
t-64	27-Feb-08	2,740.00	0.0004	747.00	0.0136	0.0002	1.1480	0.0006	0.0129
t-63	28-Feb-08	2,756.00	0.0058	756.00	0.0120	0.0002	1.1480	0.0069	0.0051
t-62	29-Feb-08	2,722.00	-0.0123	747.00	-0.0119	0.0002	1.1480	(0.0139)	0.0020
t-61	03-Mar-08	2,652.00	-0.0257	717.00	-0.0402	0.0002	1.1480	(0.0293)	(0.0109)
t-60	04-Mar-08	2,635.00	-0.0064	707.00	-0.0139	0.0002	1.1480	(0.0071)	(0.0068)
t-59	05-Mar-08	2,640.00	0.0019	707.00	0.0000	0.0002	1.1480	0.0024	(0.0024)
t-58	06-Mar-08	2,656.00	0.0061	717.00	0.0141	0.0002	1.1480	0.0072	0.0070
t-57	10-Mar-08	2,528.00	-0.0482	678.00	-0.0544	0.0002	1.1480	(0.0551)	0.0007
t-56	11-Mar-08	2,524.00	-0.0016	688.00	0.0147	0.0002	1.1480	(0.0016)	0.0163
t-55	12-Mar-08	2,556.00	0.0127	697.00	0.0131	0.0002	1.1480	0.0148	(0.0017)
t-54	13-Mar-08	2,441.00	-0.0450	648.00	-0.0703	0.0002	1.1480	(0.0514)	(0.0189)
t-53	14-Mar-08	2,383.00	-0.0238	638.00	-0.0154	0.0002	1.1480	(0.0270)	0.0116
t-52	17-Mar-08	2,312.00	-0.0298	599.00	-0.0611	0.0002	1.1480	(0.0340)	(0.0272)
t-51	18-Mar-08	2,340.00	0.0121	619.00	0.0334	0.0002	1.1480	0.0141	0.0193
t-50	19-Mar-08	2,324.00	-0.0068	619.00	0.0000	0.0002	1.1480	(0.0076)	0.0076
t-49	24-Mar-08	2,339.00	0.0065	648.00	0.0468	0.0002	1.1480	0.0076	0.0392
t-48	25-Mar-08	2,420.00	0.0346	678.00	0.0463	0.0002	1.1480	0.0400	0.0063
t-47	26-Mar-08	2,441.00	0.0087	707.00	0.0428	0.0002	1.1480	0.0102	0.0326
t-46	27-Mar-08	2,451.00	0.0041	737.00	0.0424	0.0002	1.1480	0.0049	0.0375
t-45	28-Mar-08	2,478.00	0.0110	756.00	0.0258	0.0002	1.1480	0.0129	0.0129
t-44	31-Mar-08	2,447.00	-0.0125	737.00	-0.0251	0.0002	1.1480	(0.0141)	(0.0110)
t-43	01-Apr-08	2,393.00	-0.0221	717.00	-0.0271	0.0002	1.1480	(0.0251)	(0.0020)
t-42	02-Apr-08	2,342.00	-0.0213	717.00	0.0000	0.0002	1.1480	(0.0242)	0.0242
t-41	03-Apr-08	2,238.00	-0.0444	697.00	-0.0279	0.0002	1.1480	(0.0507)	0.0229
t-40	04-Apr-08	2,277.00	0.0174	678.00	-0.0273	0.0002	1.1480	-0.0202	(0.0475)
t-39	07-Apr-08	2,287.00	0.0044	688.00	0.0147	0.0002	1.1480	0.0053	0.0095
t-38	08-Apr-08	2,250.00	-0.0162	668.00	-0.0291	0.0002	1.1480	(0.0183)	(0.0107)
t-37	09-Apr-08	2,180.00	-0.0311	648.00	-0.0299	0.0002	1.1480	(0.0355)	0.0055
t-36	10-Apr-08	2,236.00	0.0257	658.00	0.0154	0.0002	1.1480	0.0297	(0.0143)
t-35	11-Apr-08	2,304.00	0.0304	648.00	-0.0152	0.0002	1.1480	0.0331	(0.0503)
t-34	21-Jul-08	2,195.00	0.0252	923.00	0.0795	0.0002	1.1480	0.0292	0.0504
t-35	22-Jul-08	2,213.00	0.0082	923.00	0.0000	0.0002	1.1480	0.0096	(0.0096)
t-36	23-Jul-08	2,226.00	0.0059	933.00	0.0108	0.0002	1.1480	0.0070	0.0039
t-37	24-Jul-08	2,257.00	0.0139	953.00	0.0214	0.0002	1.1480	0.0162	0.0052
t-38	25-Jul-08	2,245.00	-0.0053	953.00	0.0000	0.0002	1.1480	(0.0059)	0.0059
t-39	28-Jul-08	2,276.00	0.0138	953.00	0.0000	0.0002	1.1480	0.0161	(0.0161)
t-40	29-Jul-08	2,279.00	0.0013	943.00	-0.0105	0.0002	1.1480	0.0017	(0.0122)
t-41	31-Jul-08	2,305.00	0.0114	943.00	0.0000	0.0002	1.1480	0.0133	(0.0133)
t-42	01-Aug-08	2,249.00	-0.0243	933.00	-0.0106	0.0002	1.1480	(0.0277)	0.0171
t-43	04-Aug-08	2,228.00	-0.0093	933.00	0.0000	0.0002	1.1480	(0.0105)	0.0105
t-44	05-Aug-08	2,186.00	-0.0189	933.00	0.0000	0.0002	1.1480	(0.0214)	0.0214
t-45	06-Aug-08	2,187.00	0.0005	933.00	0.0000	0.0002	1.1480	0.0008	(0.0008)
t-46	07-Aug-08	2,199.00	-0.0055	914.00	-0.0204	0.0002	1.1480	0.0065	(0.0269)
t-47	08-Aug-08	2,196.00	-0.0014	923.00	0.0098	0.0002	1.1480	(0.0013)	0.0112
t-48	11-Aug-08	2,134.00	-0.0282	923.00	0.0000	0.0002	1.1480	(0.0322)	0.0322
t-49	12-Aug-08	2,058.00	-0.0356	914.00	-0.0098	0.0002	1.1480	(0.0407)	0.0309
t-50	13-Aug-08	2,064.00	0.0029	914.00	0.0000	0.0002	1.1480	0.0036	(0.0036)
t-51	14-Aug-08	2,107.00	0.0208	914.00	0.0000	0.0002	1.1480	0.0241	(0.0241)
t-52	15-Aug-08	2,085.00	-0.0104	933.00	0.0208	0.0002	1.1480	(0.0118)	0.0325
t-53	19-Aug-08	2,042.00	-0.0206	874.00	-0.0632	0.0002	1.1480	(0.0234)	(0.0398)
t-54	20-Aug-08	2,070.00	0.0137	904.00	0.0343	0.0002	1.1480	0.0160	0.0184
t-55	21-Aug-08	2,088.00	0.0087	904.00	0.0000	0.0002	1.1480	0.0102	(0.0102)
t-56	22-Aug-08	2,120.00	0.0153	914.00	0.0111	0.0002	1.1480	0.0178	(0.0068)
t-57	25-Aug-08	2,127.00	0.0033	914.00	0.0000	0.0002	1.1480	0.0040	(0.0040)
t-58	26-Aug-08	2,108.00	-0.0089	874.00	-0.0438	0.0002	1.1480	(0.0100)	(0.0337)
t-59	27-Aug-08	2,131.00	0.0109	874.00	0.0000	0.0002	1.1480	0.0128	(0.0128)
t-60	28-Aug-08	2,145.00	0.0066	864.00	-0.0114	0.0002	1.1480	0.0078	(0.0192)