The Effect of Mergers and Acquisitions on Shareholder Returns

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Table of Contents

Part Two
Methodology

Chapter 4
Methodology

Part Three
Data Analysis and Empirical Findings

Chapter 5
The Regression Estimates and Statistical Tests

Chapter 6
The Abnormal Return After the Announcement of Mergers and Acquisitions

Chapter 7
The Abnormal Return After the Outcome is Known

Chapter 8
The Abnormal Return for Acquisition of More Than 50%

Chapter 9
The Abnormal Return for Acquisition of Less Than 50%

Part Four
Conclusion and Policy Implications

Chapter 10
Summary, Conclusion and Policy Implications

Abstract

Mergers and acquisitions not only affect the value of merging firms but also generate a positive or negative wealth effect for shareholders of firms involved. The Hubris theory hypothesises that mergers and acquisitions affect the value of the firms as well as shareholder wealth. This theory predicts that as a result of mergers and acquisitions, the value of target firms rises, whilst the value of bidding firms diminishes. Consequently, shareholders of target firms gain a positive wealth effect while shareholders of bidding firms experience a negative wealth effect. Most empirical evidence suggests that shareholders of bidding firms suffer a small loss or sometimes earn a marginal gain while the target shareholders obtain a large gain.

However, no previous studies on shareholder wealth effect have investigated whether the differences in abnormal returns are influenced by differences in controlling interest in the target firms. The purpose of the present study is to investigate whether an acquisition of more than 50% and an acquisition of less than 50% generate the same wealth effects for the shareholders of bidding and target firms. The rationale is that the shareholders of bidding and target firms might choose a merger which generates better abnormal returns if their wealth is affected by the differences in controlling interest in target firms.

The findings of this study demonstrate that surrounding the announcement of merger proposals, shareholders of target firms gain a large abnormal return and shareholders of acquiring firms earn a small abnormal return. This outcome is consistent with the Hubris theory on mergers and acquisitions. Regardless of the announced degree of control (more or less than 50%), the shareholders of the target firms suffer a negative wealth effect while those of the acquiring firms enjoy a non-negative effect. The present research has produced evidence to the contrary of the predictions of the hubris hypothesis. The implication is that shareholders of target firms should maximise their wealth effect during the announcement of merger proposals. For the shareholders of acquiring firms, mergers and acquisitions are not a risky investment since they maintain value and realise their objective in acquiring a target interest.

Declaration

This dissertation contains no material which has been accepted for the award of any degree in any university or equivalent institution and, to the best of my knowledge and belief, the dissertation contains no material previously written or published by any person, except where due reference is made in the text of the work.

Agus Sugiarto

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List of Tables

List of Illustrations

Chapter 1

Introduction

1.1. Background

Mergers and acquisitions became a "*trend* " during the 1960s and 1980s (Lev, 1993; Larcker, 1993), with so-called merger "*waves*" during this period. Many firms engaged in merger activities during these merger "waves", not only in the United States and Europe, but also in Australia and Japan (Lubatkin and Lane, 1996), the reason being that mergers and acquisitions have played an important role in the business environment since the 1960s emerging not only as a part of financial activity but also as part of investment strategy. Consequently, much study and research was conducted on mergers and acquisition over that period, especially ones which focused on the effect of mergers and acquisitions on shareholder wealth.

The study of mergers and acquisitions has declined since the early 1990s, yet many issues remain unresolved. In the past five years, a few studies on the effect of mergers and acquisitions on shareholder wealth have been undertaken. Among these, Comment and Schwert (1995) argue that mergers declined at the end of the 1980s and early 1990s; Mitchell and Mulherin (1996) argue that the merger wave which occurred in the 1980s was the most active takeover period during the past century and Mikkelson and Partch (1997) maintain that the period of 1984 - 1988 was the more intense takeover period and 1989 - 1993 was a less active period.

Recent literature on mergers and acquisitions has concentrated on other subjects beyond shareholder returns, such as the effect of managerial wealth on mergers (Cotter and Zenner, 1994); the impact of mergers on industry structure (Mitchell and Mulherin, 1996); managerial failure (Franks and Mayer, 1996); anti takeover amendments (Akhigbe and

Madura, 1996); managerial turnover (Mikkelson and Partch,1997); managerial compensation (Agrawal and Knoeber, 1998); managerial ownership (Ghosh and Ruland, 1998).

1.2. The Hubris theory of mergers and acquisitions

The Hubris theory (Roll, 1986) takes a hypothetical view that mergers and acquisitions affect the value of merging firms. When a merger or acquisition announcement is made, the shareholders of the bidding firm incur a loss in terms of the share price while those of the target firm generally enjoy a rise in the share price.

The current reasoning behind this is that when a firm announces a merger offer to the target, the share price of the target firm increases because shareholders in the target firm are ready to transfer shares in response to the high premium that will be offered by the acquiring firm. Roll (1986) says " ...the hubris hypothesis is very simple: decision-makers in acquiring firms pay too much for their targets..." (p.213). This behaviour is sometimes attributed to the overconfidence of the shareholders of the bidding firm, hence the term "hubris". The increase in share price of a target firm finally drives up the value of the target firm. On the other hand, the shareholders of acquiring firms suffer a capital loss of share value because they must allocate cash or additional shares to the target shareholders, and sometimes they overpay (Barnes, 1998). Singh (1998) points out that there are a number of studies supporting the existence of bidder overpayment consistent with the Hubris hypothesis. Consequently, the decrease in share prices of an acquiring firm will drive down the value of the bidding firm. Therefore, a takeover offer drives up the value of acquired firms and drives down the value of acquiring firms (McCardle and Viswanathan, 1994).

Roll (p.197) says, "My purpose here is to suggest a different and less conclusive interpretation of the empirical results. This interpretation may not turn out to be valid, but I hope to show that it has enough plausibility to be at least considered in further investigation". In view of this hypothesis, it is important to test whether this theory is able to accurately predict behaviour under different conditions of mergers and acquisitions. An important test of a theory is its ability to predict behaviour under real conditions (Kerlinger, 1992). Also theories of a speculative nature, such as the hubris hypothesis, must be "rigorously and ruthlessly tested by observation or experiments" (Chalmers, 1982, p.38). If

a theory cannot be supported by observational or experimental tests, it must be replaced by ones that make better predictions and have better empirical support.

Hubris hypothesis has been empirically tested by studies such as : Dodd and Ruback, 1977; Bishop *et.al.*, 1987; Ravenscraft and Scherer, 1989; Franks and Harris, 1989; Zhang, 1995; Sudarsanam *et.al.*, 1996; Grullon *et.al.*, 1997; Maquieria *et.al.*, 1998. These studies have produced empirical evidence in support of the hubris theory.

1.3. The rationale of the present study

A survey of previous studies reveals that issues in the area of shareholder wealth effects have not been addressed in the existing literature on mergers and acquisitions. In particular, none of the studies explain whether the transfer of shares from target firms to bidding firms occur partly (less than 50%) or wholly (more than 50%), and whether the degree of control acquired has any impact on the share rices of the bidding and target firms.

Theoretically, if a bidding firm acquires more than 50% of target shares, it will have a controlling interest in the target firm. This controlling interest empowers the firm to determine the direction of the acquired firm by making the corporate decisions. Conversely, if a bidding firm acquires less than 50% of target shares, it does not have control of the acquired firm because the acquiring firm has insufficient votes to dictate the policy and direction of the target firm even though practically the acquiring firm becomes the biggest shareholder in the acquired firm. The differences in the controlling interest could have an impact on the management and the operations of the merged entity, which in turn could have an impact on its profitability.

The thesis acknowledges that in certain circumstances it is possible for shareholders with less than 50% ownership to have an effective control of the major decisions of the firm mainly because of the fragmentation of the shares into a large number of minority shareholders. This, however, is not necessarily true for all circumstances and the only way to establish control is to examine the decision making process of the major decisions. This could be a futile task because what goes on in the boardroom is not public information, even

under the strict disclosure regulations.

Under the efficient market hypothesis it is assumed that shareholders are fully informed and are rational. A fully informed rational shareholder when making decisions about investment will take the management control of the firm into consideration. These issues need to be taken into account in research on mergers and acquisitions because there may be different returns for different controls of interests for shareholders of acquiring and target firms. For example a shareholder might have different expectations about the return on investment for different degrees of control acquired during an acquisition. This is seen situation such as with *Telstra* in Australia where with the Government of Australia owning 51% of the shares, the effective control is with the government and the market sentiment is against the company. Empirically, it is also essential to understand the different impact on shareholder wealth and the attitude of the shareholders when there are controlling interests of less than 50% and more than 50% of target firms.

Previous studies that support the Hubris hypothesis have not investigated whether the hypothesis produces the same result when an interest of more than 50% compared with an interest of less than 50% of a target firm is acquired. This proposition is important in determining whether shareholder wealth effects are influenced by differences in the controlling interests of target firms.

The importance of the differences of acquisition of less than 50% and acquisition of more than 50% is that the shareholders of bidding and target firms may implement different policies or attitudes on mergers and acquisitions if their wealth effects are influenced by the differences in the level of controlling interests. In other words shareholders may support or reject a merger proposal, or merger offer, if it affects their gains or losses.

The implication of these differences to the shareholders of acquiring and target firms can be linked to the Hubris theory. The hubris hypothesis asserts that the overpayment by the shareholders of the bidding firm for the target firm is because of the overconfidence. The present research will empirically establish whether an acquisition, regardless of whether it is more than 50% or less than 50%, will drive down the wealth of the shareholders of

acquiring firms and drive up the wealth of target shareholders. If the answer is yes, any merger or acquisition will result in a decrease in the value of the acquiring firms regardless of whether the merger or the acquisition results in a controlling interest or not.

1.4. Definition of mergers and acquisitions

The terms 'merger', 'acquisition' and 'takeover' can be used interchangeably, because they have a similar meaning one to another (Jarrel *et.al.*, 1988; Berkovitch and Khanna, 1991). In practical use, there is no difference between these terms. Some authors prefer the term 'takeover' rather than merger or acquisition, and the others prefer use 'merger and acquisition' instead of 'takeover'. However, most of the literature on mergers and acquisitions uses the term 'merger and acquisition' rather than 'takeover'.

This study will use these terms interchangeably and define merger, acquisition and takeover as the same, that is, an offer which is made by the bidding or acquiring firms to the shareholders of target or acquired firms. Bidding firms publicly announce whether they intend to acquire greater or less than 50% of their target firm's shares.

1.5. The objective of the research

1.5.1. General objective

The general objective of this research is to estimate the returns for shareholders of target and acquiring firms on mergers and acquisitions by using an event study method in order to test whether the Hubris hypothesis is relevant in different conditions. The event studies method uses share price movements of target and bidding firms in the stock market prior to, and up until after the announcement of the offer, as well in the period after the merger outcome is known, in order to measure the change of share prices during that period of time.

1.5.2. Specific objectives

Four specific objectives will be addressed in this research.

Specific objective 1 :

To estimate shareholders' abnormal returns of the acquiring firms 10 days prior to and 10 days after announcement of mergers.

Specific objective 2 :

To estimate shareholders' abnormal returns of the acquired firms 10 days prior to and 10 days after announcement of mergers.

Specific objective 3 :

To estimate shareholders' abnormal returns of the acquiring firms 10 days after the outcome is known (for acquisitions of more than 50% and less than 50%).

Specific objective 4 :

To estimate shareholders' abnormal returns of the acquired firms 10 days after the outcome is known (for acquisitions of more than 50% and less than 50%).

1.6. Limitation of the research

The research area of mergers and acquisitions is immense. A study of mergers and acquisitions can be investigated from the view points of various disciplines such as finance, accounting, management, organisational behaviour, corporation law, and social science. The study of mergers and acquisitions in the present dissertation will concentrate on a particular discipline to obtain a focused result, namely to a financial economics aspect only. The financial economics aspect of this research will investigate the shareholder wealth effect, that is, whether mergers and acquisitions significantly generate a wealth effect for the

shareholders of target and bidding firms.

1.7. Research method

The model applied to measure the abnormal returns of mergers and acquisitions is based on the event studies methodology, that is, the market model and the market adjusted model. The measurement of abnormal returns is taken from 10 days prior to the announcement of mergers and acquisitions up until 10 days after the announcement. The abnormal returns for the acquisition of more than 50% and less than 50% will then be measured over the ten day period after the announcement of merger outcomes. The average rates of return for the sample of bidding and target firms will be calculated from the security market lines estimated via simple regressions.

1.8. Data

This study employs data from mergers and acquisitions that occurred in Australia between January 1993 and December 1997. The data of mergers and acquisitions employed in this study is *The Formal Takeover Offe*r stated in Section 616 of the *Australian Corporations Law*. All firms in the sample, bidding firms and target firms, are publicly listed companies chosen at random from various industries. A total of 81 bidding and 90 target firms were included in the analysis.

1.9. Organisation of the study

The thesis is organised into four parts, each part in turn organised into one or more chapters..

Chapter one consists of the background of the study, the definition of 'merger' and 'acquisition', and describes the Hubris theory of mergers. This is followed by the rationale for the study and the objective of the study. It concludes with a brief description of the method and the data used.

Part One contains a literature review detailing the theoretical aspect of mergers and acquisitions. Previous empirical findings on shareholder wealth on mergers and acquisitions will also be discussed, and applied methods for measuring shareholder wealth effects will be investigated. This part consists of two chapters (Chapter Two and Three). *Chapter Two* discusses the reasons why mergers and acquisitions take place, the motives behind mergers and acquisitions, and provides some hypotheses relating to mergers and acquisitions. *Chapter Three* reviews the literature on mergers and acquisitions. It provides the two major applied models commonly used to measure abnormal returns, that is, event studies and accounting numbers. This chapter also discusses empirical findings from previous studies.

Part Two consists of only one chapter, that is, *Chapter Four* which contains the methodology section of this study consisting of an introduction, the research model and data.

Part Three consists of data analysis and empirical findings. It provides the empirical results of the research, that is, the effect of mergers and acquisitions on shareholder wealth. This part consists of five chapters (Chapters Five, Six, Seven, Eight and Nine). *Chapter Five* discusses the results of the regression estimates of the security market lines, the beta estimates, and their statistical significance. *Chapter Six* discusses the abnormal returns after the announcement of mergers and acquisitions. It examines the abnormal returns for the shareholders of bidding and target firms based on market model and market adjusted model. *Chapter Seven* analyses the abnormal returns after the outcome of mergers and acquisitions is known publicly. The wealth effect of mergers and acquisitions is presented on both the market model and market adjusted model. *Chapter Eight* discusses the abnormal returns for acquisition of more than 50%. The wealth effect for the shareholders of bidding and target firms is prepared on both market model and market adjusted model. *Chapter Nine* provides the abnormal returns for acquisition of less than 50% of target firms. The shareholders' wealth is presented on the market model and market adjusted model.

Part Four provides the summary, conclusion and policy implications, consisting of one chapter, *Chapter Ten*. It reviews the results of the findings of this study, some theoretical background on mergers and acquisitions, the gaps from the previous studies, and the implications of these studies on the effect on shareholder wealth.

Part One

Literature Review

Chapter 2

The Rationale for Mergers and Acquisitions

2.1. Introduction

A common view of mergers and acquisitions is that they are stimulated by the firms' objectives to obtain more benefit from the merged firms compared to their total value if they were independent. Dutz (1989) argues that even though mergers are profitable for share holders, they are socially undesirable and should be prohibited because they may result in rationalisation of capacity. Some studies such as Caves (1989) indicate that mergers are profitable activities and socially desirable, because they create value and are economically efficient. Increased efficiency may arise through synergistic effects which means that synergistic gains such as operating synergy and financial synergy can also be reached through mergers and acquisitions (Maquieira *et.al.*, 1998).

Furthermore, Sudarsanam *et.al.* (1996) argue that there are three sources of value creation in mergers : operational synergy, managerial synergy and financial synergy. Lev (1993) finds that financial synergy can be achieved in short term and long term goals. Short term financial synergies are, for example, price-earning effects, improved liquidity, and tax effects. The long term financial synergies include increased debt capacity, improved capital redeployment, and stabilised earnings. Lev also points out that motives for mergers are not only based on financial purposes, but also on such managerial motives as executive compensation, power needs, power growth, human capital and risk diversification.

Bradley, Desai and Kim (1983) find that mergers can generate an operating synergy resulting from efficient management, economies of scale, improved production techniques, the combination of complementary resources, increased market power and the redeployment of assets to more profitable uses. Ravenscraft and Scherer (1989) propose that corporate mergers are motivated by reasons such as displacement of inefficient managers, achievement of economies of scale and scope in production, distribution and

financing, enhancement of monopsony[1] or monopoly power[2], exploitation of tax reduction opportunities, and construction of managerial empires.

2.2. The Hypotheses of mergers and acquisitions

Based on the motives for mergers and acquisitions above, the following are some of the theoretical frameworks concerning the rationale for mergers and acquisitions.

2.2.1. Value maximising hypothesis

This hypothesis originates in economic theory (Manne, 1965) which views mergers and acquisitions as an activity that may generate a valuable asset. Under this hypothesis, the managers of firms have a primary goal of maximising shareholder wealth (Firth, 1980; Sudarsanam et.al., 1996; Gonzalez *et.al.*, 1997). According to this hypothesis, a merger or acquisition should generate a positive economic gain to the merging firms or at least non negative returns (Baradwaj *et.al.*, 1992). Hence, any merger or acquisition activity should meet the same criteria as any other investment decision (Halpern, 1983). Most mergers and acquisitions are value maximising activities whose aim is to boost shareholder wealth. If this objective cannot be met by the managers of firms engaging in mergers and acquisitions, they may not proceed with the merger proposal or may reject any merger offer, and therefore, in this case, the ability to pick a good takeover target is essential (Powell, 1997)

Managers should not conduct any merger or acquisition if there are no positive gains expected through the merger of their firms. If the firms' value increases as a result of a merger or acquisition, it indicates that the firms involved in a merger or acquisition are assumed to be value maximisers (Asquith and Kim, 1982; Malatesta, 1983). Even if, for example, at the beginning of making a merger proposal shows a negative net present value investment, it does not mean that this merger proposal does not generate any gain to the shareholders of merging firms. The gain raised from mergers and acquisitions may come after the announcement of merger offers or after the outcome of mergers is known.

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1. Monopsony power is the power of a firm to reduce the payment it has to make to workers (McDonald, 1992)

2. Monopoly power is the power of a firm to reduce its output in order to raise price (McDonald, 1992)

Financial motivations and synergy effects are among those which are consistent with the value maximising hypothesis (Choi and Philippatos, 1983; Halpern, 1983). Maquieira *et.al.* (1998) argue that financial synergies can arise from various aspects of the merging firms, such as from a reduction of default risk which finally reduces borrowing costs and diversification of equity risk for shareholders. Haugen and Langetieg (1975) conclude that it is possible to minimise the risks of insolvency and bankruptcy by merging with another firm. In addition, Berger *et.al.* (1998) point out that mergers and acquisitions can generate a static effect which means the combination of assets of merging firms becomes bigger than before. The bigger the assets, the greater the possibility of the merging firms displaying a better wealth effect for the shareholders.

2.2.2. Non -value maximising hypothesis

This hypothesis, proposed by Halpern (1973, 1983), takes the view that any merger or acquisition has no economic gains for the merging firms. The positive returns are not the objective of the firm conducting a merger attempt, and therefore, the bidding firms are not interested in the profitability of a merger. According to Halpern, it is not necessarily important for the managers of the firms who engage in mergers and acquisition to display positive returns for their shareholders.

In this type of merger, the merging firms, especially the acquiring ones, will seek some other objectives beyond the positive economic gains for their firms, such as to maximise sales growth, to control a conglomerate empire, to lift company image, to enter a new market which is not possible without a merger or acquisition due to government regulations, to change the target market, to expand to a new geographic market, to acquire qualified managers and expertise, and so on.

Meanwhile, a study by Healy, Palepu and Ruback (1997) finds that strategic takeovers that can be categorised as non-value maximising activity (takeovers that typically involved stock payment for firms in similar businesses) generate more gains than financial takeovers (takeovers that generally involved cash payments for firms in unrelated businesses). This result is very interesting because, in fact, the non-value maximising merger often

outperforms the value maximising merger. Most non-value maximising mergers are horizontal mergers which are subject to government restrictions and regulations because the non-value maximising mergers sometimes create monopoly and oligopoly. The involvement of governments, as part of an antitrust policy, is essential to protect public interests against an increase in the use of market power in setting prices (Akhavein *et.al.*, 1997).

A study by Berger *et.al.* (1998) discovered that some mergers and acquisitions in the U.S. Banking Industry are also driven by some non-value maximising objectives, for example, to consolidate the merging firms, to refocus small business lending. Studies by Bhagat, Sleifer and Vishny (1990), and Kaplan and Weisbach (1992) point out that operating synergies can only be created in mergers between firms in the same or related industries.

2.2.3. Managerial hypothesis

Mueller (1969) proposes that mergers can be used by the managers of firms as a tool to achieve their own personal interests. Under this hypothesis, managers conduct mergers or acquisitions if they contribute to their personal wealth (Agrawal and Knoeber, 1998; Ghosh and Ruland, 1998). Bishop *et.al.* (1987) call this hypothesis an anti takeover theory, because managers act to maximise their own utility. These objectives, however, basically do not always maximise shareholder returns (Firth, 1980). Therefore, managers' acquisition decisions are not designed to enhance shareholder wealth. Lev (1983) also argues that the increase in the power of the managers boosts their own interest at the expense of that of their companies' shareholders.

Furthermore, Amihud and Lev (1981) comment that managers engage in mergers and acquisitions to minimise their human capital risk. In addition, merger activities can be seen by the managers as an attempt to diversify their human capital risks (Morck, Shleifer and Vishny, 1990). Mergers and acquisitions allow managers to limit their risks by creating larger but less risky firms (Maquieira *et.al.*, 1998). This argument is logical when the risk to the new merging firm is divided and shared to some people, leading managers to reduce their risks to the minimum possible.

The managerial hypothesis is consistent with the argument from Larcker (1983) who states that managers focus on the short term, and always try to maximise their available utility in their firm. Again, this argument is logical because most managers are hired for a certain period of time, and consequently they will try to maximise their wealth before at the end of a contract. Therefore, when a merger or acquisition provides a manager with large personal benefits, he is more willing to sacrifice the market value of the firm (Morck *et.al.*, 1990).

On the other hand, shareholders prefer to maximise the share price, which is more a long term outlook. To minimise this conflicting interest between managers and shareholder objectives, it is very common for firms to provide their managers with share options. By holding shares or options in their firms managers have a vested interest and are morally responsible for maximising their own interests as well as shareholder wealth.

2.2.4. Inefficient management hypothesis

Mergers or acquisitions can also be viewed as a response to inefficient management. This scenario is seen by investors as a response to a situation where the incumbent management has pursued inefficient policies, and consequently, the firm becomes an acquisition target (Asquith, 1983; Malatesta, 1983).

Inefficient management can be identified from several indicators, for example, poor earnings, undervalued shares and low P/E ratio. These indicators signal inefficient management and demonstrate that the resources in the target firms are not utilised efficiently and properly which motivates the bidding firms to takeover the target firm (Dodd and Ruback, 1977). If the firm is acquired, the bidding firm will employ a new management team who will manage the resources more efficiently.

Organisation effectiveness can be considered as part of efficient management. Mergers maximise the resources from the combining firms, thus, the organisation's performance becomes effective. It also increases productivity through combining two or more resources one of which is underutilised.

Furthermore, the new management may change the organisation structure, from a centralised to a decentralised structure (Senn, 1994). This change makes the organisation more effective in handling day to day activity, because it can react more quickly to problems which arise. If an organisation can work efficiently, it maximises its available resources.

2.3. Summary

There are various motives why managers or firms conduct mergers and acquisitions. Basically there are four theories for the rationale behind mergers and acquisitions. The value maximising theory states that mergers and acquisitions should maximise shareholder wealth. The non-value maximising theory says that mergers and acquisitions are not necessary to produce economic gain for the shareholder. The managerial theory states that in some cases mergers and acquisitions are used by the manager of merging firms as an instrument to pursue personal interests. The inefficient management theory emphasises that mergers and acquisition can be seen as a response to replace inefficient resources.

Chapter 3

Abnormal Return : Measurement and Empirical Evidence

3.1. Introduction

Mergers are also considered part of investment strategies (Asquith, Bruner and Mullins, 1983). Many corporate managers, investors, and also shareholders believe mergers and acquisitions create a financial synergy or some benefit to their firm. No firms should merge if they can not emerge from the process with advantages for their share holders. Because mergers are considered as an investment there needs to be an incentive for the shareholders to acquire firms which increase the variability of the firm's cash flow. This means that shareholders may obtain positive abnormal returns at the expense of bond holders by increasing the firm's risk through merger, even though there is no real synergy. Therefore, mergers can increase income as well as risk for the shareholders (Asquith and Kim, 1982).

It is apparent that mergers have become an essential investment strategy in business decision making, and hence, it is important to measure the returns from capital gains as a result of mergers. The shareholder may earn positive abnormal returns because of increased risk through mergers and acquisitions. There is some empirical evidence supporting increased returns to shareholders as a result of mergers (Dodd, 1976; Bradley *et.al.*, 1988; Franks and Harris, 1989), and evidence indicating decreased returns to share holders when anti-merger lawsuits are announced (Wier, 1983) or when anti takeover amendments are implemented (Akhigbe and Madura, 1996). Similar results are found in Jarrel and Poulsen (1988) who argue that a defence strategy results in a significant wealth loss to target shareholders.

There are two techniques for determining the impact of mergers and acquisitions on shareholder wealth, namely, event studies and accounting numbers.

3.2. Event studies

Measuring returns by using event studies is the most common method. It was introduced for the first time by Fama, Fisher, Jensen and Roll (1969). Event studies use the stock market as an instrument to provide useful evidence on how share prices react to information and to detect any change or movement of share prices as a result of mergers and acquisitions.

Event studies measure the returns to shareholders from mergers based on share price changes; that is, a change of share price from what it was before the merger to what it becomes after the merger. Bishop, Dodd and Officer (1987) argue that to measure returns by using event studies is a superior method to that of analysing abnormal returns, because it provides the "best estimates" of the firm's value after merger.

The characteristic of the capital market as a forward looking medium for changes in share prices results in a reliable measure of price changes since it is assumed that the capital market is efficient. In an efficient capital market, the share prices reflect the available information instantly (Fama, 1970). Accordingly, share prices will react to this new information by moving up or down.

Event studies which originate from semi-strong form efficient markets (Fama,1991) result from such events as the announcement of stock splits, unexpected changes in dividends and changes in capital structure and mergers. In addition, Fama (1991) points out that event studies can provide a better and clearer picture of the speed of adjustment of stock prices to new information relating to merger activities. In his latest article, Fama (1998) maintains that event studies methodology based on the Efficient Market Hypothesis is still valid even though a few recent studies on efficient market hypothesis seem to produce some anomalies.

The reason why event studies receive strong support for measuring returns from mergers and acquisitions is that an information event (the merger announcement) can be dated precisely, and thus, the share prices will move to follow this new available information. Therefore, the event studies method based on market efficiency can provide us with essential evidence for stock returns.

However, in some cases, the information may have been anticipated before the announcement of mergers or takeovers. For example, Halpern (1973) shows that share prices begin to anticipate a merger or acquisition eight months prior to the announcement; Franks *et.al.* (1977) finds that the share price starts to anticipate a merger proposal three months before the announcement. Nevertheless, the event studies method is still the best and preferable choice at the present time due to its reliability in measuring the capital gain or loss that results from mergers and acquisitions.

3.2.1. The advantages of event studies

(a). Information effects

A merger proposal announced by an acquiring firm to a target firm generates a signal to the share market and investors that there is an *"event"* that may effect the share prices of their firms. Prabhala (1997) points out that event studies have the ability to test the impact of an event on the announcing firm's value and to estimate its magnitude. Additionally, event studies can identify the factors that explain changes in the firm's value on the event date.

For these reasons, the use of event studies methodology to measure the wealth effect of mergers and acquisitions for the shareholders of bidding and target firms provides a reliable method. The announcement of any merger or acquisition by a bidding firm contains a lot of information which is absorbed by the investors in the market and the shareholders of bidding and target firms as an indicator of their expected future earnings. This argument is supported by Healy *et.al.* (1997) who comment that merger announcements represent investors' expectations of the benefits of mergers.

(b). Quick measurement of returns

The effect of mergers and acquisitions on shareholder returns can be measured and obtained quickly by using event studies methodology. The wealth effect on the bidding and target shareholders can also be measured daily, weekly or monthly. The announcement of mergers and acquisitions releases some information to the market which influences the share price

of the merging firms which is increasing or decreasing in response to new information. Therefore, the shareholders of acquiring and acquired firms can expect a capital gain or loss instantly following a merger announcement.

3.2.2. The drawbacks of event studies

Although event studies have been considered the most popular measure of abnormal returns, they do have some weaknesses which are inherent to this technique, while other weaknesses are more concerned with the operationalising of the technique. This is discussed in the following section.

(a). Different models

The model used to measure the abnormal returns differs from one author to another. For example, Allen and Sirmans (1987) employ the mean adjusted returns, Dennis and McConnell (1986) use the market adjusted returns, Eckbo (1983) and Dodd and Ruback (1977) employ the market model, Asquith and Kim (1983) implement a model based on the CAPM method, whilst Langetieg (1978) uses the three-factor performance index.

As these authors employ different models to measure the returns, it is difficult to standardise the results of the tests from various models. The result from one author is sometimes not comparable to the others due to model differences.

(b). Different "event time"

The standard of time used by researchers also differs between studies. There is no standard time of the "event" which can be reliably measured. There are several event periods used as measures, such as, two day announcement effects, one month announcement effects, and abnormal returns from a few days before the announcement through to when the outcome is known. In addition, a different measure within the same category of event periods is sometimes used.

For example, the measure of total abnormal returns from the announcement through to the

outcome also differs from one researcher to another. Franks and Harris (1989) measure the returns four months before the announcement through to one month after the announcement, Mandelker (1974) takes the month after the announcement through to twelve months after the effective date, and Asquith (1983) uses the day of the announcement and continues for 240 days after the outcome announcement, Dodd and Ruback (1977) take a period of 12 months before the announcement through to 60 months after the announcement. The implication of these differences is the creation of different outcomes of abnormal returns for shareholders of the acquiring and target firms from one study to another and each study provides its own justification.

(c). Source of economic gains

Most studies of mergers and acquisitions using event studies can not identify the source of economic gains obtained by the shareholders of the acquiring and acquired firms. Healy *et.al.* (1992) point out that there is an inability in share price performance studies to determine whether mergers and acquisitions create real economic gains for shareholders and to identify where the gains come from. Further, they say that the real gains from mergers and acquisitions may arise from different sources, such as operating synergies, monopoly power and tax savings. However, the event studies can not identify which factor contributes to the real gains which is reflected in the change in share prices. The share price performance of the merging firms does not say anything about the source of economic gain and where it comes from. This is consistent with the argument by Schwart (1984) who proposes that there is no single caused explanation for the motive of mergers and acquisitions.

3.3. Accounting numbers

Merger and acquisition effects can be measured by using financial statements or accounting numbers. The financial statement approach involves analysis and comparison of some accounting figures before and after mergers for both the acquiring and target firms, such as profit ratios, leverage ratios, and growth ratios. In some cases, merger effects in the bidding and target firms are compared with their industry average performance (Healy *et.al.*,

1992 and 1997).

However, accounting data methodology is not as popular as the event study method because only a few researchers employ this method to measure the effect of mergers or acquisitions on shareholder wealth. The reason is that there are some weaknesses in the accounting numbers methodology that will be explained more fully later in this chapter.

Unlike the event studies methodology which mostly uses the announcement date or the announcement month as the starting point to measure the wealth effect of mergers, the accounting methodology uses the outcome date[3] (the outcome date =0) as the benchmark to measure the effect of mergers or acquisitions.

3.3.1. The advantages of accounting numbers

Even though the accounting numbers methodology has some serious problems as a measure of the wealth effect of mergers and acquisitions, this method, however, has an advantage which is not found in the event studies methodology. The main reason given for using accounting numbers to investigate the effect of mergers is that share prices cannot determine the real economic gains after the merger. Furthermore, the researchers on accounting data claim that share prices cannot identify the source of real economic gains obtained by the newly combined firms.

Accounting data has an ability to sort out the real economic gains from mergers and acquisitions (Healy *et.al.*, 1992 and 1997). They argue that the accounting data measure the actual economic benefits of the merging firms following a merger. Additionally, they also say that the accounting performance measurements are able to identify the source of economic gains for the acquiring and acquired firms.

3.3.2. The drawbacks of accounting numbers

Like event studies, the accounting numbers (financial statement analysis) also have some

3 . The outcome date is the date when the real merger takes place or the merger consummation date (Asquith, 1983)

weaknesses as a measure for merger performance.

(a). Longer measurements

As Bishop *et.al*, (1987) show, it can take several years for the financial effects of a merger to enter into the accounting numbers and the analysis of accounting numbers should be examined over a long period of time. This acknowledges that the effects of mergers and acquisitions cannot be identified in a couple of days or even a couple of weeks. There is also a need to take into account the accounting procedures used by both target and bidding firms to consolidate their financial performance after mergers.

(b). Different accounting policies

The accounting method uses different approaches to measure some variables. Dodd (1976) argues that the use of accounting methods to measure abnormal returns is questionable because of the variety of accounting techniques used by different firms. For instance, to measure an inventory, some companies may use different approaches, such as LIFO, FIFO or the average cost method. Furthermore, some companies may employ different approaches in recording their income and expenses whether they use a cash basis or accrual basis. Because of differences in accounting practices employed from one firm to another, the results are also different from one to another. Accordingly, there is a bias of results if the accounting figures from the measurement of abnormal returns is relied upon.

(c). Prone to abuse

There is an opinion in practice that accounting measures of earnings are open to manipulation. Brealey and Myers (1991) support this opinion, because the use of earnings in the reported financial statement is sometimes designed for specific purposes. Healy *et.al.* (1992) also point out that accounting data can be affected by managerial decisions.

(d). No future expectation

Halpern (1983) argues that accounting data provides no information on the expected impacts of mergers and acquisitions on the bidding and target firms in the long run. Accounting figures are historical data which record all activities in the past. They do not reflect the expectation of future profitability of firms. Therefore, accounting-based values neither reflect real asset values nor represent the market value of a firm (Bishop *et.al.*, 1987). Furthermore, Bishop *et.al.* (1987) argue that the accounting data reports a total value for the firm by summing up each individual asset. Although those individual values reflect the market value of the assets, the true market value of the firm as a whole has not been reflected. Additionally, assets recorded in the balance sheet are mostly based on a cost basis, and may not be adjusted for changes according to the market value.

3.4. Empirical evidence on event studies

Event studies use announcement effects as a benchmark for measurement of returns, such as stock splits, dividend announcement, and merger announcements. In the case of mergers, the date of merger announcement can be a benchmark as a starting point for event time. Most studies of mergers and acquisitions which employ the event studies method define merger announcement as event time =0. For example, Eckbo (1983), Allen and Sirmans (1987), Hannan and Wolken (1989), Baradwaj *et.al.* (1992), Davidson III and Cheng (1997), and Chang (1998) use the announcement day of any merger attempt as the event time (t=0 day). Asquith (1983), Dennis and McConnel (1986), Huang and Walkling (1987) employ the day before the announcement and the announcement day of mergers as the event time (t=-1 day and t=0 day).

Meanwhile, Neely (1987) uses the week of the announcement of a merger proposal as the event time (t=0 week). Kummer and Hoffmeister (1978), Asquith and Kim (1982), Agrawal *et.al.* (1992), Brown and Da Silva Rosa (1997), and Gregory (1997) use the announcement month of merger proposals as the event time (t=0 month). However, Cotter and Zenner (1994) use the rumour date of any merger attempt as the benchmark for event study (t =0= rumour day).

Some empirical investigations on mergers and acquisitions using event studies to measure the returns are summarised below.

3.4.1. Mandelker (1974)

The author examines the returns of mergers on shareholders' wealth by using the adjusted market model developed by Fama and Macbeth (1973). Data on company mergers listed on the New York Stock Exchange (NYSE) for the period of November 1941 to August 1962.

The cumulative abnormal returns for the share holders of the acquiring firms are 0.037 % for the period of 40 months before and 40 months after mergers (t=-40 to t =40), and 0.022 % for t=-20 to t =10. The limitation of this study is that it does not measure the cumulative abnormal returns of the acquired firms after mergers. Only the cumulative abnormal returns for the acquired firms for the period of 40 months until one month before mergers (t=-40 to t=1) are measured. Hence, no comparative information regarding the returns for share holders of the acquired firms is provided.

3.4.2. Dodd (1976)

The author investigates the share prices around the dates of takeover offer by using the two parameter model developed by Sharpe (1964) and Lintner (1965), and modified by Black (1972). In a sample of 242 companies in Australia, it was found that the shareholders of the acquiring firms gained abnormal returns prior to the announcement of the offer. This was because these firms experience good performance and had surplus funds that could be maximised in a takeover bid. However, on the other hand, they suffered significant losses after takeover. The shareholders of acquiring firms obtained negative cumulative abnormal returns (CAR) up to - 10.9 % over the 24 months after the announcement of the offer.

This study shows that the returns for shareholders of the acquired firms indicate that they gain positive abnormal returns. The cumulative abnormal returns rise significantly, up to 25 %, in the month of the public announcement. The takeover announcement is good news for the acquired firms since the shareholders expected high compensation for their firm, and the gains received by the shareholder of the acquired firms are at the expense of the

acquiring firms.

The weakness in this study is that it measures the returns for a period of 24 months before and after the announcement of the offer. The 24-month abnormal returns after the announcements are prone to bias because the momentum of a merger occurs around the announcement of the offer, and hence, the expected gains or losses occur during that time. If the abnormal returns are measured over 24 months after the announcements, they can be influenced by other external factors (such as economic situation, international share markets, interest rates) which are less relevant to the measurement of returns as an effect of the announcement of mergers.

3.4.3. Dodd and Ruback (1977)

The authors investigate the returns flowing from stock market reaction to tender offers by employing the market model. The sample data used in this study comes from companies listed on the New York Stock Exchange (NYSE) over the period from 1958 to 1975. The results indicate that the successful acquiring firms earn 11.66 % for the period of t=-12 months to t=1 month which decreases to 2.83 % during the announcement month. Their cumulative abnormal returns fall to - 1.32 % for the period of 12 months after the announcement (t=12 months) , and falls to -4.59 % on 60 months (t =5 years) after the announcement.

On the other hand, the shareholders of the target firms experience positive abnormal returns of 8.79 % for the period of t=-12 to t=1 which increase to 20.58 % during the announcement month. However, their abnormal returns decrease to 7.95 % over the period of t=1 to t=12, falling to -0.98 % at 60 months (t =5 years) after the announcement.

3.4.4. Langetieg (1978)

The author investigates the magnitude of shareholder gains from mergers. To measure the wealth effect to shareholders, he employs a three factor performance index based on Jensen's performance index (1969), Black's zero beta model (1972) and Mandelker's model (1974). Langetieg uses a sample of 149 mergers selected from the New York Stock

Exchange from 1929 to 1969.

Langetieg's results demonstrate that Jensen's index produces similar results to the Black's model, while there are several distinct differences from the Mandelker's model. On average, the bidding firms experience negative returns from six months to one month before the announcement of mergers, and the acquired firms experience positive returns for the same period. However, in the longer term, that is, 70 months after merger, the consolidated firms obtain negative returns.

3.4.5. Dennis and McConnell (1986)

The authors examine the rate of return and dollar value returns for corporate mergers which occurred between 1962 and 1980 in the U.S. by using the mean adjusted returns (Masulis, 1980) and the market adjusted returns. One of the strengths of this paper is that the 20-day measurement of returns before and after the announcement (t=-20 to t=20) generates clear results, indicating that the shareholders of the acquired firms experience statistically significant gains in mergers. It found no evidence that the acquiring shareholders lose, and in some cases, it was found they also earn abnormal returns. The dollar value of both the target and the acquiring firms increase by a statistically significant amount around the date of the merger announcement.

3.4.6. Allen and Sirmans (1987)

The authors investigate the acquiring firm's share price reaction to a merger proposal when the buyers and the sellers are members of the Real Estate Investment Trusts (REIT) in the U.S. over the period from 1977 to 1983. The standard event-time methodology developed by Fama (1976) is used. The value impact is measured by using the mean adjusted returns method outlined in Masulis (1980). The results indicate that the announcement day abnormal returns is 1.46 % for the shareholder of the acquiring firms, and the two-day cumulative returns are 10.34 % (t=-40 days to t=40 days). This finding is not consistent with previous studies in which the shareholder of acquiring firms normally earn insignificant abnormal returns after the announcement day (see for example : Mandelker, 1974; Dodd, 1976).

One of the strengths of Allen and Sirmans' study is that it measures the returns for shareholders on a short term basis (40 days before and after the announcement), and hence, it provides a clear result of the returns for the share holders surrounding the announcement of mergers.

3.4.7. Bradley, Desai and Kim (1988)

The authors investigate a successful tender offer for both the target and acquiring firms, using a sample of 921 firms listed on the New York Stock Exchange (NYSE) and the American Stock Exchange (AMEX) over the period 1963 to 1984. The methodology employed is based on the market model developed by Fama (1976) which estimates the abnormal returns of the target and acquiring firms.

The study finds that the cumulative abnormal return for target firms is 31.28 % commencing 20 days before the merger announcement and ending 80 days after the announcement (t=-20 to t=80). On the other hand, the acquiring firms experience cumulative abnormal returns of 1.62 % (t =-20 to t=80). Hence, the study shows that an acquisition by tender offer is a wealth-increasing event for the shareholders of the acquired firms. Furthermore, the study reveals that there are synergistic gains for the new combined firms. The value of the combined firms increases, on average, by 7.43 % for the same period, and the mean per firm total dollar gain created in the mergers is $ 117 million for the 921 firms. One essential question from this study is that it does not explain why the total days for measuring the returns before and after the announcement are different.

3.4.8. Franks and Harris (1989)

The authors examine shareholder wealth effect of corporate mergers for 1,800 companies in the U.K. from 1955 to 1985. Both the market model and Capital Asset Pricing Model (CAPM) are used to assess the effect of mergers on share prices.

The study finds that for the announcement month, shareholders of the target firms gain 23.3 % in abnormal returns while the shareholders of the acquiring firms earn 1.0% abnormal returns. In addition, the shareholders of the target firms experience 29.7%

abnormal returns for the period from 4 months before the announcement until 1 month after the announcement (t=-4 to t=1), while the shareholders of the acquiring firms gain 7.9% abnormal returns for the same period of time.

3.4.9. Baradwaj, Dubofsky and Fraser (1992)

The authors examine the bidder returns in interstate and intrastate bank acquisitions. The study uses a sample of 108 bank acquisitions in the U.S. for the years from 1981 to 1987. Employing a market model, the returns from t=-5 days to t =5 days are measured.

The results show that bank acquisitions generate negative abnormal returns for the bidding firms. In the intrastate acquisitions, the bidding banks experience negative abnormal returns of -0.021%, while in the interstate acquisitions the bidding banks experience negative abnormal returns of -0.036%. For the entire sample, the bidding firms obtain negative abnormal returns of -0.026 %. However, this study does not investigate the returns for the acquired banks nor whether they gain positive or negative abnormal returns.

3.4.10. Zhang (1995)

The author examines the wealth gains from 107 U.S. bank takeovers over the period from 1980 to 1990 period. The wealth gains from takeovers are estimated using the market model over the period from 5 days before the announcement to 5 days after the announcement (t=-5 to t=5).

The results indicate that bank takeovers create wealth which is statistically and economically significant. The average cumulative abnormal returns are 6.9 % for the target shareholders and 0.39 % for the bidding shareholders. Furthermore, the result shows that efficiency gains tend to occur in relatively small takeovers and gains from geographic diversification tend to occur in relatively large takeovers.

3.4.11. Sudarsanam, Holl and Salami (1996)

The authors investigate the impact of synergy between bidders and target in the United

Kingdom. The study uses a standard market model and takes a sample of 429 acquisitions during the period from 1980 to 1990. The wealth effect is estimated for the period from 20 days before the merger announcement until 40 days after the merger announcement (t=-20 to t=40).

The findings indicate that the shareholders of acquiring firms experience a negative abnormal return of -1.26% on the announcement day (t =0) while the target shareholders experience a positive abnormal return of 13.96%. Furthermore, over the period of t=-20 to t=40 days, the target shareholder enjoys a higher abnormal return of 29.18% and the shareholders of bidding firms suffer an abnormal loss of -4.04%.

3.4.12. Grullon, Michaely and Swary (1997)

The authors examine mergers and acquisitions in the US banking sector and the shareholder returns around the announcement day. A standard market model is used with a sample of 146 bank mergers during the period from 1981 to 1990. The abnormal return is measured over the period from one day before the merger announcement until one day after the merger announcement (t=-1 to t=1).

The findings show that the target shareholders gain a high and positive abnormal return of 9.82% during that period and the shareholders of bidding firms obtain a negative abnormal return of -1.93%. However, if the medium of payment is cash for the merger and acquisition transactions, both the acquiring and target shareholders gain better abnormal returns than for a stock payment.

3.5. Empirical evidence on accounting numbers

Empirical evidence based on the event study technique as a measure of the wealth effect of mergers and acquisitions to the shareholders of target and bidding firms has been discussed above. It is also important to discuss the empirical evidence based on financial statements or accounting numbers. The financial statement approach involves analysis and comparison of some accounting figures before and after mergers for both the acquiring and target firms or for the new combined firms.

Mueller (1980) defines some of the determinants used to measure the effect of mergers and acquisitions based on accounting data. These include a size variable which is measured by sales, the book value of the total assets and the book value of the net asset; profitability which is measured by the rate of return on equity, the rate of return on net assets and profits to sales ratio; growth variable which is measured by the growth rate of net assets or sales and leverage which is measured by the debt to equity ratio. Furthermore, Meeks and Meeks (1981) also provide a theoretical framework for the accounting based model to measure the efficiency of mergers and acquisitions for the merging firms.

Unlike the event studies which measure the returns on mergers and acquisitions on a daily, weekly or monthly basis, the measurement of abnormal returns using the accounting data uses a yearly basis. It is hence unlikely that the accounting data, which is based on daily or monthly will show the effect of mergers and acquisitions in the months before or after such a merger or acquisition because such effects take several years for the outcome to become apparent in accounting data (Bishop *et.al.*, 1987). Most studies based on accounting numbers measure the effect of mergers on the merging firms over a long period of time, for example, Healy *et.al.* (1992 and 1997) measure 5 years before and after the merger, Cornett and Tehranian (1992) use a three-year measurement.

Summarised below are five empirical investigations of mergers using accounting methods to measure the returns.

3.5.1. McDougall and Round (1986)

The authors investigate the effect of mergers using accounting data from 88 mergers in Australia over the period from 1970 to 1981 examining whether reported earnings, assets, and other variables respond positively after mergers and acquisitions. Results show that acquiring firms in horizontal mergers are more profitable than acquired firms. In addition, after mergers, the profitability of the merged firms decreases compared with previous conditions before mergers.

3.5.2. Ravenscraft and Scherer (1989)

The authors investigate the profitability of mergers for 2,732 lines of businesses operated by U.S. manufacturing corporations over the period from 1957 to 1977 using a regression model to examine how profitability varies with merger intensity and accounting method. The results indicate that the acquired firms experience profits before the merger, the greater their size, the more profitable they are. It was demonstrated that the acquired firm's performance declines as an effect of the merger. Seven or eight years after the mergers take place, the acquired firms' profitability decreases sharply relative to their pre merger levels.

3.5.3. Cosh, Hughes, Lee and Singh (1989)

The authors investigate the effect of mergers in the U.K. by using two samples over the period from 1981 to 1983 and 1986. Accounting numbers are employed as a measure of the profitability of the mergers, that is, the percentage pretax return on average net assets over the period from 3 years before to 3 years after mergers occur (t=-3 to t=+3). The results demonstrate that the profitability of mergers after year 1 to year 3 (t=+1 to t=+3) becomes lower than the profit before mergers. The change to profitability has worsened over the post merger period, and it consequently decreases the shareholder returns.

3.5.4. Cornett and Tehranian (1992)

The authors investigate the post acquisition performance of large bank mergers. They use a sample of 15 interstate and 15 intrastate bank acquisitions in the U.S over the period from 1982 to 1987. To measure the post merger performance, they employ an accounting methodology which tests the operating cash flow of the merging firms over three year before and after the merger (t=-3 to t=+3 years). They also compare the individual merging bank performance with its industry average.

Furthermore, they identified seven determinants as the source of the post merger improvements in cash flow performance, that is, profitability, capital adequacy, credit quality, efficiency, liquidity risk, growth and interest rate risk. These indicators are very specific because all of the data sample is banking firms, and henceforth, the measurement of

returns is unique for the banking industry.

The results demonstrate that during a three to one year pre merger period (t =-3 to t=-1), the mean annual operating cash flow is 2% and the industry adjusted mean is - 0.2%. In the period from one to three years after the merger (t =1 to t=3), the mean annual operating cash flow is 2.6 % which is larger than the pre merger period, and the industry adjusted mean is 1%. This finding indicates that the merged banks outperform the banking industry as a whole.

3.5.5. Healy, Palepu and Ruback (1992 and 1997)

The authors examine post acquisition performance for the 50 largest U.S. mergers that occurred between 1979 and 1984. They investigate the post merger cash flow performance of acquiring and acquired firms, and also explore the sources of merger-induced change in cash flow performance. In this study, they employ pre-tax operating cash flow returns on assets to measure improvements in the firms' operating performance.

The results show that during the 5 years before mergers (t =-5 to t=-1), the firms' median operating cash flow return varies between 24.5 % and 26.8%, and the average median is 25.3%. The median annual performance 5 years (t=+1 to t=+5) after a merger shows different results varying from 18.4% to 22.9% with the average median performance of 20.5%. This result demonstrates that cash flows tend to decrease after mergers, especially from year 3 to year 5 (t =+3 to t=+5) during which cash flows decline slightly every year. However, the post merger operating cash flow of the merged firms improves relative to their industries' performance.

3.6. Summary

Measuring the wealth effects or shareholder returns from mergers and acquisitions can be done by two major approaches, that is, event study method and accounting method. The former uses the changes in share prices before and after merger as the benchmark for measuring the returns. The latter uses accounting numbers such as profit ratios and leverage ratios before and after merger to measure the wealth effects for shareholders. The

event study method is a market based approach (predicted) whilst the accounting method is a firm based approach (actual). Both methods have their own advantages and drawbacks, however, the most popular and best available one at this time is the event study method. This method is more reliable in detecting and measuring any abnormal return for shareholders' wealth as a result of mergers and acquisitions.

The empirical evidence on event studies demonstrates that most of the shareholders of target firms experience large gains from mergers and acquisitions, and the shareholders of bidding firms display a break even or little gain effect, and in some cases they experience negative abnormal returns. The empirical results from the studies of mergers and acquisition which employed accounting methods indicate that most of the acquired and acquiring firms suffer losses in the long term. Gains from mergers and acquisitions tend to occur in short term only.

Part Two

Methodology

Chapter 4

Methodology

4.1. Introduction

In the last two chapters the literature regarding mergers and acquisitions, including the measurement of abnormal returns and the empirical evidence demonstrating effects on shareholder value of bidding and target firms has been presented. As a result of this review, it is has been demonstrated that the event study method is the better instrument for measuring abnormal returns.

This chapter will discuss the methodology applied in this research, including the research model, and the data.

4.2. The research model

4.2.1. Event studies method

The proposed method for use in this study on which to model the returns for shareholders of target and bidding firms is the event studies methodology, because it is arguably the best available instrument for measuring the abnormal returns to date. This method is able to detect any capital gains for the shareholders directly and instantaneously as a result of mergers and acquisitions. Any change in share prices reflects expectations regarding future cash flows which are absorbed into the current price. This is not the case with the accounting method which relies on historical data for measurement. Thus, in view of the specific objectives of the present study, the event time approach is chosen in preference to the accounting numbers method.

4.2.2. Event time

The event time (t) is defined as the day of the announcement of merger offers made by the bidding or acquiring firms. Hence, the announcement day is considered as **" day 0"** or t=0. Furthermore, the day when the results of mergers and acquisitions are known (whether this is at more than 50% or less than 50%) is also considered as **"day 0"** or t =0.

The event time t=0 is the day on which the share prices of the acquiring and target firms fluctuate to follow the new information as a result of a merger announcement or an outcome announcement. Because the share prices have reacted to this new information,these ultimately affect the return of the bidding and target shares. Therefore, the announcement day (t=0) is the best starting point from which to measure the abnormal return of mergers and acquisitions.

4.2.3. Event window

Whilst most of the studies of mergers and acquisitions use the event studies method, there remains an issue to be addressed relating to the results of these studies. Most of them measure the returns over a long period of time, sometimes out to five years, making them prone to bias due to external factors beyond the control of the merging firms.

If a long term measurement is used, the size of the participating firms must be controlled (Gregory, 1997). Failure to control the size effect produces a biased result because size effect emerges on the long term measurement (Dimson and Marsh, 1986; Brown and Da Silva Rosa, 1997; Gregory, 1997). Some recent studies (for example, Ran and Vermaelen, 1998; Fama, 1998) stress that long term measurements tend to generate some anomalies because size effects and the model used for computing abnormal returns are sensitive to long term measurements. This implies that the shorter the period of measurement, the better the results, because bias is minimised and the merger effect on share prices surrounding the announcement of merger proposals and also surrounding the announcement of merger outcomes is maximised.

The event window is the duration for measuring the effect of the announcement of mergers and acquisitions on share prices and abnormal returns. The length of the event window in this study is from 10 days prior to the announcement of mergers and acquisitions to 10 days after the announcement of mergers and acquisitions. This study also measures the share prices and abnormal returns after merger outcomes are known (whether this is at more than 50% or less than 50%). For this purpose, we use a period of measurement of 10 days after the merger outcome is announced publicly.

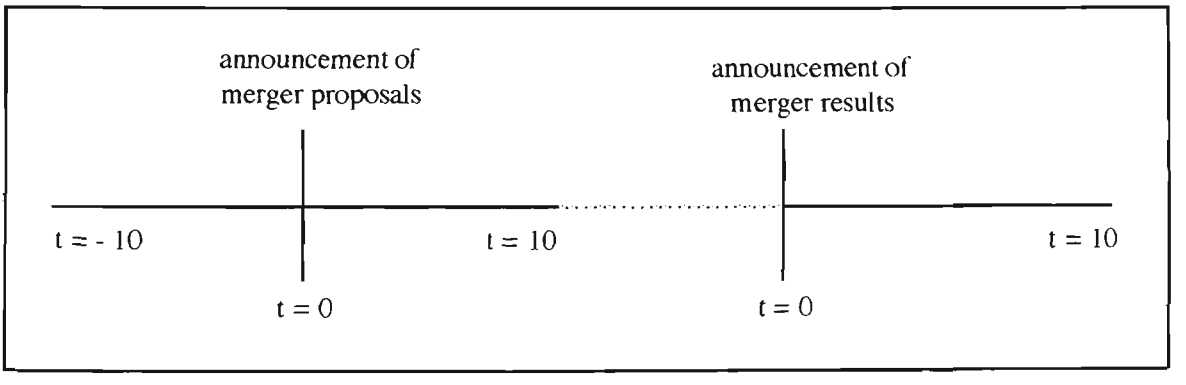
4.2.3.1. The length of event windows

The length of an event window can be written as :

t = -10, for the measurement of share prices and abnormal returns 10 days prior to the announcement of mergers and acquisitions, and

t = 10, for the measurement of share prices and abnormal returns 10 days after the announcement of mergers and acquisitions.

t = 10, for the measurement of share prices and abnormal returns 10 days after the outcome of mergers and acquisitions is known (whether this is at more than 50% or less than 50%).



4.2.3.2. The reason for choosing a 10 day measurement.

The reasons for choosing a 10 day measurement before and a 10 day measurement after the announcement is as follows :

(a). The 10 day measurement before the announcement is important in order to detect any price movement as a result of any rumours of merger proposals. In some previous studies the share prices were influenced by the rumour of a merger proposal before the announcement took place (Halpern, 1973; Franks *et al.*, 1977).

(b). The 10 day measurement after the announcement is important in order to measure the abnormal return of mergers, and on average the wealth effects for the shareholders of target and bidding firms mostly occur at around 10 days after the announcement (Comment and Schwert, 1995).

(c). The selection of the duration of an event window for returns whether it is 5 days, 30 days, 6 months, 12 months, etc, in most of the studies, is somewhat arbitrary (Ravenscraft, 1987).

(d). The shorter the length of the event window, the better the results because it has been proven empirically that a short term period for event windows will capture all important and significant effects of the announcement of mergers and acquisitions (Ryngaert and Netter, 1990; McWilliams and Siegel, 1997).

(e). If a longer event window is taken, greater confounding effects are potentially created which ultimately influence abnormal returns. In fact, it is very difficult to take into account any other momenta, such as profit/loss announcement, management changes, statutory changes, that happen during the event window. These momenta directly affect the share prices of the merging firms. Therefore, to avoid this effect we need to make the event window as short as possible (McWilliams and Siegel, 1997).

4.2.4. The study models

There are two models that will be applied in this research, the market model and the market adjusted model.

4.2.4.1. The market model

The market model employed in this study is based on the model developed by Fama (1976) with the assumption that abnormal returns for share prices occur according to multi variate normal distribution (Fama, 1976; Dodd and Ruback, 1977; Brown and Warner, 1980 and 1985; Bradley *et al.*, 1983; Bowman, 1983). The market model is very popular among the methods employed to measure the abnormal returns on mergers and acquisitions. The standard approach of this model is based on estimating a market model for individual firm, then calculating the abnormal returns (McWilliams and Siegel, 1997).

Share price performance from the event t=-10 to t=10 days will be used to estimate the parameters of the market model, and the rate of return on the share price of firm *i* on day *t* is expressed as :

$$R_{dit} = \partial_i + ß_i R_{mit} + e \qquad (1)$$

$$t = -10 , \ldots , +10 \text{ days}$$

where :

R_{dit} = daily share return for firm *i* in day *t*

∂_i = the intercept term

$ß_i$ = the systematic risk of share *i*

R_{mit} = rate of return on a market index in day *t* relative to the announcement of offer *i*

e = residual term

The daily share return, R_{dit}, can be calculated from the formula :

$$R_{dit} = \frac{(P_{it} - P_{i\,t-1}) + d_{it}}{P_{i\,t-1}} \qquad (2)$$

$$t = -10, \ldots, +10 \text{ days}$$

where :

P_{it} = price per share of common stock of firm *i* at the end of day *t*

$P_{i\,t-1}$ = price per share of common stock of firm *i* at the end of day *t-1*

d_{it} = dividend per share of the common stock of firm *i* from the end of day *t-1* to the end of day *t*.

d_{it} is also called dividend yield which comes from :

$$d_{it} = \frac{\text{dividend per share}}{\text{share price at the end of day } t} \qquad (3)$$

Market Return, R_{mit}, can be calculated from the formula :

$$R_{mit} = \frac{MI_{it} - MI_{it-1}}{MI_{i\,t-1}} \qquad (4)$$

$$t = -10, \ldots, +10 \text{ days}$$

where :

MI_{it} = stock market index at the end of day *t*

$MI_{i\,t-1}$ = stock market index at the end of day *t-1*

The abnormal returns for firm i in day t, AR_{dit}, based on the market model can be defined as :

$$AR_{dit} = R_{dit} - \partial_i - \beta_i R_{mit} \qquad (5)$$

$$t = -10, \ldots, +10 \text{ days}$$

where ∂_i and β_i for individual firm are calculated daily by using the equation (1) from the event t=-10 to t=10 days.

The cumulative abnormal return, CAR_i, for the bidders and the target firms for the period of $t = -10$ to $t = 10$ can be defined as :

$$CAR_i = \sum_{t=-10}^{10} AR_{dit} \qquad (6)$$

A simple rate of return will be employed instead of compounded rates of return to calculate the cumulative abnormal return. From the perspective of investing in then stock market, simple rates of return will make more sense. In addition, a vast majority of the previous studies have employed simple rates of return. Had the present study used compound rates of return, the results would not be comparable (Zhang 1995; Baradwaj *et. al.*, 1992; Bishop, Dodd and Officer, 1987; Dennis and McConnel, 1986).

4.2.4.2. The market adjusted model

The market adjusted model employed in this study is the model implemented by Brown and Warner (1980, 1985) with the assumption that returns are equal across shares, but that they are not necessarily constant for a particular share. This model takes into account market

returns which occur at the same time that the firms experienced, and the variable of interest is the *difference* between the abnormal return of a sample firm and the corresponding return on the market index (Brown and Warner, 1980). Because the market adjusted model is practically simpler than the market model, it is widely used as a comparison for the market model for some research on event studies.

The equations (2) and (4) can be used to find out the values of individual share return (R_{dit}) and the market return (R_{mit}) for the market adjusted model which can be defined as :

$$AR_{dit} = R_{dit} - R_{mit} \qquad (7)$$

$$t = -10, \ldots, +10 \text{ days}$$

The cumulative abnormal return, CAR_i, for the bidders and the target firms for the period from t =-10 to t=10 for the market adjusted model is the same as the equation (6), that is,

$$CAR_i = \sum_{t=-10}^{10} AR_{dit} \qquad (6)$$

The use of the market model and the market adjusted model is the best method to measure the abnormal returns for the shareholders of bidding and target firms as outlined in the objectives of this study. Both models are designed to measure the effect of an unanticipated event on share prices, that is, the announcement of mergers and acquisitions, and hence the models are a relevant approach by which to meet the objectives of this study.

4.3. Data

4.3.1. Sources of data

The data for mergers and acquisitions is taken from the Australian Stock Exchange which consists of

- Weekly Summary Report which contain merger and acquisition offers
- All Ordinaries Index for daily market return
- Dividend announcements which are extracted from Weekly Summary Report
- Individual Company Reports which contain daily share price history.

4.3.2. Data characteristics

There are several characteristics of the data taken from these reports.

(a). Both the bidding firms and target firms are public companies listed on the Australian Stock Exchange.

(b). There is only a single bid for the target firms during the period of measurement. Previous studies have shown that capital gains are larger in multiple bidder acquisitions (Jarrel and Poulsen, 1988; Bradley et al, 1988). Accordingly, this study limits the data to the target firms who received one offer only for the period from 10 days prior to the announcement until 10 days after the announcement of mergers and acquisitions. In addition, this rule is also valid for the measurement of returns after the results of mergers and acquisitions are known.

(c). The size of bidding firms and target firms is not taken into account in the data sample because it has no effect on short term measurement. Firm size is a crucial factor and must be controlled when measuring long term returns (Dimson and Marsh, 1986; Agrawal *et al.*, 1992).

(d). All the measurements of shareholder returns in the data is limited to acquisitions for

ordinary or common shares only.

(e). The data for mergers and acquisitions refers to Part A Offers or The Formal Takeover Offer specified in Section 616 of the Corporations Law. In this scheme, the acquiring firms must make an "*announcement* " or a "*formal bid* " of an intention to make a takeover offer. Thus, the sample of data for this research does not take into account other types of mergers and acquisitions such as Creeping Takeovers (Section 618) and Part C Offer or On-Market Takeover (Section 617).

4.3.3. Data sample

The initial data we have collected is for 326 mergers and acquisitions in Australia from 1993 to 1997 which involved 267 acquiring firms and 293 acquired firms that matched the above requirements (point 4.3.2. Data characteristics). However, not all of these firms had complete data regarding their share price history, some of them were already delisted from the Stock Exchange and some had changed their names making further investigation difficult. After eliminating these, 214 mergers and acquisitions remained, consisting of 117 acquiring firms and 112 acquired firms.

Finally, the actual sample taken from the available data is 167 mergers and acquisitions which consist of 81 acquiring firms and 90 acquired firms (see Table 4.1). These firms come from various industries, such as mining, manufacturing, retailing, services, and so on. The final sample is smaller because some multiple biddings were omitted, and additionally, some of mergers and acquisitions could not be detected whether the mergers had been finished and the results were already known. From 81 acquiring firms in the final sample consists of 44 firms who acquired more than 50% of target shares and 37 firms who acquired less than 50% of target shares. The 90 target firms consist of 48 firms where more than 50% was acquired and 42 firms where less than 50% was acquired (see Table 4.2).

Table 4.1. Total sample of mergers and acquisitions
(1993 - 1997)

Data	Mergers	Bidder	Target
Initial	326	267	293
Preliminary	214	117	112
Final	167	81	90

Table 4.2. Composition of the sample
(1993 - 1997)

Firms	>50%	<50%	Total
Bidding	44	37	81
Target	48	42	90
Total	92	79	171

4.4. Summary

This study has one general and two specific objectives. The general objective is to model the abnormal returns for shareholders of bidding and target firms. The first specific objective is to model shareholders' abnormal returns of bidding and target firms from 10 days prior to, until 10 days after, the announcement of merger offers. The second specific objective is to model shareholders' returns 10 days after the announcement of merger outcomes. By modelling abnormal returns under these various conditions, the Hubris hypothesis will be

tested whether it remains valid under these conditions.

This study employs the event study method because it obviates the necessity to analyse the accounting based measures of profit which are not good indicators of the true performance of firms (McWilliams and Siegel, 1997). Also Benston (1982) points out that accounting profits can be manipulated by managers because they are able to choose accounting procedures. On the other hand, share prices are very difficult, if not almost impossible, to manipulate, unless there is insider trading which is illegal and prohibited by regulations. The use of the event study methodology based on share price changes is expected to reflect the 'true value' of firms because share prices are assumed to reflect the discounted value of all future cash flows and to incorporate all relevant information (McWilliams and Siegel, 1997). Therefore the event study method is the most suitable approach for achieving the objectives of this study.

The applied model used to measure the abnormal returns is based on the event studies methodology, that is, the market model and the market adjusted model. The market model is the most common and popular model used for measuring abnormal returns because it is reliable and simple. The use of the market adjusted model in this study is to compare the findings of market model with the market adjusted model to ascertain whether there are significant differences.

The data used for this research comes from the Australian public listed companies. The sample consists of mergers and acquisitions based on the Formal Takeover Offer (which is set out at section 616 of the Australian Corporation Law) from various industries that occurred between 1993 - 1997.

Part Three

Data Analysis and Empirical Findings

Chapter 5

The Regression Estimates and Statistical Tests

5.1. Introduction

This chapter presents the regression results of the security market lines and their statistical tests. Recall that this is the equation (1) discussed earlier in Chapter 4. This equation is expressed as :

$$R_{dit} = \partial_i + ß_i R_{mit} + e \qquad (1)$$

The individual firm return (R_{dit}) and market return (R_{mit}) are regressed to generate individual firm risk ($ß_i$) and market risk (∂_i). There are 171 regressions in total which consist of 81 regressions for bidding firms and 90 regressions for target firms. The results are given below :

5.2. Bidding firms

The individual firm risk ($ß_i$), market risk (∂_i) and their statistical tests for all bidding firms are summarised below.

Firm Code	∂	ß	R Square	Significance F
ARL (1)	0.0042	0.4279	0.0554	0.3045
	(0.0035)	(0.5538)		
ARL (2)	0.0066	0.2552	0.0801	0.2138
	(0.0051)	(0.8439)		
BHP	0.0002	1.4326	0.8126	2.45E-08
	(0.0011)	(0.1563)		
BIL (1)	0.0024	1.1660	0.4335	0.0012
	(0.0021)	(0.2291)		
BIL (2)	0.0016	0.3220	0.0199	0.5422
	(0.0035)	(0.3657)		

BPT (1)	0.0045	-0.8041	0.0076	0.7068
	(0.0176)	(2.1061)		
BPT (2)	0.0212	0.3176	0.0261	0.4846
	(0.0165)	(1.9077)		
EDI (1)	-0.0018	0.0011	9.65E-08	0.9999
	(0.0048)	(0.7875)		
EDI (2)	0.00895	0.3281	0.0185	0.5569
	(0.0024)	(0.4524)		
AAA	0.0005	1.2251	0.1938	0.0458
	(0.0063)	(0.5722)		
AAD	0.0050	0.7336	0.0900	0.1863
	(0.0051)	(0.7494)		
AHD	-0.0001	0.5289	0.1861	0.0509
	(0.5164)	(0.2478)		
ANI	-0.0030	1.4628	0.2387	0.0246
	(0.0043)	(0.7043)		
ARS	-0.0021	1.3601	0.1052	0.1514
	(0.0077)	(0.9099)		
ASH	-0.0029	0.5215	0.0504	0.3278
	(0.0040)	(0.4884)		
AVR	0.0088	2.0625	0.0189	0.5517
	(0.0426)	(4.5949)		
AXI	0.0020	-0.1104	0.0243	0.4995
	(0.0030)	(0.6201)		
BCD	-0.0014	1.3562	0.0218	0.5234
	(0.0070)	(1.2597)		
BOR	0.0052	1.1672	0.1856	0.0512
	(0.0037)	(0.5147)		
BRL	0.0029	0.1617	0.0052	0.7562
	(0.0024)	(0.5135)		
BTA	-0.0001	0.3377	0.0005	0.9232
	(0.0042)	(0.6237)		
BUR	0.0097	0.3633	0.0082	0.9016
	(0.0031)	(0.2772)		
CAE	0.0062	1.8251	0.0537	0.3122
	(0.0127)	2.0508)		
CEY	0.0027	0.7094	0.0192	0.5495
	(0.0083)	(1.2667)		
CGL	-0.0007	1.1916	0.1329	0.1042
	(0.0084)	(0.7861)		
DAR	0.0017	0.8714	0.2948	0.0109
	(0.0057)	(0.5332)		
DVD	0.0039	0.7274	0.0296	0.4773
	(0.0055)	(1.0056)		
FBG (1)	-0.0002	0.8499	0.2158	0.3388
	(0.0023)	(0.3852)		
FBG (2)	-0.0002	0.7622	0.0071	0.0717
	(0.0014)	(0.2771)		
FBG (3)	0.0005	0.9946	0.1914	0.0473
	(0.0026)	(0.4890)		
GCM (1)	-0.0052	0.5533	0.2357	0.0257
	(0.0277)	(0.2499)		
GCM (2)	-0.0035	0.5396	0.3218	0.2110
	(0.0525)	(0.2973)		
GMA (1)	-0.0024	1.9553	0.1729	0.0608
	(0.0061)	(0.9812)		

GMA (2)	-0.0052	1.6298	0.1849	0.0517
	(0.0119)	(1.7537)		
HNG (1)	-0.0001	0.6113	0.0362	0.4090
	(0.0048)	(0.6851)		
HNG (2)	0.0054	0.5243	0.0559	0.3023
	(0.0064)	(0.4606)		
EMN	-0.0010	0.1845	0.0380	0.3969
	(0.0065)	(0.8947)		
FCL	-0.0007	1.7540	0.4135	0.0017
	(0.0049)	(0.5484)		
FIG	0.0054	1.1514	0.0232	0.5094
	(0.0108)	(1.2355)		
GKL	-0.0011	1.9562	0.5011	0.0003
	(0.0049)	(0.4478)		
GSP	0.0015	0.6531	0.0619	0.2768
	(0.0054)	(0.8289)		
GUD	-0.0025	0.0092	0.0015	0.0868
	(0.0369)	(0.5984)		
GWT	-0.0024	0.0453	0.0095	0.6745
	(0.0032)	(0.4424)		
HAO	0.0060	0.4160	0.0015	0.8672
	(0.0184)	(3.3881)		
HIL	0.0056	0.9737	0.1224	0.1200
	(0.0042)	(0.7867)		
HMC	-0.0084	1.9928	0.1039	0.1542
	(0.0088)	(1.3429)		
IAM	-0.0006	-0.1276	0.0044	0.7739
	(0.0030)	(0.4379)		
IHG	0.0051	0.3753	0.0209	0.5319
	(0.0055)	(1.3309)		
IHN	-0.0004	0.4087	0.0095	0.6738
	(0.0042)	(0.5867)		
KYD	-0.0106	1.6878	0.0283	0.4659
	(0.0208)	(3.1019)		
LEV	-0.0091	0.6908	0.1315	0.1062
	(0.0038)	(0.5991)		
LLR	0.0022	1.9736	0.0009	0.8939
	(0.010)	(1.5497)		
MEX	-0.0009	0.3545	0.0001	0.9632
	(0.0092)	(0.8323)		
PDG (1)	-0.0045	-0.9384	0.1029	0.7416
	(0.0022)	(0.1491)		
PDG (2)	-0.0062	-0.2596	0.0239	0.5039
	(0.0069)	(0.7988)		
RSG (1)	0.0042	1.3856	0.0395	0.3873
	(0.0091)	(1.5359)		
RSG (2)	0.0072	0.7132	0.0004	0.9311
	(0.0052)	(0.6197)		
SGW (1)	0.0046	0.5586	0.0227	0.5139
	(0.0043)	(0.6558)		
SGW (2)	-0.0014	0.5782	0.1109	0.1402
	(0.0034)	(0.4335)		
NDY	-0.0011	1.4945	0.0285	0.4644
	(0.0399)	(0.7068)		
NPC	0.0084	1.3235	0.1197	0.1244
	(0.0204)	(2.3449)		
OTR	-0.0017	1.4154	0.2478	0.0217

	(0.0080)	(0.6039)		
PBB	0.0056	0.9157	0.0971	0.1692
	(0.0035)	(0.5968)		
PIG	-0.0014	-0.5201	0.0157	0.5883
	(0.0064)	(1.1345)		
PLU	0.0018	1.9020	0.2479	0.0216
	(0.0053)	(0.8587)		
QUF	0.0013	0.4052	0.0112	0.6485
	(0.0045)	(0.7173)		
RGC	-0.0022	0.1648	0.0027	0.8225
	(0.0019)	(0.3162)		
RIC	0.0024	1.1740	0.0016	0.8616
	(0.0033)	(0.5426)		
SBM	-0.0069	0.0925	0.0008	0.9052
	(0.0061)	(0.7742)		
SFC	-0.0023	0.0368	0.0429	0.3676
	(0.0046)	(0.3127)		
SRI	-0.0044	0.8663	0.1771	0.0574
	(0.0078)	(0.8279)		
SRP	-0.0024	1.9014	0.2845	0.0128
	(0.0035)	(0.5948)		
SWS	0.0053	0.8169	0.1219	0.1209
	(0.0051)	(0.8184)		
TIR	-0.0013	0.8397	0.0222	0.5198
	(0.0124)	(1.7157)		
TNY	0.0008	-0.3369	0.0024	0.8323
	(0.1321)	(1.5698)		
VRL	0.00581	0.4332	0.0092	0.6793
	(0.0057)	(0.7215)		
WES	-0.0004	0.6671	0.0009	0.8982
	(0.0015)	(0.1995)		
WGR	0.0009	-2.6498	0.0858	0.1976
	(0.0118)	(1.9848)		
WLH	0.0169	-0.6449	0.0226	0.5159
	(0.0160)	(2.4603)		
WOW	0.0005	-0.7903	0.0079	0.7025
	(0.0097)	(1.7869)		
XEN	-0.0072	1.3790	0.0228	0.5137
	(0.0156)	(2.0719)		

The individual risk of bidding firms varies from -2.6498 to 2.0625 and the average risk is 0.6887. Thus on the average the firm level returns are less volatile than that of the market. There are 27 firms (33%) whose individual risks are more than 100% and 10 firms (12%) who have negative individual risks. If we classify the individual risks of bidding firms into a risk of more than 50% and a risk of less than 50%, there are 29 firms (36%) whose individual risks are below 50% and 52 firms (64%) who have individual risks of more than 50%.

The market risks vary between -0.0106 to 0. 0212 which are very low compared with the

individual risks. From 81 equations, there are 79 intercepts (98%) who have market risks of less than 1% and only 2 (2%) whose market risks are more than 1%. The R-squares range between 0.0001 and 0.8126, and the significance of the F-statistics varies between 0.0003 and 0.9999. More than 25% of the regressions are significant at least at the 10% level. This compares well with other reported results.

5.3. Target firms

The individual firm risk ($ß_i$), market risk (∂_i) and their statistical tests for all target firms are summarised below.

Firm Code	∂	ß	R Square	Significance F
AQC (1)	0.0051	-0.8758	0.0605	0.2825
	(0.0067)	(0.8318)		
AQC (2)	0.0074	-1.4717	0.2566	0.0191
	(0.0056)	(0.7162)		
ADE	0.0104	0.4775	0.0688	0.2507
	(0.1299)	(1.5635)		
ADY	0.0115	-0.8461	0.0495	0.3322
	(0.0087)	(0.8503)		
AHC	0.0057	0.1136	0.0148	0.5989
	(0.0132)	(0.9815)		
AHG	0.0069	0.0490	0.0739	0.2334
	(0.0101)	(2.1340)		
ALX	0.0085	0.2737	0.0057	0.7457
	(0.0216)	(3.7537)		
ANS	0.0089	0.5035	0.1381	0.0972
	(0.0046)	(0.3629)		
ARK	0.0050	1.1998	0.0240	0.5022
	(0.0111)	(1.1587)		
AUE	0.0028	0.0074	7.02E-06	0.9909
	(0.0034)	(0.4486)		
AVG	0.0044	1.1185	0.2448	0.0226
	(0.0034)	(0.5908)		
AVL	0.00161	2.0701	0.0947	0.1748
	(0.0137)	(1.4686)		
AZO	0.0023	0.3134	0.0748	0.2301
	(0.0024)	(0.4160)		
BAB	0.0011	0.1680	0.0399	0.3851
	(0.0019)	(0.2639)		
BCR (1)	0.0089	1.3896	0.2032	0.0403
	(0.0112)	(0.6801)		
BCR (2)	0.0111	0.5281	0.0399	0.3851
	(0.0102)	(0.8734)		
BUR	0.0045	0.5010	0.0545	0.3084
	(0.0102)	(1.3390)		

CDA	0.0021	-0.8394	0.0176	0.5658
	(0.0151)	(1.8204)		
CKC	0.0101	-0.2600	0.0083	0.6944
	(0.0147)	(0.9855)		
CLD	0.0052	0.3240	0.0055	0.7501
	(0.0067)	(0.9855)		
CLY	0.0088	2.3857	0.3644	0.0037
	(0.0051)	(0.8463)		
CMB	0.0084	-1.2329	0.0179	0.5628
	(0.016)	(2.0937)		
CNC	0.0037	0.6131	0.0288	0.4615
	(0.0069)	(0.8157)		
CPH	0.0157	1.8605	0.3117	0.0085
	(0.010)	(0.9566)		
CPV (1)	0.0111	-0.3492	0.0147	0.6003
	(0.0104)	(1.2662)		
CPV (2)	0.0104	0.4775	0.0348	0.4184
	(0.0093)	(0.5773)		
CTY	0.0118	0.9833	0.0038	0.7909
	(0.0168)	(3.1081)		
CUD	0.0172	-0.1809	0.0026	0.8245
	(0.0267)	(3.3693)		
DAT	0.0082	0.4876	0.2424	0.5004
	(0.0079)	(0.7348)		
DFM	0.0035	-1.1346	0.0516	0.3220
	(0.0087)	(1.1158)		
LAN (1)	0.0042	0.9531	0.0279	0.4687
	(0.0064)	(0.7736)		
LAN (2)	0.0046	0.1503	0.0056	0.7476
	(0.0047)	(0.4601)		
DIP	0.0162	-1.3343	0.1260	0.1143
	(0.0107)	(1.6000)		
DOM	0.0052	1.3851	0.0465	0.3477
	(0.0089)	(1.4384)		
DOR	-0.0024	-0.0178	0.0002	0.9514
	(0.0058)	(1.010)		
DRM	0.0103	1.9313	0.0706	0.2442
	(0.0141)	(1.6070)		
EAL	-0.0008	0.5043	0.0893	0.1883
	(0.0033)	(0.3717)		
EII	0.0258	2.7729	0.0563	0.3002
	(0.0178)	(2.6037)		
EMN	0.0070	0.6478	0.0278	0.4693
	(0.0106)	(0.9613)		
EXC	0.0085	0.2399	0.0574	0.2954
	(0.0072)	(0.7848)		
FLE	-0.0052	0.3204	0.0227	0.5149
	(0.0073)	(0.4748)		
GAL	-0.0056	-0.7028	0.0265	0.4803
	(0.0096)	(0.9761)		
GCC	0.0204	1.1814	0.0001	0.9642
	(0.0112)	(1.6613)		
GCI	0.0033	0.3640	1.19E-05	0.9815
	(0.0041)	(0.3760)		
GGM	0.0063	2.4244	0.3019	0.0099
	(0.0059)	(0.9005)		

GGS	0.0048	-1.8664	0.2366	0.0254
	(0.0150)	(1.4014)		
GRM	0.0129	2.4017	0.0911	0.1837
	(0.0256)	(1.7408)		
HLG	0.0115	1.8090	0.0732	0.2356
	(0.0147)	(1.6761)		
HWR	0.0114	-0.5840	0.0377	0.3992
	(0.0127)	(1.8697)		
KMT	-0.0122	1.5984	0.0701	0.2463
	(0.0164)	(2.4536)		
LUT	0.0153	1.5935	0.0166	0.5773
	(0.0234)	(3.5342)		
MDC	-0.0007	0.2103	0.0373	0.40185
	(0.0044)	(0.6116)		
MEG	0.0121	0.5974	0.0003	0.9445
	(0.0231)	(4.9988)		
MEL	0.0051	-0.1555	0.0707	0.2439
	(0.0033)	(0.2411)		
MET	0.0201	0.5330	0.0004	0.9354
	(0.0168)	(2.4333)		
MKM	-0.0013	-0.4165	0.0366	0.4063
	(0.0092)	(1.4857)		
MLD	0.0052	1.5913	0.0707	0.2439
	(0.0115)	(1.9334)		
MMG	-0.0036	-0.3446	0.2268	0.0291
	(0.0068)	(0.9351)		
MOT	0.0034	0.4315	0.0561	0.3015
	(0.0048)	(0.5941)		
RWS (1)	0.0091	0.0698	0.0035	0.8002
	(0.0079)	(1.3541)		
RWS (2)	0.0128	-0.4939	0.0073	0.7135
	(0.0082)	(1.3254)		
TCY (1)	0.0013	2.0369	0.0014	0.8724
	(0.0125)	(1.9317)		
TCY (2)	0.0138	0.1597	0.0363	0.4081
	(0.0117)	(1.8398)		
MTN	0.0009	-0.2643	0.0155	0.5902
	(0.0145)	(2.1334)		
MWL	0.0007	0.8619	0.1593	0.0731
	(0.0061)	(1.1815)		
NFM	0.0036	1.4244	0.1178	0.1277
	(0.0033)	(0.5787)		
NLY	-0.0033	-0.4701	0.0161	0.5835
	(0.0069)	(0.8428)		
ORR	0.0094	-1.0780	0.0366	0.4063
	(0.0202)	(2.3867)		
PFR	0.0188	4.6402	0.0492	0.3339
	(0.0158)	(2.8371)		
PGN	-0.0015	0.6034	9.76E-05	0.9661
	(0.0219)	(2.3064)		
PHA	0.0145	-0.6006	0.0181	0.5609
	(0.0091)	(1.0847)		
PLP	0.0090	1.6509	0.0613	0.2792
	(0.0151)	(1.7259)		
PRH	0.0027	0.4557	0.0292	0.4589
	(0.0051)	(0.7456)		

PXU	0.0016	1.5189	0.0513	0.3234
	(0.0157)	(1.9706)		
RAI	0.0118	-2.1910	0.0006	0.9176
	(0.0073)	(1.5509)		
RGR	0.0075	0.7338	0.0106	0.6573
	(0.0098)	(1.6282)		
SAG	0.0027	0.2974	0.0862	0.1966
	(0.0039)	(0.5391)		
SEF	0.0078	0.5632	0.0160	0.5843
	(0.0085)	(1.2967)		
SGR	0.0010	0.2313	0.0977	0.1678
	(0.0102)	(1.6495)		
SLH	0.0438	1.7783	0.0458	0.3517
	(0.0276)	(1.8627)		
SLS	-0.0039	-2.5298	0.1763	0.0581
	(0.0138)	(1.3441)		
SNY	0.0130	0.5974	0.0442	0.3603
	(0.0099)	(1.0893)		
SVH	0.0014	3.5930	0.1688	0.0643
	(0.0101)	(1.8909)		
TKG	-0.0122	6.7852	0.1255	0.1152
	(0.0381)	(1.2820)		
TMM	0.0052	1.2035	0.0281	0.4675
	(0.0093)	(1.5195)		
WDI	0.0074	1.7105	0.0425	0.3697
	(0.0139)	(2.006)		
WJM	0.0044	0.1353	0.0048	0.7663
	(0.0079)	(1.2315)		
WMI	-0.0021	5.0423	0.0021	0.8442
	(0.0292)	(5.2363)		
WNA	0.0195	1.4307	0.0594	0.2870
	(0.0146)	(1.3196)		
WSI	0.0027	0.9131	0.1893	0.0487
	(0.0050)	(0.4667)		

The individual risk of target firms varies from -2.5298 to 6.7852 and the average risk is 0.6442 which is a slightly lower than the average risk of individual bidding firms. There are 28 firms (31%) whose individual risks are more than 100% and 24 firms (27%) who have negative values of individual risks. There are 46 firms (51%) whose individual risks are less than 50% and 44 firms (49%) who have individual risks of more than 50%.

Meanwhile, the market risks are very low compared with the individual risks of target firms, the market risks vary between -0.0122 to 0.0438. From 90 regressions, there are 63 intercepts (70%) who have market risks of less than 1% and 27 intercepts (30%) whose market risks are more than 1%. The R-squares range from 0.0001 to 0.3644 and the significance of the F-statistics ranges from 0.0038 and 0.9909.

5.4. The steps for computing abnormal returns

Following is a detailed outline on the calculation of the average daily returns.

Step 1 : estimating the security market lines

$$R_{dit} = \partial_i + \beta_i R_{mit} + e \qquad (1)$$

$$t = -10 , \ldots , +10 \text{ days}$$

where :

R_{dit} = daily share return for firm *i* in day *t*

∂_i = the intercept term

β_i = the systematic risk of share *i*

R_{mit} = rate of return on a market index in day *t* relative to the announcement of offer *i*

e = residual term

We use equation (1) to find out the values of individual firm risk (β_i) and market risk (∂_i). The results of these values along with their statistical tests are given in 5.2. and 5.3.

Step 2 : calculation of the daily rates of return for individual firms (R_{dit}) and the market (R_{mit})

We find out the values of rate of return for individual firm (R_{dit}) and market rate of return (R_{mit}).

(a). R_{dit}, is calculated using the formula :

$$R_{dit} = \frac{(P_{it} - P_{it-1}) + d_{it}}{P_{it-1}} \qquad (2)$$

$t = -10, \ldots, +10$ days

where :

P_{it} = price per share of common stock of firm *i* at the end of day *t*

$P_{i\,t-1}$ = price per share of common stock of firm *i* at the end of day *t-1*

d_{it} = dividend per share of the common stock of firm *i* from the end of day *t-1* to the end of day *t*.

(b). R_{mit}, is calculated using the formula :

$$R_{mit} = \frac{MI_{it} - MI_{i\,t-1}}{MI_{i\,t-1}} \qquad (3)$$

$t = -10, \ldots, +10$ days

where :

MI_{it} = stock market index at the end of day *t*

$MI_{i\,t-1}$ = stock market index at the end of day *t-1*

Step 3 : calculation of the abnormal return

(a). Market model

The abnormal returns for firm *i* in day *t*, AR_{dit}, based on the market model is defined as :

$$AR_{dit} = R_{dit} - \partial_i - \beta_i R_{mit} \qquad (4)$$

$t = -10, \ldots, +10$ days

(b). Market adjusted model

The abnormal returns for firm i in day t, AR_{dit}, based on the market adjusted model is defined as :

$$AR_{dit} = R_{dit} - R_{mit} \qquad (5)$$

$$t = -10, \ldots, +10 \text{ days}$$

Therefore we will obtain the abnormal returns of bidding and target firms by inserting the data from steps 1 and 2 into the equation (4) for market model and the equation (5) for market adjusted model.

Step 4 : calculation the average abnormal return

After we have the values of abnormal returns for individual firm from -10 until +10 days, now we have to compute the average abnormal return for each group of firms, i.e : bidding firm and target firm, by totalling all the abnormal returns of each group on a particular day and then divided by the total firms.

$$AAR_{dit} = \frac{\Sigma AR_{dit}}{n}$$

The values of average abnormal returns for each day from -10 until +10 days are given in the tables of Chapters 6, 7, 8 and 9.

Following demonstrates the calculation of the average abnormal return of bidding firms on day -10 based on the market model (as seen in Table 6.1, page 61).

Firm Code	∂	ß	R mit	Rdit	AR
(1)	(2)	(3)	(4)	(5)	(6)
ARL (1)	0.0042	0.4279	-0.0063	0.0130	0.0115
ARL (2)	0.0066	0.2552	-0.0013	-0.0033	-0.0096
BHP	0.0002	1.4326	0.0183	0.0282	0.0038
BIL (1)	0.0024	1.1660	0.0094	0.0252	0.0119
BIL (2)	0.0016	0.3220	0.0064	0.0141	0.0104
BPT (1)	0.0045	-0.8041	0.0081	-0.1333	-0.1313
BPT (2)	0.0212	0.3172	-0.0004	0.0000	-0.0210
EDI (1)	-0.0018	0.3281	0.0042	-0.0164	-0.0160
EDI (2)	0.0001	0.2662	0.0065	0.0000	-0.0018
AAA	0.0005	1.2251	-0.0010	0.0165	0.0172
AAD	0.0050	0.7336	0.0188	0.0448	0.0260
AHD	-0.0001	0.5289	-0.0005	0.0321	0.0325
ANI	-0.0030	1.7188	0.0006	0.0000	0.0022
ARS	-0.0020	1.4628	-0.0005	-0.0278	-0.0251
ASH	-0.0029	0.5215	0.0066	-0.0270	-0.0276
AVR	0.0088	2.0625	-0.0048	-0.0367	-0.0356
AXI	0.0020	-0.1104	0.0004	-0.0217	-0.0237
BCD	-0.0014	1.3562	0.0030	-0.0344	0.0317
BOR	0.0052	1.1672	0.0051	0.0129	0.0018
BRL	0.0029	0.1617	0.0060	0.0000	-0.0039
BTA	-0.0001	0.3377	0.0086	0.0228	0.0201
BUR	0.0097	0.3633	0.0095	0.0000	-0.0131
CAE	0.0062	1.8251	0.0063	0.0357	0.0181
CEY	0.0027	0.7094	-0.0005	0.0000	-0.0023
CGL	-0.0007	1.1916	-0.0139	-0.0309	-0.0137
DAR	0.0017	0.8714	-0.0028	0.0261	0.0268
DVD	0.0039	0.7274	0.0007	-0.0121	-0.0165
FBG (1)	-0.0002	0.8499	0.0030	0.0045	0.0021
FBG (2)	0.0020	0.7622	-0.0004	0.0086	0.0069
FBG (3)	0.0005	0.9946	-0.0008	-0.0090	-0.0087
GCM (1)	-0.0052	0.5533	-0.0034	-0.0231	-0.0159
GCM (2)	-0.0035	0.8369	-0.0034	-0.0231	-0.0178
GMA (1)	-0.0024	1.9553	0.0049	0.0167	0.0095
GMA (2)	-0.0052	1.6298	0.0019	-0.0189	-0.0168
HNG (1)	-0.0001	0.6113	0.0013	0.0000	-0.0007
HNG (2)	0.0054	0.5243	0.0078	0.0000	-0.0095
EMN	-0.0010	0.1845	-0.0000	-0.0069	-0.0059
FCL	-0.0007	1.7540	0.0032	0.0070	0.0022
FIG	0.0054	1.1512	-0.0020	0.0000	-0.0031
GKL	-0.0011	1.9562	-0.0012	0.0270	0.0305
GSP	0.0015	0.6531	0.0071	-0.0314	-0.0376
GUD	-0.0025	0.0092	0.0060	0.0000	0.0024
GWT	-0.0024	0.0453	0.0135	0.0069	0.0086
HAO	0.0060	0.4160	-0.0016	0.0392	0.0339
HIL	0.0056	0.9737	-0.0003	-0.0057	-0.0110
HMC	-0.0084	1.9928	-0.0106	0.0000	0.0296
IAM	-0.0006	-0.1276	-0.0047	-0.0108	-0.0108
IHG	0.0051	0.3753	0.0043	0.0000	-0.0067
IHN	-0.0004	0.4087	0.0035	-0.0182	-0.0192
KYD	-0.0106	1.6878	0.0108	-0.0267	-0.0343
LEV	-0.0091	0.6908	-0.0018	0.0000	0.0104
LLR	0.0022	1.9736	0.0071	0.0781	0.0620

MEX	-0.0009	0.3545	-0.0045	-0.0897	-0.0872
PDG (1)	-0.0045	-0.9384	0.0066	-0.0333	-0.0226
PDG (2)	-0.0062	-0.2596	0.0066	-0.0333	-0.0254
RSG (1)	0.0042	1.3856	-0.0104	-0.0206	-0.0103
RSG (2)	0.0072	0.7132	0.0083	0.0000	-0.0131
SGW (1)	0.0046	0.5586	0.0142	0.0137	0.0012
SGW (2)	-0.0014	0.5782	0.0006	0.0000	0.0011
NDY	-0.0011	1.4945	-0.0048	0.0000	0.0083
NPC	0.0084	1.3235	-0.0011	0.0000	-0.0070
OTR	-0.0017	1.4154	-0.0041	-0.0061	0.0013
PBB	0.0056	0.9157	0.0072	0.0142	0.0020
PIG	-0.0014	-0.5201	0.0060	-0.0200	-0.0155
PLU	0.0018	1.9020	0.0047	0.0124	0.0016
QUF	0.0013	0.4052	-0.0049	0.0085	0.0092
RGC	-0.0022	0.1648	0.0028	-0.0080	-0.0062
RIC	0.0024	1.1740	-0.0052	0.0000	0.0037
SBM	-0.0069	0.0925	-0.0074	-0.0119	-0.0044
SFC	-0.0023	0.0368	0.0093	0.0149	0.0176
SRI	-0.0044	0.8663	-0.0007	0.0000	0.0050
SRP	-0.0024	1.9014	0.0072	0.0089	-0.0023
SWS	0.0053	0.8169	0.0012	0.0000	-0.0063
TIR	-0.0013	0.8397	-0.0061	0.0000	-0.0065
TNY	0.0008	-0.3369	0.0044	0.0238	0.0245
VRL	0.0058	0.4332	-0.0074	0.0348	0.0322
WES	0.0004	0.6671	0.0033	-0.0063	-0.0082
WGR	0.0009	-2.6449	0.0055	0.0769	0.0908
WLH	0.0169	-0.6449	0.0040	0.0769	0.0627
WOW	0.0005	-0.7903	0.0031	0.0018	0.0037
XEN	-0.0072	1.3790	-0.0044	0.0000	0.0133

The sum of column (6) is the total for 81 firms = -0.0506. The average abnormal return is given by :

$AAR_{t=-10}$ = -0.0506/81 = -0.0006 = -0.06%

Therefore the average abnormal return for the bidding firms on day -10 is -0.06%, can be found in Table 6.1, row 1, column 2.

As demonstrated above each average rate of return is calculated from 81 equations. This complex process widens the remoteness between the estimated equations and the calculated average daily rates of return. Also, the series of rates of return are not independent of each other, because of autocorrelation. Therefore, any tests on the daily average rates of return are not valid.

Chapter 6

The Abnormal Return
After the Announcement of Mergers and Acquisitions

6.1. Introduction

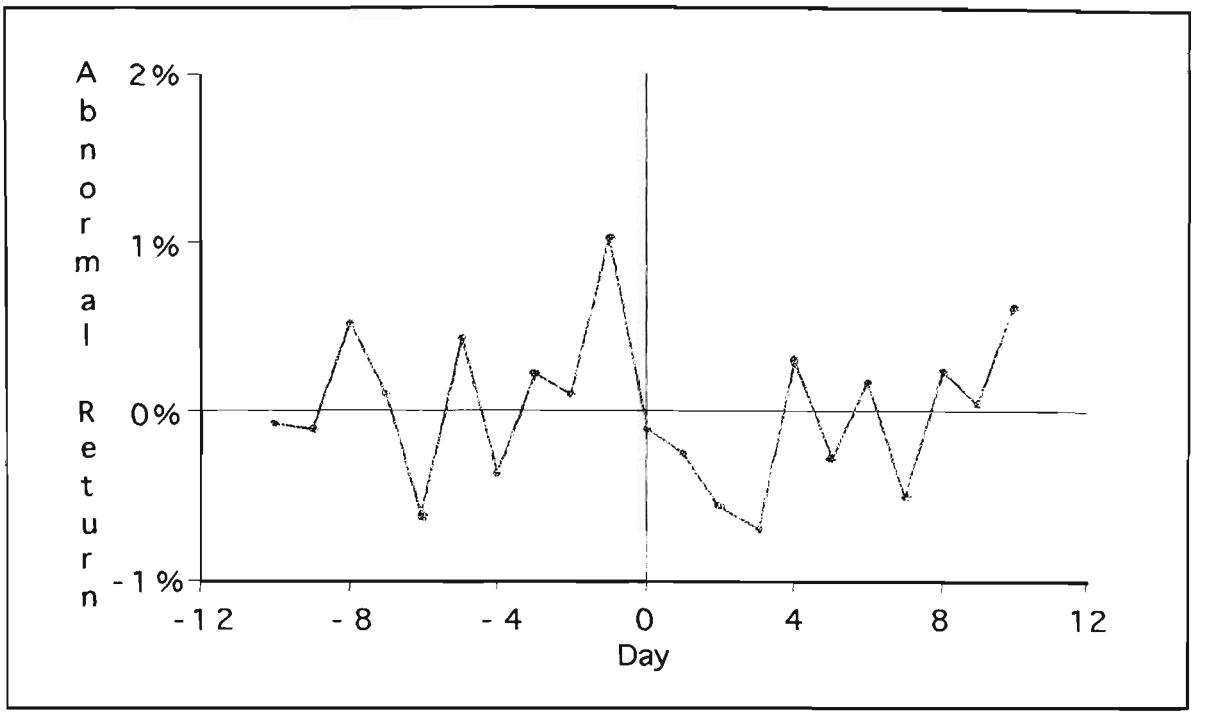
The earlier chapter showed that the announcement of merger proposals results in changes in share prices of both the acquiring and target firms. Accordingly, the change in share prices influences whether these shares will return a capital gain or a capital loss. In this chapter, the empirical result of shareholders' returns after the announcement of mergers and acquisitions will be analysed. The results will be discussed under the bidders and the target firms using both the market model and market adjusted model.

6.2. The bidder's abnormal return

6.2.1. Market model

From Figure 6.1., it is evident that the abnormal return of bidding firms rises and falls for a period of 10 days before the announcement of mergers and acquisitions until 10 days after the announcement of mergers and acquisitions. This volatility results from the changes in the share prices of bidding firms following the release of information about proposed mergers and acquisitions.

Figure 6.1. The average abnormal return of bidding firms 10 days prior to and 10 days after the announcement (Market model).



From the above Figure, it is clear that the abnormal returns of the bidding firms fluctuate sharply before the announcement of mergers and acquisitions. The return achieves its peak level on the day before the announcement (t=-1), and then, drops to a negative return when the merger proposal is announced (t=0). It is notable that the abnormal return is still volatile after the announcement of mergers and acquisitions, falling gradually from the announcement day until three days after the announcement (t=0 to t=-3). It then fluctuates between positive and negative levels.

Table 6.1. reveals that the abnormal return (AR) of the bidding firms on the announcement day is -0.09%, implying that the shareholders of the bidding firms obtain a negative gain on the announcement of mergers and acquisitions. The abnormal return for the bidding firms one day before the announcement (t =-1) is 1.04% which is the highest daily abnormal return for the 20-day measurement, whilst the lowest abnormal return occurs on three days after the announcement (t = 3), i.e. -0.68%. The average abnormal return during the period of measurement is 0.02% which is a very low positive abnormal return for the shareholder of the bidding firms.

The cumulative abnormal return (CAR) for the acquiring firms shows a positive return of

0.24% on average during the 20-day measurement, which is slightly higher than the abnormal return. The highest cumulative abnormal return occurs one day before the announcement of mergers and acquisitions (t=-1), that is, 1.37%, and the lowest -0.44% seven days after the announcement (t=7).

Table 6.1. The average abnormal return of bidding firms 10 days prior to and 10 days after the announcement (Market model; n = 81).

Day	Abnormal Return	Cumulative A R
-10	-0.06%	-0.06%
-9	-0.09%	-0.16%
-8	0.53%	0.37%
-7	0.10%	0.48%
-6	-0.60%	-0.13%
-5	0.45%	0.32%
-4	-0.35%	-0.03%
-3	0.25%	0.22%
-2	0.11%	0.33%
-1	1.04%	1.37%
0	-0.09%	1.28%
1	-0.23%	1.05%
2	-0.55%	0.50%
3	-0.68%	-0.18%
4	0.32%	0.14%
5	-0.28%	-0.14%
6	0.19%	0.05%
7	-0.50%	-0.44%
8	0.25%	-0.19%
9	0.06%	-0.14%
10	0.64%	0.50%
Mean	0.02%	0.24%
Minimum	-0.68%	-0.44%
Maximum	1.04%	1.37%

The cumulative abnormal return for the bidding firms for several time segments is shown in Table 6.2. The cumulative abnormal return for the bidding firms on t =-10 to t=-1 is

1.37% which is higher than the cumulative abnormal return from t=-10 to t=0 with a value of 1.28% (see Table 6.1), because the shareholders of bidding firms gain a negative abnormal return on the announcement day. From t=-1 to t=0, the cumulative abnormal return is 0.95%, and from t=-1 to t=1, the cumulative abnormal return is 0.72%. Thus, the abnormal return of the bidding firms surrounding the announcement day is still positive even though the gain is very small.

Table 6.2. The various cumulative average abnormal return of bidding firms (Market model; n = 81)

Day	-10 to -1	-1 to 0	-1 to 1	0 to 1	1 to 10
CAR	1.37%	0.95%	0.72%	-0.33%	-0.78%
Mean	0.14%	0.48%	0.24%	-0.16%	-0.08%
Min	-0.60%	-0.09%	-0.23%	-0.23%	-0.68%
Max	1.04%	1.04%	1.04%	-0.09%	0.64%

The cumulative abnormal return for the bidding firms after the announcement of mergers and acquisitions, however tends to decrease. From Table 6.2. for the period of t=0 to t=1, the cumulative abnormal return is -0.33%, and for the period of t=1 to t=10, it is -0.78%. These results indicate that the shareholders of bidding firms obtain negative abnormal returns following the announcement of mergers and acquisitions.

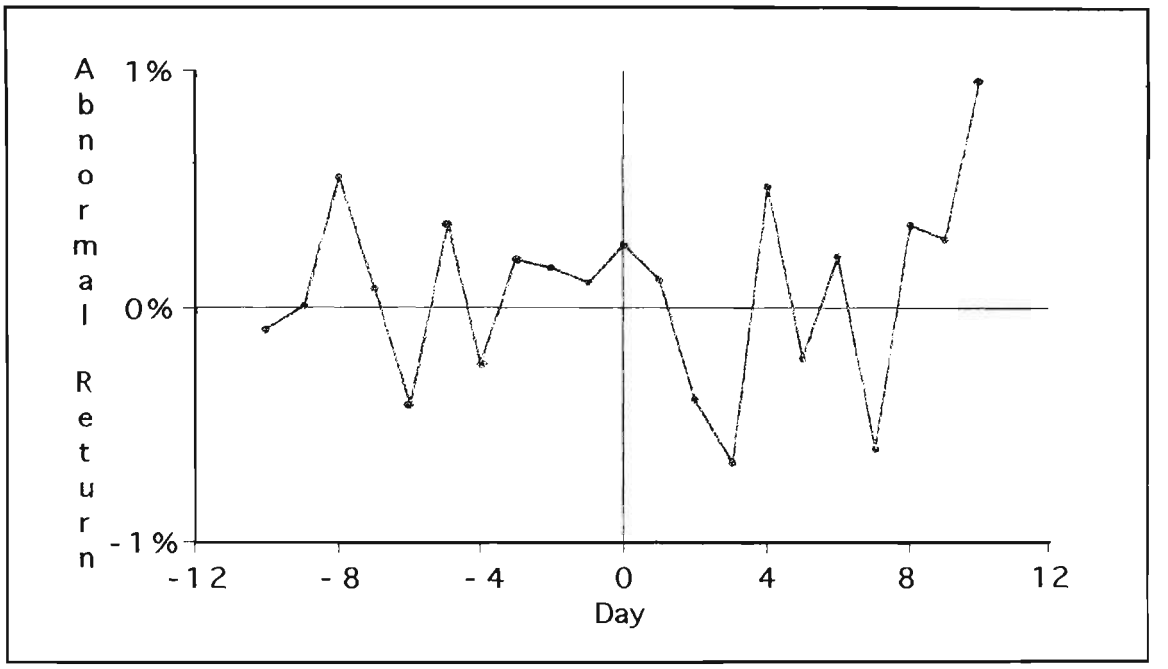
From the above results it can be argued that the shareholders of bidding firms experience a positive abnormal return before the announcement of mergers and acquisitions and a negative abnormal return following such an announcement. This is consistent with the Hubris theory in which the acquiring firms mostly obtain negative abnormal returns following the merger offer.

6.2.2. Market adjusted model

The abnormal return for the bidding firms based on the market adjusted model can be seen in Figure 6.2. The abnormal return rises and falls from t=-10 to t=-1, after which, the abnormal return rises slightly on the announcement day (t=0) compared with the day

before the announcement (t =-1). The abnormal return of the bidding firms after the announcement of mergers and acquisitions fluctuates sharply for the period of t=1 to t=10, displaying its lowest level on t= 3 and its highest level on t=10.

Figure 6.2. The average abnormal return of bidding firms 10 days prior to and 10 days after the announcement (Market adjusted model).



The abnormal return for the shareholders of the bidding firms in Table 6.3. indicates that on the announcement day of mergers and acquisitions, the shareholders gain a positive abnormal return of 0.27%. Even though the shareholders of the bidding firms receive a positive abnormal return on the announcement day, it return is very small. During the 20-day measurement, the shareholders of the bidding firms experience the lowest abnormal return three days after the announcement (t =3), and obtain the highest abnormal return ten days after the announcement (t =10). Additionally, the average abnormal return of the bidding firms is also very low at 0.08%.

When the cumulative abnormal return of the bidding firms is analysed it shows better results. The announcement of mergers and acquisitions produces a positive cumulative return on the whole. On average, the cumulative abnormal return of 0.52% is higher than the average abnormal return whose value is 0.08%. For the 20-day measurement, the

cumulative abnormal return from ten days prior to, until ten days after, the announcement of mergers and acquisitions (t =-10 to t =10) is 1.63%, whereas the lowest cumulative abnormal return is -0.09% ten days prior to the merger announcement (t =-10).

Table 6.3. The average abnormal return of bidding firms
10 days prior to and 10 days after the announcement.
(Market adjusted model; n = 81)

Day	Abnormal Return	Cumulative A R
-10	-0.09%	-0.09%
-9	0.01%	-0.08%
-8	0.55%	0.47%
-7	0.09%	0.56%
-6	-0.41%	0.15%
-5	0.35%	0.50%
-4	-0.25%	0.25%
-3	0.21%	0.46%
-2	0.18%	0.64%
-1	0.11%	0.75%
0	0.27%	1.02%
1	0.13%	1.15%
2	-0.39%	0.76%
3	-0.66%	0.09%
4	0.51%	0.61%
5	-0.22%	0.38%
6	0.23%	0.61%
7	-0.60%	0.01%
8	0.36%	0.37%
9	0.30%	0.66%
10	0.97%	1.63%
Mean	0.08%	0.52%
Minimum	-0.66%	-0.09%
Maximum	0.97%	1.63%

In Table 6.4., the cumulative abnormal return of bidding firms from t=-10 to t=-1 is a low 0.75% and the average abnormal return is also very low at 0.07%. The cumulative abnormal return from one day before the announcement to the announcement day (t =-1 to t=0) is 0.38%. The cumulative abnormal return surrounding the announcement of mergers and acquisitions (t=-1 to t=1) is small but positive at 0.51%. This abnormal return is slightly higher than the abnormal return on the announcement day (t =0) which is 0.27% (see Table 6.3.). Furthermore, the cumulative abnormal return of the bidding firms post merger announcement demonstrates positive abnormal returns. For the period of t =0 to t=1, the cumulative abnormal return is 0.40%, and for the period of t=1 to t=10, the cumulative abnormal return is 0.61%.

From these findings it can be argued that on the whole, shareholders of the acquiring firms experience a positive abnormal return as well as a positive cumulative abnormal return. The shareholders gain positive abnormal returns before and after the announcement day although the abnormal return is very small. However, the cumulative abnormal return for the shareholder of the bidding firms is slightly better on the ten days before the announcement of mergers and acquisitions (t=-10 to t=-1) than the cumulative abnormal return for the ten days after the announcement (t=1 to t =10). This indicates that the acquiring shareholders obtain less abnormal returns after the merger offer which again is consistent with the Hubris theory.

Table 6.4. The various cumulative average abnormal return of bidding firms
(Market adjusted model; n = 81)

Day	-10 to -1	-1 to 0	-1 to 1	0 to 1	1 to 10
CAR	0.75%	0.38%	0.51%	0.40%	0.61%
Mean	0.07%	0.19%	0.17%	0.20%	0.06%
Min	-0.41%	0.11%	0.11%	0.13%	-0.66%
Max	0.55%	0.27%	0.27%	0.27%	0.97%

6.3. The target firms' abnormal return

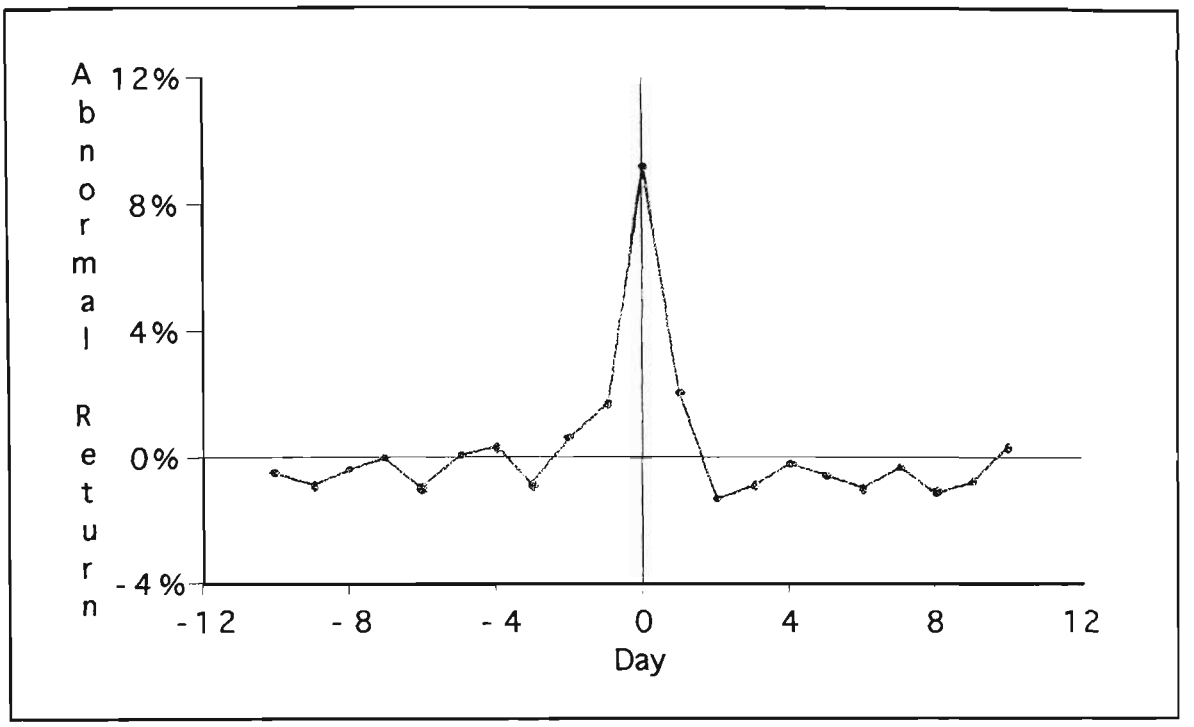
6.3.1. Market model

The abnormal return of the target firms in Figure 6.3. shows that prior to the announcement of mergers and acquisitions the abnormal return fluctuates from ten days until one day before the announcement (t=-10 to t=-1). In that period, the abnormal returns are generally negative which means that the target firms experience negative abnormal returns before the announcement of mergers and acquisitions. However, the abnormal return of the target firms tends to go up drastically two days before the announcement (t=-2) and remain elevated until the announcement day (t=0). This may reflect the likelihood that information of merger proposals has been absorbed in the market a few days before the formal announcement of mergers and acquisitions or that a rumour of a merger offer has already been heard by shareholders and investors in the market.

The abnormal return achieves its highest level on the announcement day of mergers and acquisitions. This reflects the expectation of the target shareholders that the announcement of mergers and acquisitions will generate a higher premium. Therefore, the announcement of mergers and acquisitions is considered to be good news for the target shareholders because it drives up the shareholders' wealth.

The abnormal return of the target firms tends to decline after the merger announcement. This drops dramatically from t=0 to t =2, after which, the return tends to fluctuate within a negative range. The period of expectation of merger benefits as well as merger approval are remain an uncertain one for the investors and shareholders, which could explain the driving down of returns.

Figure 6.3. The average abnormal return of target firms
10 days prior to and 10 days after the announcement
(Market model)



In Table 6.5., it is demonstrated that the shareholders of the target firms gain a large abnormal return on the announcement day of 9.17% which exceeds all abnormal returns prior to the announcement day. During the period of 20-day measurement, the average abnormal return of the acquired firms is 0.20% which is far below the abnormal return on the announcement day. The abnormal return of the acquired firms experiences the lowest return of -1.32% two days after the announcement of mergers and acquisitions (t=2).

The cumulative abnormal return of the target firms reaches its highest level of 10.10% on one day after the announcement of mergers and acquisitions (t =1). In contrast, the cumulative abnormal return of the target firms reaches its highest negative level of -3.33% three days before the merger announcement (t =-3).

Table 6.5. The average abnormal return of target firms
10 days prior to and 10 days after the announcement.
(Market model; n = 90)

Day	Abnormal Return	Cumulative A R
-10	-0.51%	-0.51%
-9	-0.86%	-1.37%
-8	-0.37%	-1.74%
-7	0.02%	-1.72%
-6	-1.04%	-2.77%
-5	0.09%	-2.68%
-4	0.28%	-2.40%
-3	-0.93%	-3.33%
-2	0.63%	-2.70%
-1	1.65%	-1.05%
0	9.17%	8.12%
1	1.98%	10.10%
2	-1.32%	8.78%
3	-0.86%	7.92%
4	-0.17%	7.75%
5	-0.57%	7.18%
6	-1.04%	6.14%
7	-0.34%	5.81%
8	-1.06%	4.75%
9	-0.78%	3.98%
10	0.28%	4.26%
Mean	0.20%	2.60%
Minimum	-1.32%	-3.33%
Maximum	9.17%	10.10%

From Table 6.6. the cumulative abnormal return of the acquired firms shows different results from the various ranges of measurements. From ten days to one day before the announcement (t=-10 to t =-1), the cumulative abnormal return is - 1.05% which indicates that prior to the merger announcement the shareholder of the target firms basically suffer a cumulative abnormal loss.

In the meantime, from one day before the announcement to the announcement day (t=-1

to t=0), the cumulative abnormal return is 10.82%, and the cumulative abnormal return for one day prior to, until one day after, the announcement (t=-1 to t=1) is 12.80%. Further, the cumulative abnormal return on the announcement day to day after the announcement (t=0 to t =1) is 11.15%. These positive results demonstrate that surrounding the announcement of mergers and acquisitions, the shareholders of target firms experience large positive gains. This result is in line with the abnormal return on the announcement day (t =0) which generates a return of 9.17% (see Table 6.5.).

In contrast, the cumulative abnormal return for the target firms shows a negative result of -3.86% for the period of one day to ten days after the merger announcement (t =1 to t=10). The negative gain during this period is worse compared with the negative gain in the period of ten days to one day before the merger announcement (t =-10 to t =-1).

Based on these results, it can be concluded that the target shareholders experience negative gains ten days before the announcement of mergers and acquisitions as well as ten days after such announcement. Nevertheless, the shareholders of target firms display large, positive abnormal returns around the announcement days.

Table 6.6. The various cumulative average abnormal return of target firms (Market model; n = 90)

Day	-10 to -1	-1 to 0	-1 to 1	0 to 1	1 to 10
CAR	-1.05%	10.82%	12.80%	0.40%	-3.86%
Mean	-0.11%	5.41%	4.27%	0.20%	-0.39%
Min	-1.04%	1.65%	1.65%	0.13%	-1.32%
Max	1.65%	9.17%	9.17%	0.27%	1.98%

6.3.2. Market adjusted model

The market adjusted model for the target firms can be seen in Figure 6.4. The graph shows that the abnormal return of target firms fluctuates from ten days until three days prior to the announcement (t=-10 to t=-3), after which it increases sharply from three days before the

announcement until the announcement day (t=-3 to t =0). This indicates that the merger proposal has been greeted favourably by the shareholder of target firms, and therefore, their expectation of future merger benefits is already reflected in this high abnormal return.

Conversely, Figure 6.4. also demonstrates that the abnormal returns tend to fall after the announcement of mergers and acquisitions. From the announcement day until two days after the announcement (t=0 to t=2), the target firms' abnormal returns plunge sharply, after which (t=2 to t=10), the abnormal return resumes normal levels similar to that before the announcement of the merger and acquisition.

Figure 6.4. The average abnormal return of target firms
10 days prior to and 10 days after the announcement
(Market adjusted model).

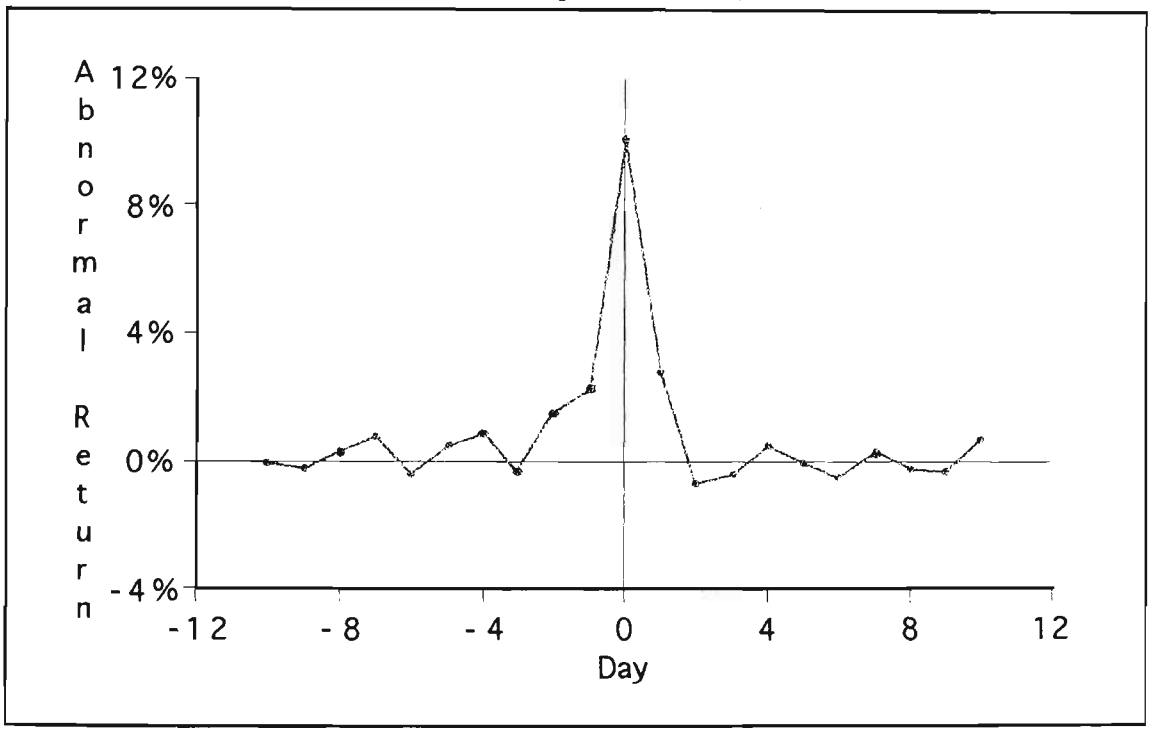


Table 6.7. reveals that the shareholders of target firms experience a large, positive abnormal return on the announcement day of 10.08% which is the biggest return during the 20-day measurement. The abnormal returns two days and one day before the announcement (t=-2 and t =-1) as well as on one day after the announcement (t=1) are also positive and quite high at 1.52%, 2.31% and 2.77% respectively. The average abnormal return for the target firm during the 20-day measurement period is 0.85%, and the lowest abnormal return is -0.67% which occurs two days after the announcement (t=2). The cumulative abnormal return of target firms reaches is highest level of 18.33% one day

after the announcement (t=1), and falls to its lowest level of -0.15% nine days before the announcement (t=-9). The average cumulative abnormal return reaches a maximum of 9.83%.

Table 6.7. The average abnormal return of target firms
10 days prior to and 10 days after the announcement.
(Market adjusted model; n = 90)

Day	Abnormal Return	Cumulative A R
-10	0.04%	0.04%
-9	-0.18%	-0.15%
-8	0.32%	0.17%
-7	0.76%	0.93%
-6	-0.36%	0.57%
-5	0.51%	1.09%
-4	0.87%	1.95%
-3	-0.30%	1.65%
-2	1.52%	3.17%
-1	2.31%	5.48%
0	10.08%	15.55%
1	2.77%	18.33%
2	-0.67%	17.66%
3	-0.37%	17.28%
4	0.46%	17.74%
5	0.02%	17.76%
6	-0.45%	17.31%
7	0.27%	17.57%
8	-0.18%	17.39%
9	-0.26%	17.13%
10	0.67%	17.81%
Mean	0.85%	9.83%
Minimum	-0.67%	-0.15%
Maximum	10.08%	18.33%

In Table 6.8. the cumulative abnormal return of target firms from ten days until one day before the announcement of mergers and acquisitions (t=-10 to t=-1) has a positive value of 5.48%. The cumulative abnormal return, then, climbs to 12.39% from one day prior to the announcement until the announcement day (t=-1 to t=0). Their cumulative abnormal return is higher one day before the announcement until one day after the announcement (t=-1 to t=1) at 15.16%. These results imply that around the announcement day, the shareholders of target firms gain large abnormal returns.

After the announcement of mergers and acquisitions, the cumulative abnormal returns for target shareholders still show large, positive abnormal returns. The cumulative abnormal return on the announcement day to one day after the announcement (t=0 to t=1) is 12.85%, and the cumulative abnormal return from one day to ten days after the announcement (t=1 to t =10) is 2.25%. However, the cumulative abnormal return post announcement day (t=1 to t=10) is lower than the cumulative abnormal return prior to the announcement day (t=-10 to t=-1).

Table 6.8. The various cumulative average abnormal return of target firms
(Market adjusted model; n = 90)

Day	-10 to -1	-1 to 0	-1 to 1	0 to 1	1 to 10
CAR	5.48%	12.39%	15.16%	12.85%	2.25%
Mean	0.55%	6.91%	5.05%	6.42%	0.23%
Min	-0.36%	2.31%	2.31%	2.77%	-0.67%
Max	2.31%	10.08%	10.08%	10.08%	2.77%

In conclusion, the shareholders of target firms enjoy positive abnormal returns before the announcement of mergers and acquisitions. When the bidding firms are proposing their bid to the target firms, the shareholders of target firms gain the highest abnormal return. Further, their positive abnormal return still continues after the announcement day even though it is not as high as the abnormal return before the announcement is made.

6.4. Comparison of the two models

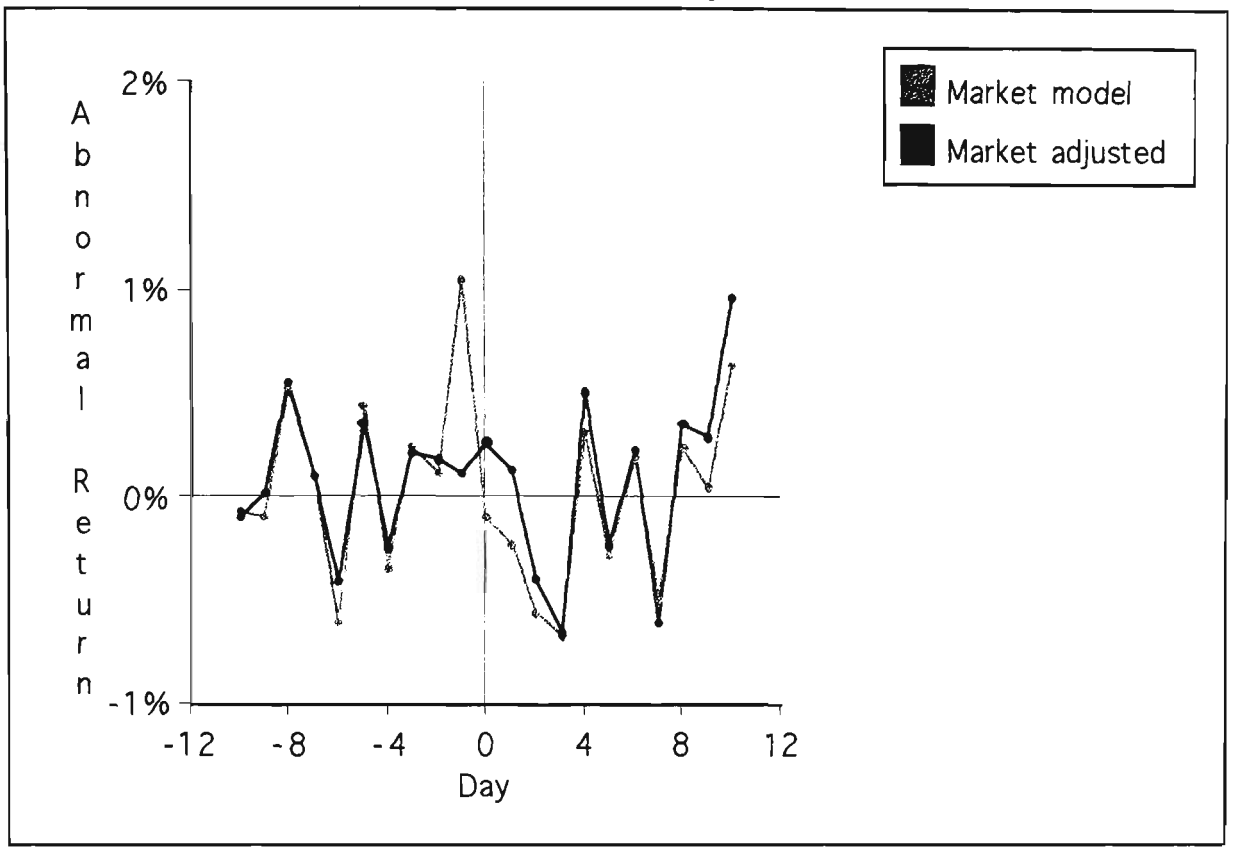
The following is a comparison of the two models employed in this study to investigate the abnormal returns for the shareholders of bidding firms and target firms, the market model and the market adjusted model. Whether these two models generate similar or different results is discussed further.

6.4.1. The bidder's abnormal return

The market model and market adjusted model for abnormal returns of the bidding firms can be seen in Figure 6.5., which show that in general the market model moves according to the same pattern as the market adjusted model. The difference in the patterns is in the period between one day before the announcement day until one day after the announcement (t=-1 to t=1).

One day before the announcement (t=-1), the abnormal return of bidding firms based on the market model is very high. In contrast, the abnormal return of bidding firms based on the market adjusted model is lower. Furthermore, the abnormal return on the announcement day (t=0) is also different where the market model demonstrates a negative return and the market adjusted model shows a positive return. This situation continues until one day after the announcement (t=1) where the market model generates a negative abnormal return and the market adjusted model generates a positive abnormal return. However, on the whole, the market adjusted model displays slightly better returns for the shareholders of bidding firms compared with the market model.

Figure 6.5. The average abnormal return of bidding firms
10 days prior to and 10 days after the announcement
(Market model & Market adjusted model)



From Table 6.9., it is evident that the average abnormal return of the bidding firms based on the market model is 0.02% whereas the market adjusted model is 0.08%. The minimum abnormal return on the market model is almost similar to that on the market adjusted model which are 0.02% and 0.08% respectively, and the maximum abnormal returns are 1.04% and 0.97% respectively. Importantly, these returns are very close which indicate that the use of the market model and the market adjusted model has no significant effect on average return to the shareholders of bidding firms.

Meanwhile, the abnormal return around the announcement of mergers and acquisitions (t=-1 to t=1) shows mixed results. On the one hand, one day before the announcement (t=-1), both models generate positive results, 1.04% with the market model and 0.11% with the market adjusted model. On the other hand, on the announcement day (t=0) and also one day after the announcement (=1), the market model produces negative returns whilst the market adjusted analysis produces positive returns.

Table 6.9. The average abnormal return of bidding firms
10 days prior to and 10 days after the announcement.
(Market model and Market adjusted model; n = 81)

Day	Market model	Market adjusted model
-10	-0.06%	-0.09%
-9	-0.09%	0.01%
-8	0.53%	0.55%
-7	0.10%	0.09%
-6	-0.60%	-0.41%
-5	0.45%	0.35%
-4	-0.35%	-0.25%
-3	0.25%	0.21%
-2	0.11%	0.18%
-1	1.04%	0.11%
0	-0.09%	0.27%
1	-0.23%	0.13%
2	-0.55%	-0.39%
3	-0.68%	-0.66%
4	0.32%	0.51%
5	-0.28%	-0.22%
6	0.19%	0.23%
7	-0.50%	-0.60%
8	0.25%	0.36%
9	0.06%	0.30%
10	0.64%	0.97%
Mean	0.02%	0.08%
Minimum	-0.68%	-0.66%
Maximum	1.04%	0.97%

The cumulative abnormal returns shown in Table 6.10. will clarify the difference of returns for both models. In fact, the market model and the market adjusted model have a significant difference when the cumulative abnormal return is measured in various ranges. From ten days until one day before the announcement of mergers and acquisitions (t=-10 to t=-1), the market model generates a cumulative abnormal return of 1.37% whilst the market adjusted model has a cumulative abnormal return of 0.75%. The former has a higher cumulative abnormal return than the latter. Also, from one day prior to the announcement

until the announcement day (t=-1 to t=0), the cumulative abnormal return is slightly higher for the market model. Surrounding the announcement day (t=-1 to t=1), the cumulative abnormal return for both model is positives but the market model has a slightly higher cumulative abnormal return.

However, the cumulative abnormal return after the announcement of mergers and acquisitions demonstrates opposite results. The cumulative abnormal return based on the market return is lower than that of the market adjusted model. From the announcement day to one day after the announcement (t =0 to t=1), the cumulative abnormal return on the market model is negative while the market adjusted model has a positive result. The same result can be seen at one day to ten days after the announcement (t=1 to t=10) where the market model has a further negative result compared with the market adjusted model.

Table 6.10. The various cumulative average abnormal return of bidding firms (Market model and Market adjusted model; n = 81)

Day	Market model	Market adjusted model
-10 to -1	1.37%	0.75%
-1 to 0	0.95%	0.38%
-1 to 1	0.72%	0.51%
0 to 1	-0.33%	0.40%
1 to 10	-0.78%	0.61%

6.4.2. The target's abnormal return

The graph of the market model and the market adjusted model of abnormal returns for the target firms at Figure 6.6. shows that most of the time the market model charts a similar pattern to that of the market adjusted model. It is clear that the abnormal returns of both models move in the same direction, however, the market adjusted model generates a slightly higher abnormal return compared with the market model. The abnormal return of target firms rises and falls from ten days until three days before the announcement of mergers and acquisitions (t=-10 to t=-3). From three days before the announcement (t=-3) , the abnormal return of both models rises slowly until one day prior to the announcement (t=1)

where the abnormal returns climb sharply to the announcement day (t =0).

After the announcement of mergers and acquisitions, the abnormal returns from both the market model and the market adjusted model plummet drastically from the announcement day to two days after the announcement (t =0 to t=2). From three days to ten days after the announcement day (t=3 to t =10), the target abnormal return of both models has a stable trend which is similar to the condition before the announcement day.

Figure 6.6. The average abnormal return of target firms
10 days prior to and 10 days after the announcement
(Market model & Market adjusted model)

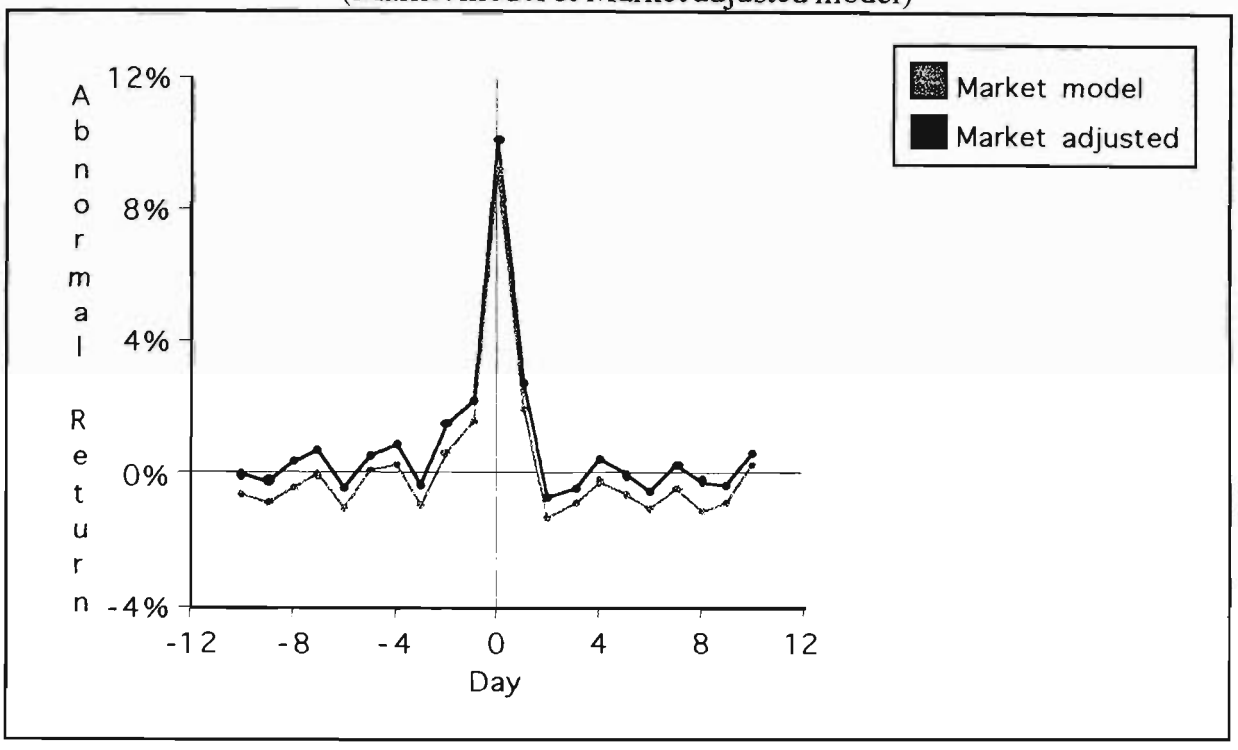


Table 6.11. provides the actual abnormal returns of target firms based on both the market model and market adjusted model. When the bidding firms announce their merger offer, the abnormal return for the shareholder of target firms is positive and very high. The market model generates a return of 9.17% whilst the market adjusted model generates a return of 10.08%. The average abnormal return during the 20-day measurement demonstrates that the market model produces a return of 0.20% and the market adjusted model produces a higher return of 0.85%. This finding implies that the market adjusted model generates a better result of abnormal returns for the shareholders of target firms than the former.

Table 6.11. The abnormal return of target firms
10 days prior to and 10 days after the announcement.
(Market model and Market adjusted model; n = 90)

Day	Market model	Market adjusted model
-10	-0.51%	0.04%
-9	-0.86%	-0.18%
-8	-0.37%	0.32%
-7	0.02%	0.76%
-6	-1.04%	-0.36%
-5	0.09%	0.51%
-4	0.28%	0.87%
-3	-0.93%	-0.30%
-2	0.63%	1.52%
-1	1.65%	2.31%
0	9.17%	10.08%
1	1.98%	2.77%
2	-1.32%	-0.67%
3	-0.86%	-0.37%
4	-0.17%	0.46%
5	-0.57%	0.02%
6	-1.04%	-0.45%
7	-0.34%	0.27%
8	-1.06%	-0.18%
9	-0.78%	-0.26%
10	0.28%	0.67%
Mean	0.20%	0.85%
Minimum	-1.32%	-0.67%
Maximum	9.17%	10.08%

The data in Table 6.12. supports the previous statement that the market adjusted return produces a higher abnormal return than the market model. From ten days to one day before the announcement of mergers and acquisitions (t=-10 to t=-1), the cumulative abnormal returns for target firms are - 1.05% for the market model and 5.48% for the market adjusted model. Meanwhile, the cumulative abnormal return from one day prior to the announcement until the announcement day (t=-1 to t=0) shows a similar result in which the market

adjusted model generates a higher cumulative return than the market model.

Around the announcement day (t =-1 to t=1), the cumulative abnormal returns for both models are very high at 12.80% and 15.16% respectively, and the cumulative abnormal returns from both models are still high and positive even after the announcement of mergers and acquisitions (t=0 to t=1), However, from one day until ten days after the announcement (t =1 to t =10), the cumulative abnormal return based on the market model displays a reverse result compared with the market adjusted model. The market model generates a negative cumulative abnormal return of -3.86% whilst the market adjusted model produces a positive cumulative abnormal return of 2.25%.

Table 6.12. The various cumulative abnormal return of target firms
(Market model and Market adjusted model; n = 90)

Day	Market model	Market adjusted model
-10 to -1	-1.05%	5.48%
-1 to 0	10.82%	12.39%
-1 to 1	12.80%	15.16%
0 to 1	11.15%	12.85%
1 to 10	-3.86%	2.25%

Overall, it is clear that the market adjusted model displays more positive results from various measurements for the shareholder of target firms compared with the market model. In addition, the average abnormal return for the market adjusted model is higher than that for the market model. This finding indicates that the market adjusted model produces superior results compared with the market model for the shareholders of target firms and outperforms the market model on all occasions.

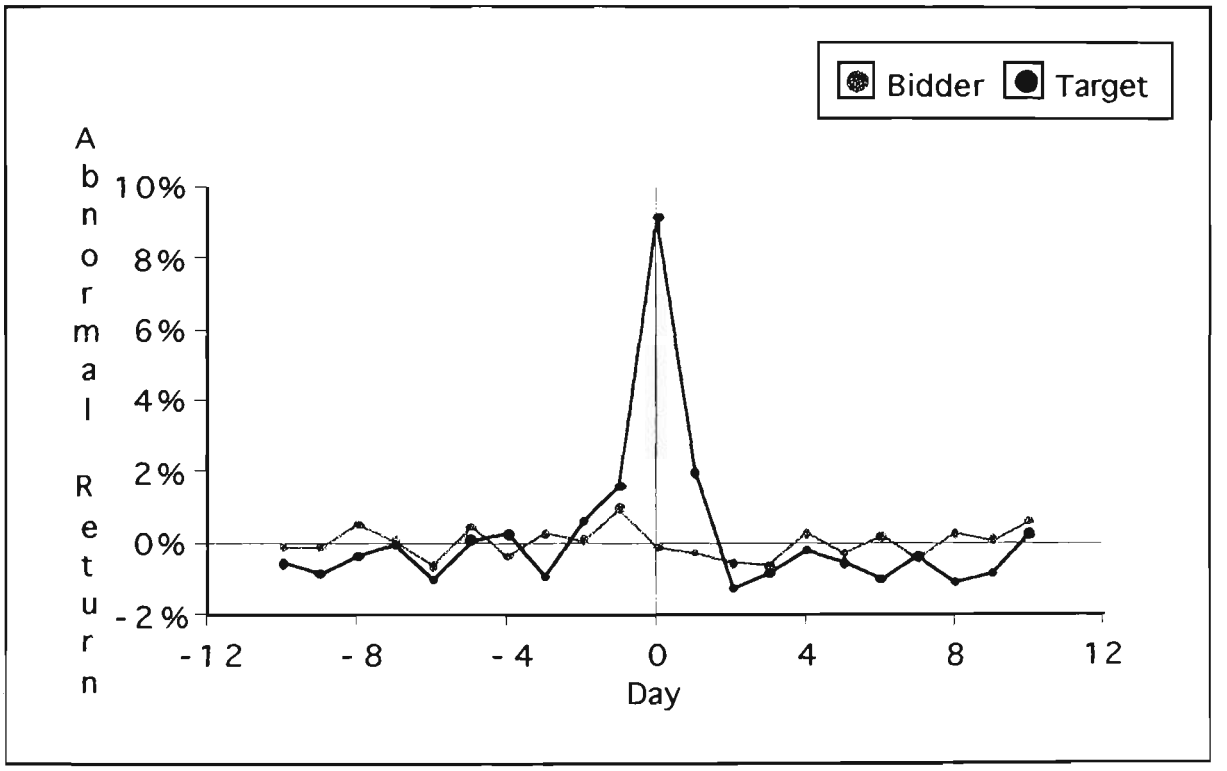
6.5. Comparison of abnormal returns between bidding and target firms

6.5.1. Market model

The chart of abnormal returns for bidding and target firms can be seen in Figure 6.7. It

shows that before the announcement of mergers and acquisitions, the abnormal return for the shareholder of bidding and target firms increases and decreases normally. However, the abnormal return of the target firms starts to rise two days before the announcement day (t=-2), and the abnormal return of bidding firms starts to decline one day before the announcement (t=-1). The abnormal return on the announcement day of mergers and acquisitions (t=0) shows contrasting results. The shareholders of target firms gain a high positive return whilst the shareholders of bidding firms obtain a low negative return.

Figure 6.7. The average abnormal return of bidding and target firms 10 days prior to and 10 days after the announcement (Market model)



After the announcement of mergers and acquisitions, the abnormal return for both the bidding and target firms tends to decline. The abnormal return of target firms plunges sharply and this continues until two days after the announcement (t=2). The abnormal return of bidding firms, on the other hand, is more stable even though it declines slowly until three days after the announcement (t=3). After these periods, the abnormal returns for both the bidding and target firms moves on a normal fluctuation.

The value of abnormal returns for the shareholders of bidding and and target firms is shown in Table 6.13. From this table, it can be seen that on the announcement day of mergers and

acquisitions, the bidding firms and target firms gain abnormal returns of -0.09% and 9.17% respectively. From this finding, it can be concluded that the announcement of mergers and acquisitions made by the bidding firms signals good news for the shareholders of target firms, and consequently, the abnormal return of target firms is very high which reflects their expectation of the benefits of mergers and acquisitions.

The mean abnormal returns for the bidding and target firms are 0.24% and 2.60% respectively. The bidding firms experience the lowest abnormal return of -0.68% three days after the announcement (t=3), and the target firms experience the lowest value of -1.32% two days after the announcement (t=2). In addition, the biggest abnormal return raised by the bidding firms is only 1.04% one day before the announcement (t=1) while the biggest return for the target firms is 9.17% which is the announcement day (t=0).

On the whole, the average abnormal return for the shareholders of target firms is higher than the average abnormal return for the bidding firms, the shareholders of target firms obtaining 2.60% and the shareholder of bidding firms 0.24%. These results support the Hubris hypothesis where target shareholders gain more benefits than the acquiring shareholders surrounding the merger announcement.

Table 6.13. The average abnormal return of bidding and target firms 10 days prior to and 10 days after the announcement. (Market model; n = 81 for bidder and n = 90 for target)

Day	Bidder	Target
-10	-0.06%	-0.51%
-9	-0.09%	-0.86%
-8	0.53%	-0.37%
-7	0.10%	0.02%
-6	-0.60%	-1.04%
-5	0.45%	0.09%
-4	-0.35%	0.28%
-3	0.25%	-0.93%
-2	0.11%	0.63%
-1	1.04%	1.65%
0	-0.09%	9.17%
1	-0.23%	1.98%
2	-0.55%	-1.32%
3	-0.68%	-0.86%
4	0.32%	-0.17%
5	-0.28%	-0.57%
6	0.19%	-1.04%
7	-0.50%	-0.34%
8	0.25%	-1.06%
9	0.06%	-0.78%
10	0.64%	0.28%
Mean	0.02%	0.20%
Minimum	-0.68%	-1.32%
Maximum	1.04%	9.17%

The data in Table 6.14. indicates that the cumulative abnormal return for the bidding firms is higher than that of the target firms from ten days to one day before the announcement of mergers and acquisitions (t=-10 to t=-1). The same result can be found from one day to ten days after the announcement of mergers and acquisitions (t =1 to t= 10) in which the cumulative abnormal return of the bidding firms is also higher than that of the target firms.

The cumulative abnormal return for both the shareholders of bidding and target firms around the announcement days (t=-1 to t=1) is positive, but, the target shareholders experience a much higher cumulative return than the acquiring shareholders. The shareholders of target firms obtain a cumulative abnormal return of 12.80% whereas the shareholders of bidding firms acquire a cumulative abnormal return of only 0.72%. This finding, again, indicates that the target shareholders gain more benefits than the acquiring shareholders surrounding the announcement day of mergers and acquisitions which is consistent with the Hubris hypothesis.

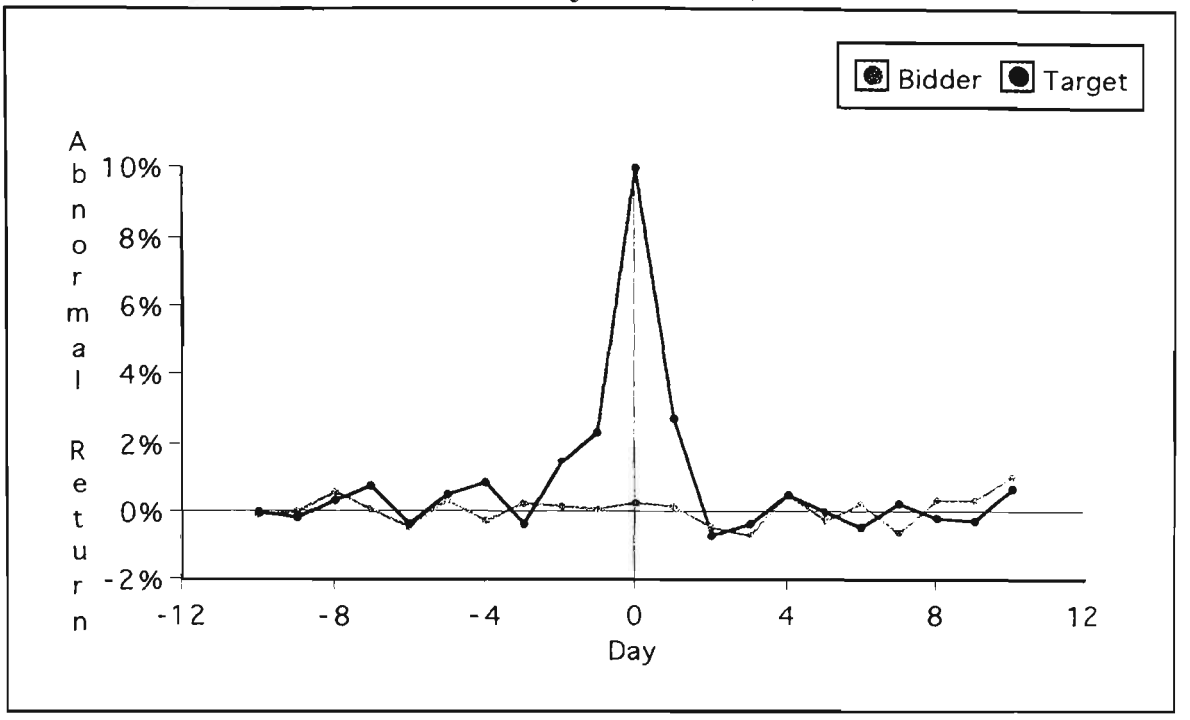
Table 6.14. The various cumulative average abnormal return of bidding and target firms (Market model; n = 81 for bidder and n = 90 for target)

Day	Bidder	Target
-10 to -1	1.37%	-1.05%
-1 to 0	0.95%	10.82%
-1 to 1	0.72%	12.80%
0 to 1	-0.33%	11.15%
1 to 10	-0.78%	-3.86%

6.5.2. Market adjusted model

The graph of abnormal returns of the bidding and target firms in Figure 6.8. shows that the abnormal return for the shareholders of bidding and target firms fluctuates normally before the announcement of mergers and acquisitions. The abnormal return for the target firms begins to increase two days prior to the announcement until the announcement day (t=-2 to t =0). During the announcement day, the abnormal return of target firms is much higher than the abnormal return of bidding firms. After the announcement day, the abnormal return of target firms plummets dramatically until two days later (t=2), after which, the abnormal return of both the bidding and target firms return to normal fluctuation.

Figure 6.8. The average abnormal return of bidding and target firms
10 days prior to and 10 days after the announcement
(Market adjusted model)



The value of the abnormal returns for the bidding and target firms is shown in Table 6.15. On the one hand, the shareholders of bidding firms gain a very low, but positive, abnormal return of 0.27% on the announcement day of mergers and acquisitions (t=0). On the other hand, the shareholders of target firms obtain a high positive abnormal return of 10.08%. This fact implies that the announcement of mergers and acquisitions drives up the target shareholder return much higher than that of the bidding firms.

Table 6.15. also demonstrates that the shareholders of acquiring firms experience an average abnormal return of 0.08% for the 20-day measurement. The highest abnormal return gained by the bidding firms over this period is 0.97% which is ten days after the announcement of mergers and acquisitions (t=10). The lowest value of abnormal return is three days after the announcement day (t=3) with a value of -0.66%.

The average abnormal return for the shareholders of acquired firms show a higher return of 0.85% compared with the acquiring firms. The shareholders of acquired firms experience an abnormal return as low as -0.67% two days after the announcement (t=2). The highest abnormal return obtained by the shareholders of target firms is 10.08% on the

announcement day (t=0). The fact that the average abnormal return for the shareholders of target firms is higher than the average abnormal return of bidding firms suggests that the merger proposal is in favour of the shareholders of target firms rather than the shareholders of bidding firms.

Table 6.15. The average abnormal return of bidding and target firms 10 days prior to and 10 days after the announcement. (Market adjusted model; n = 81 for bidder and n = 90 for target)

Day	Bidder	Target
-10	-0.09%	0.04%
-9	0.01%	-0.18%
-8	0.55%	0.32%
-7	0.09%	0.76%
-6	-0.41%	-0.36%
-5	0.35%	0.51%
-4	-0.25%	0.87%
-3	0.21%	-0.30%
-2	0.18%	1.52%
-1	0.11%	2.31%
0	0.27%	10.08%
1	0.13%	2.77%
2	-0.39%	-0.67%
3	-0.66%	-0.37%
4	0.51%	0.46%
5	-0.22%	0.02%
6	0.23%	-0.45%
7	-0.60%	0.27%
8	0.36%	-0.18%
9	0.30%	-0.26%
10	0.97%	0.67%
Mean	0.08%	0.85%
Minimum	-0.66%	-0.67%
Maximum	0.97%	10.08%

The cumulative abnormal return for the bidding and target firms at Table 6.16. shows that before the announcement of mergers and acquisitions (t=-10 to t=-1), the bidding shareholders have smaller cumulative abnormal returns compared with the target firms. The cumulative abnormal returns for the bidding and target firms are 0.75% and 5.48% respectively. The cumulative abnormal return for the shareholders of target firms are even higher on the days surrounding the announcement of mergers and acquisitions (t=-1 to t =1). From Table 6.16., it can be seen that the target shareholders obtain cumulative abnormal returns as high as 15.16% whereas the shareholders of bidding firms only receive cumulative abnormal returns of 0.51%.

Further, the cumulative abnormal returns after the announcement of mergers and acquisitions are also the same for the target shareholders who gain higher cumulative abnormal returns compared with the bidding shareholders from one day until ten days after the announcement of mergers and acquisitions (t=1 to t=10). The former have cumulative abnormal return of 2.25% and the latter gain cumulative abnormal returns of only 0.61%.

Although the difference in cumulative abnormal returns between the bidding firms and target firms after the announcement day is not as big as the cumulative abnormal returns before the announcement day or during the announcement day, this finding indicates that the merger and acquisition announcement drives up the target wealth effect more than the bidding shareholder.

Table 6.16. The various cumulative average abnormal return of bidding and target firms
(Market adjusted model; n = 81 for bidder and n = 90 for target)

Day	Bidder	Target
-10 to -1	0.75%	5.48%
-1 to 0	0.38%	12.39%
-1 to 1	0.51%	15.16%
0 to 1	0.40%	12.85%
1 to 10	0.61%	2.25%

6.6. Comparison with the previous studies

Table 6.17. shows the results from previous studies about the shareholder wealth effect of mergers and acquisitions which also indicate similar findings to those of this study. Previous studies from Dodd (1980) to Ocana *et.al.* (1997) produce similar findings to this study. Even though those studies were conducted on different models and event windows, they are still comparable with this study because all of them are event studies based.

The results from this study suggests that the CAR for the acquiring firms from both the market model and market adjusted model show small but positive abnormal returns from ten days before the announcement day until ten days after it (t=-10 to t=10). The cumulative abnormal return for the acquired firms is bigger than the cumulative abnormal return of the acquiring firms.

The results of this study have provided support for previous findings which demonstrated that the bidding firms generally earn small, sometimes negative, cumulative abnormal returns, and the shareholders of acquired firms earn significantly large, positive cumulative abnormal returns. Therefore, the study of the effect of mergers and acquisitions on shareholder wealth in this thesis has demonstrated a similar result to those in the previous studies which always put the target shareholders in a better position than the acquiring shareholders.

Table 6.17. The comparison of previous studies on mergers and acquisitions (all of the studies based on event study methods)

Authors	Time Period (days)	Cumulative Abnormal Returns	
		Bidder	Target
Dodd (USA,1980)	-40 to 40	4.99%	21.34%
Eger (USA,1983)	-30 to 20	-0.03%	0.1585%
Bradley, Desai & Kim (USA,1988)	-20 to 80	1.62%	31.28%
Asquith (USA,1983)	-15 to 15	1.5%	15.2%
Asquith, Bruner & Mullins (USA,1983)	-5 to 5	2.6%	17.5%
Dennis and McConnels (USA,1986)	-19 to 20	3.40%	18.63%
Hannan and Wolken (USA,1989)	-15 to 15	-6.09%	14.25%
Baradwaj, Dubofsky & Fraser (USA,1992)	-5 to 5	-0.026	-------
Zhang (USA,1995)	-5 to 5	0.39%	6.96%
Sudarsanam, Holl & Salami (UK,1996)	-20 to 40	-4.04%	29.18%
Grullon, Michaely & Swary (USA,1997)	-1 to 1	-1.93%	9.82%
Ocana, Pena & Robles (Spain,1997)	-60 to 60	---------	41.81%
This study	-10 to 10	0.50%*	4.26%*
		1.63%**	17.81%**

Note :

* market model

** market adjusted model

6.7. Summary

6.7.1. The application of the market model and the market adjusted model

The models employed in this study are methodologically different, and hence, there are some implications for the results generated from the models. In most cases, the results indicate that the market adjusted model produces better abnormal returns for the shareholders of bidding and target firms. Under the market model, the individual firm risk and market risk are taken into account in computing the abnormal return whilst the market adjusted model does not take into account these risks. Due to these differences, the abnormal returns resulting from both models are empirically different.

6.7.2. The bidding firm

The shareholders of bidding firms break even on the day of the announcement of mergers and acquisitions. The market model indicates that the bidding firms generate an abnormal return of -0.09% whilst the market adjusted model indicates an abnormal return of 1.28%.

Before the announcement of mergers and acquisitions, the shareholders of bidding firms enjoy a positive cumulative abnormal return under both models, but, the market adjusted model has a higher return compared with the unadjusted one. The cumulative abnormal return after the announcement of mergers and acquisitions shows a contrasting result. The market model has a negative abnormal return while the market adjusted one has a positive abnormal return.

The average abnormal return for the shareholders of bidding firms based on the market adjusted model is slightly higher than the average abnormal return of bidding firms using the market model. This finding suggests that the market adjusted method indicates a better return for the shareholder of bidding firms.

6.7.3. The target firm

Both models indicate higher abnormal returns for the shareholders of the acquired firms as a result of the announcement of mergers and acquisitions. On the announcement day, the shareholders of target firms gain abnormal returns of 9.17% on market model and 10.08% for the market adjusted model.

There is an interesting effect on results for the shareholders of target firms found between the market model and market adjusted model. The market model generates a negative cumulative abnormal return for target firms both before the announcement and after the announcement of mergers and acquisitions. However, on the market adjusted model the shareholders of target firms obtain a positive cumulative abnormal return both before the announcement and after the announcement of mergers and acquisitions.

On average the shareholders of target firms enjoy a positive abnormal return regardless of the models, but, the market adjusted model generates higher abnormal returns than the market model. This fact, again, suggests that the market adjusted method indicates a better abnormal return for the target firms as well as for the bidding firms.

6.7.4. Comparison of bidding' firms' and target firms' abnormal returns

A comparison of the average abnormal returns for bidding firms and target firms regardless of the model used shows that target shareholders always earn higher abnormal returns in comparison to the shareholders of bidding firms. Additionally, in all of the cases, the market adjusted model indicated higher abnormal returns than the market model for both the bidding shareholders and the target shareholders.

Chapter 7

The Abnormal Return After the Merger Outcome is Known

7.1. Introduction

The announcement of mergers and acquisitions is not the only event which dramatically influences shareholders returns. Another event that also affects shareholders wealth, which is pivotal for the shareholders of both bidding firms and target firms, is the day when the merger result is known to the public and information is available as to whether the bidding firms are acquiring a more than 50% or a less than 50% interest in the target firms.

However, in this chapter we do not investigate the difference in abnormal returns between the acquisitions of more than 50% and less than 50%. These returns will be discussed later in the Chapters 8 and 9. In this chapter, the general abnormal returns after the announcement of mergers and acquisitions will be examined regardless of whether it is more than 50% or less than 50%. The day when the result of mergers and acquisitions is known is defined as day =0 (t=0), and the measurement of abnormal returns after the result is known extends to ten days (t =1 to t =10).

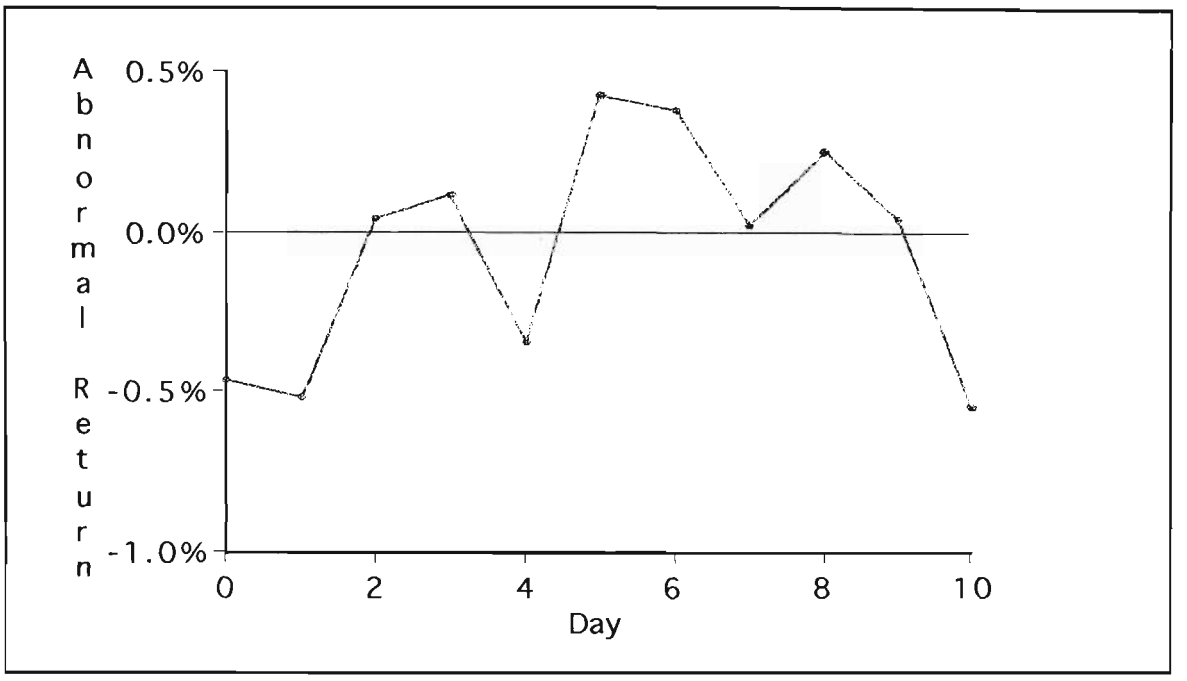
7.2. The bidder's abnormal return

7.2.1. Market model

The chart of abnormal returns for the shareholders of bidding firms can be seen in Figure 7.1. In general, the abnormal return rises and falls in reaction to the merger results. When the outcome is known to the public (t=0), the abnormal return has a negative value, which continues until one day after the result is known (t=1). From then on, the abnormal return fluctuates showing positive and negative levels. This volatility may indicate uncertainty

among the shareholders about the future benefits of mergers and acquisitions. Meanwhile, the highest abnormal return for the shareholders of bidding firms occurs five days after the outcome is known (t=5) and the lowest abnormal return occurs on ten days after the result is known (t=10) which is negative.

Figure 7.1. The average abnormal return of bidding firms
10 days after the result is known
(Market model)



The value of the abnormal return for the shareholders of bidding firms is shown in Table 7.1. On the day when the merger result is announced, the shareholders of bidding firms gain a negative return of -0.47%. This may indicate to shareholders that the announcement of merger results contains negative information for the shareholders. This negative sentiment continues over the 10-day measurement when the shareholders of bidding firms experience a small negative average abnormal return of -0.05%.

The highest abnormal return for the shareholders of bidding firms is 0.42% (t=5) which is relatively very low even though its value is positive, and the lowest value of the bidding abnormal return is -0.54% which occurs ten days after the merger announcement (t=10). Further, the cumulative abnormal return for the shareholders of bidding firms shows that from the announcement of merger results until ten days later (t=0 to t=10), the cumulative abnormal return is -0.59%. The lowest cumulative abnormal return is -

1.17% four days after the announcement of merger results (t=4), and the highest cumulative abnormal return is -0.04% nine days after the announcement (t=9).

Based on these result, we can conclude that the shareholders of bidding firms experience small negative abnormal returns after the merger result is known. This also demonstrates that the announcement of merger results is not received positively.

Table 7.1. The average abnormal return of bidding firms
10 days after the merger result is known.
(Market model; n = 81)

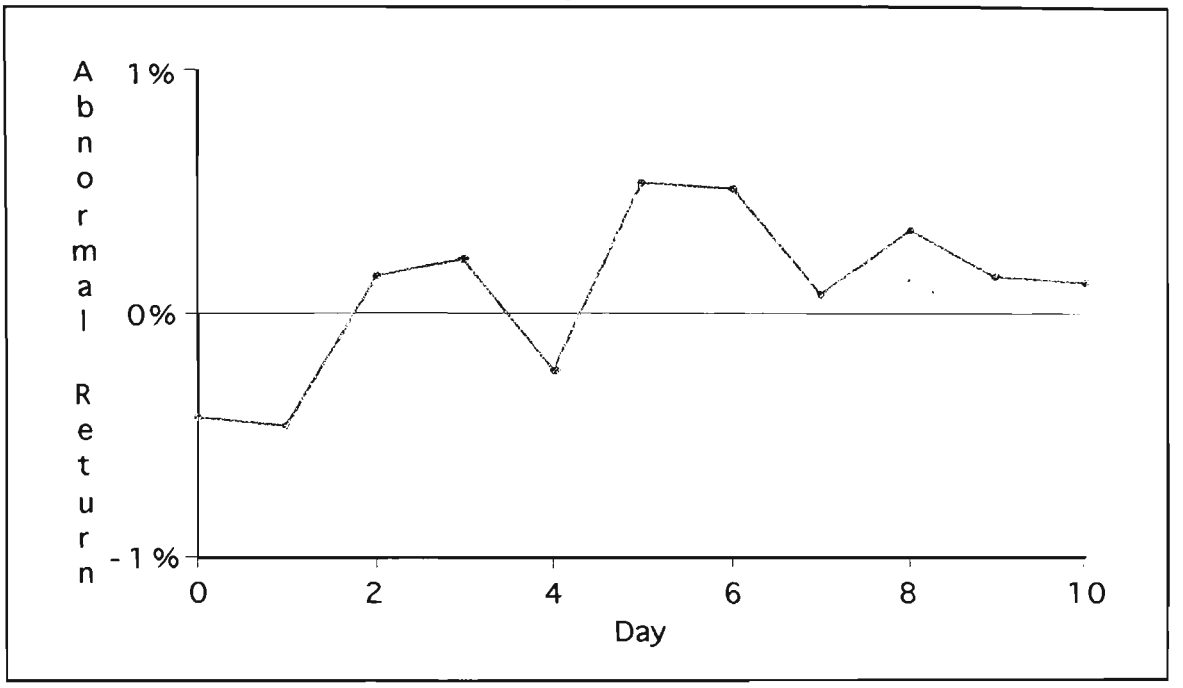
Day	Abnormal Return	Cumulative A R
0	-0.47%	-0.47%
1	-0.52%	-0.99%
2	0.04%	-0.94%
3	0.12%	-0.82%
4	-0.35%	-1.17%
5	0.42%	-0.74%
6	0.38%	-0.36%
7	0.02%	-0.34%
8	0.25%	-0.09%
9	0.05%	-0.04%
10	-0.54%	-0.59%
Mean	-0.05%	-0.60%
Minimum	-0.54%	-1.17%
Maximum	0.42%	-0.04%

7.2.2. Market adjusted model

From Figure 7.2., it is evident that the shareholders of bidding firms receive a negative value when the merger outcome is announced (t=0). This decreases until two days after the announcement of the result (t=2). Thus, the abnormal return increases and decreases from three days to ten days after the result is known (t =3 to t=10). However, from five days to ten days after the result is known (t=5 to t=10), the abnormal return of bidding firms

moves above the positive line, but, this abnormal return tends to fall which indicates that the effect of the announcement of merger results is reducing.

Figure 7.2. The average abnormal return of bidding firms
10 days after the result is known
(Market adjusted model)



The value of abnormal returns and cumulative abnormal returns of bidding firms can be seen in Table 7.2. When the merger result is announced, the shareholders of bidding firms experience an abnormal return of -0.41%. The announcement of merger results is not received positively by the shareholders of bidding firms.

Nevertheless, the shareholders of bidding firms enjoy a positive average abnormal return of 0.10% for the 10-day measurement although they suffer an abnormal loss on the announcement day of merger outcomes. The abnormal return reaches the highest value of 0.55% five days after the merger result is known (t=5), and the lowest of -0.45% one day after the merger result is known (t=2). The cumulative abnormal return of bidding firms for the 10-day measurement is 1.11% with a mean of 0.04%. In general, these results indicate that the shareholders of bidding firms experience little gain after the merger outcome is announced.

Table 7.2. The average abnormal return of bidding firms
10 days after the merger result is known.
(Market adjusted model; n = 81)

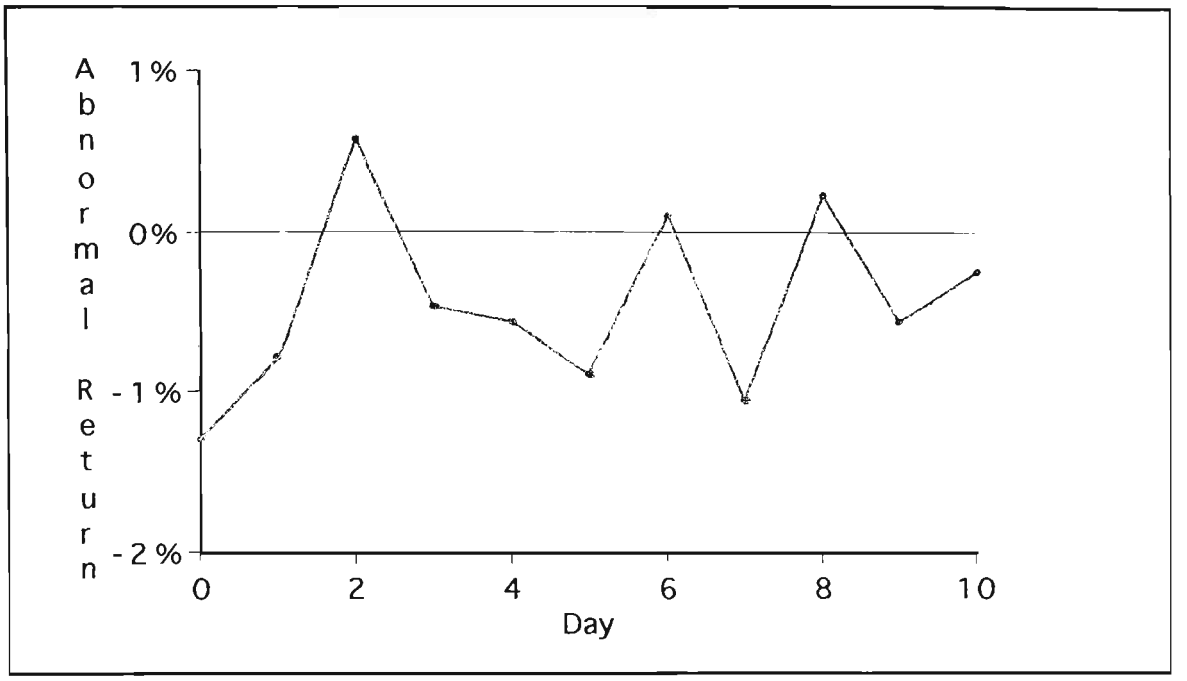
Day	Abnormal Return	Cumulative A R
0	-0.41%	-0.41%
1	-0.45%	-0.87%
2	0.16%	-0.71%
3	0.24%	-0.47%
4	-0.22%	-0.69%
5	0.55%	-0.14%
6	0.52%	0.38%
7	0.09%	0.46%
8	0.36%	0.82%
9	0.16%	0.98%
10	0.14%	1.11%
Mean	0.10%	0.04%
Minimum	-0.45%	-0.87%
Maximum	0.55%	1.11%

7.3. The target firms' abnormal return

7.3.1. Market model

In Figure 7.3. when the merger result is announced (t=0), the abnormal return of target firms is negative. This means that the announcement of merger results will be treated as bad news for the shareholders of target firms. However, the abnormal return rises from one day until two days after the result announcement (t=1 to t=2), and there after, the abnormal returns of target firms fluctuate around zero, with most returns falling below zero.

Figure 7.3. The average abnormal return of target firms
10 days after the result is known
(Market model)



The value of the abnormal returns of target firms is shown in Table 7.3. The announcement of merger outcomes results in a negative abnormal return for the target firms. The shareholders of target firms gain a negative abnormal return of -1.30% on this day (t=0) which indicates that shareholders of target firms are expressing negative sentiment as a result of the announcement of merger outcomes whether the benefits of mergers and acquisitions have ended.

The data in Table 7.3. also indicates that the target firms gain a negative abnormal return on average, that is, -0.45%. Further, the cumulative abnormal return tends to decrease gradually from one day until ten days (t=1 to t=10) where it has a cumulative value of -4.91% on the last day of the measurement. This finding demonstrates that the shareholders of target firms suffer a big loss as a result of the announcement of merger results regardless of whether the acquisition is more than 50% or less than 50%.

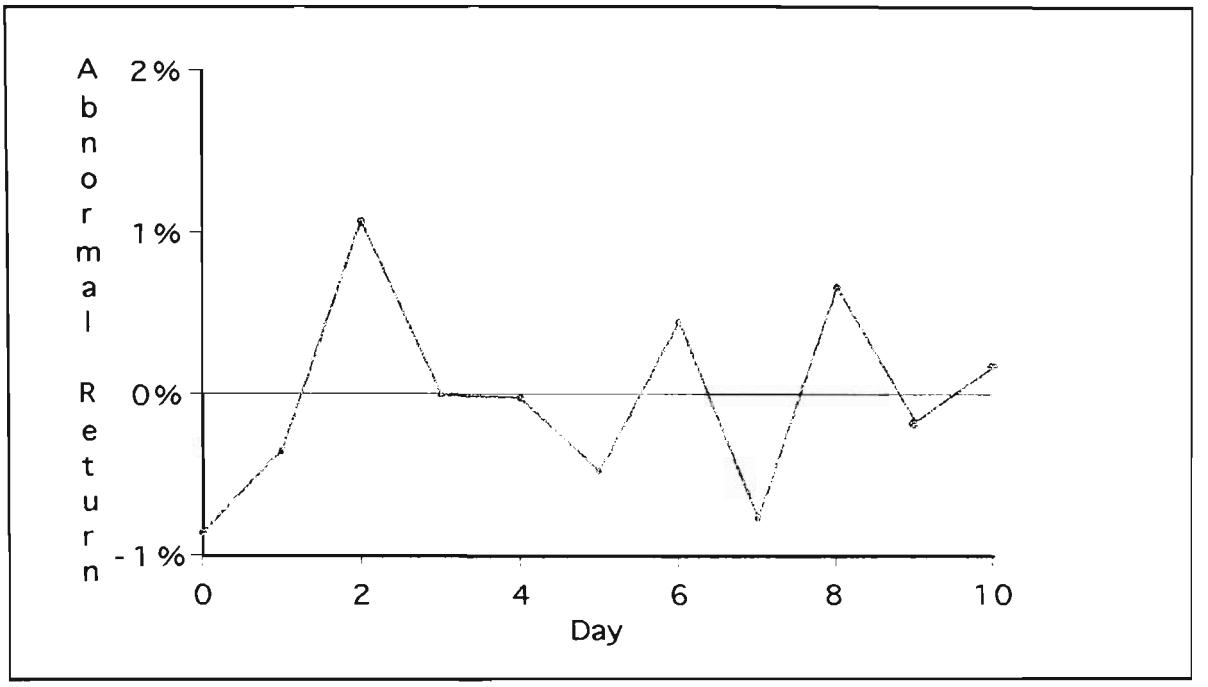
Table 7.3. The average abnormal return of target firms
10 days after the merger result is known.
(Market model; n = 90)

Day	Abnormal Return	Cumulative A R
0	-1.30%	-1.30%
1	-0.78%	-2.08%
2	0.58%	-1.50%
3	-0.46%	-1.96%
4	-0.56%	-2.52%
5	-0.90%	-3.42%
6	0.12%	-3.42%
7	-1.06%	-4.35%
8	0.23%	-4.12%
9	-0.55%	-4.67%
10	-0.24%	-4.91%
Mean	-0.45%	-3.10%
Minimum	-1.30%	-4.91%
Maximum	0.58%	-1.30%

7.3.2. Market adjusted model

The announcement of merger results is considered negatively by shareholders of target firms. In Figure 7.4., it is obvious that the abnormal return is at a negative level when the announcement is made. For the rest of the period, the abnormal return for the shareholders of target firms fluctuates sharply moving above and below the zero line indicating uncertainty amongst the target shareholders about the future prospects of their firms and whether these will move in the desired direction.

Figure 7.4. The average abnormal return of target firms
10 days after the result is known
(Market adjusted model)



The actual value of target abnormal returns can be seen in Table 7.4. The target shareholders gain a negative abnormal return of -0.85% on the announcement day (t=0) which is also the lowest abnormal return received during the period of measurement. Nevertheless, the shareholders of target firms obtain a positive abnormal return of 1.07% two days after the announcement (t=2) which is the highest abnormal return during those days.

The cumulative abnormal return for the shareholders of target firms during the period of ten days is also negative at -0.18% which again demonstrate that the shareholders of target firms suffer an abnormal loss after the merger outcome is announced to public.

Table 7.4. The average abnormal return of target firms
10 days after the merger result is known.
(Market adjusted model; n = 90)

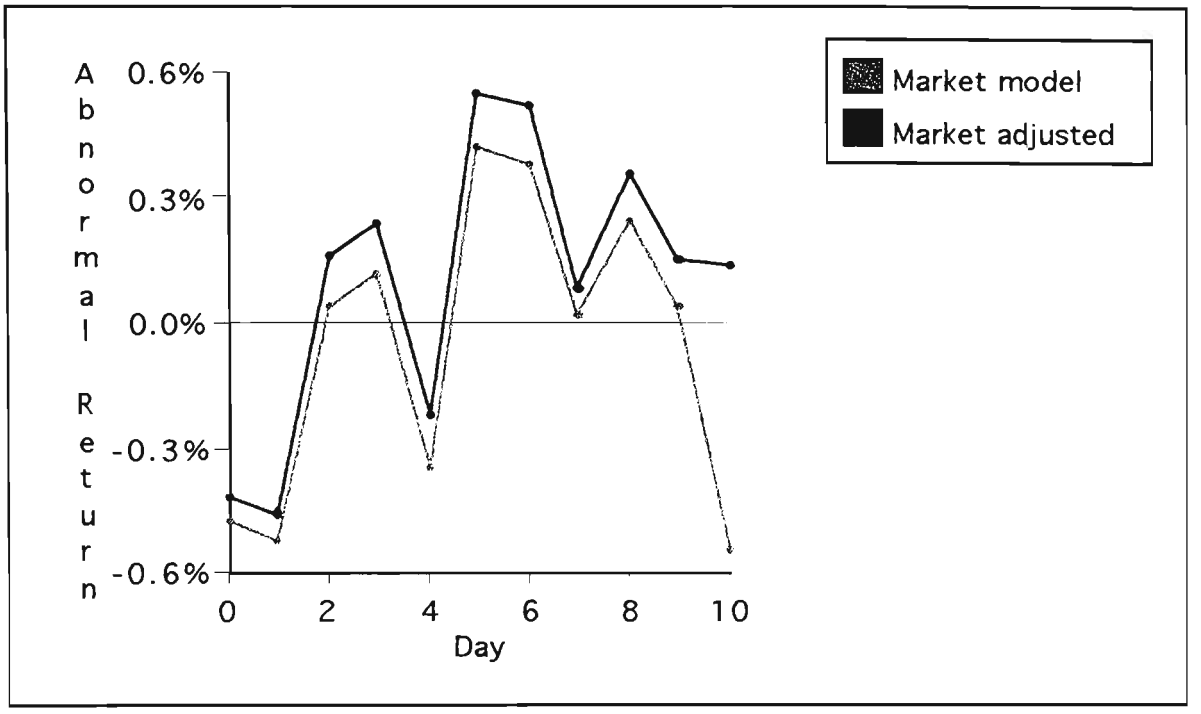
Day	Abnormal Return	Cumulative A R
0	-0.85%	-0.85%
1	-0.34%	-1.19%
2	1.07%	-0.12%
3	0.00%	-0.12%
4	-0.01%	-0.13%
5	-0.46%	-0.59%
6	0.46%	-0.13%
7	-0.75%	-0.88%
8	0.69%	-0.20%
9	-0.17%	-0.36%
10	0.18%	-0.18%
Mean	-0.02%	-0.43%
Minimum	-0.85%	-1.19%
Maximum	1.07%	-0.12%

7.4. Comparison of the abnormal returns of the two models

7.4.1. The bidder's abnormal return

Figure 7.5. shows the charts of abnormal returns for the bidding firms based on the market model and the market adjusted model. The market model and market adjusted model of abnormal returns for the shareholders of bidding firms accelerate in the same direction during the period of the 10-day measurement. Even though the two models fluctuate in the same direction, the abnormal return of bidding firms based on the market adjusted model generates higher abnormal returns than the market model.

Figure 7.5. The average abnormal return of bidding firms
10 days after the result is known
(Market model and market adjusted model)



In Table 7.5., we see that both models generate negative abnormal returns of -0.47% and -0.41% respectively on the announcement day of merger results. Overall, the market adjusted model produces higher abnormal returns than the market model for the bidding shareholders. The average abnormal return for the shareholders of bidding firms is -0.05% for the market model which is lower compared to the market adjusted model whose average abnormal return is 0.10%. These figures, again, demonstrate that the market adjusted model generates a better result for the shareholders of bidding firms.

Table 7.5. The average abnormal return of bidding firms
10 days after the merger result is known.
(Market model and market adjusted model; n = 81)

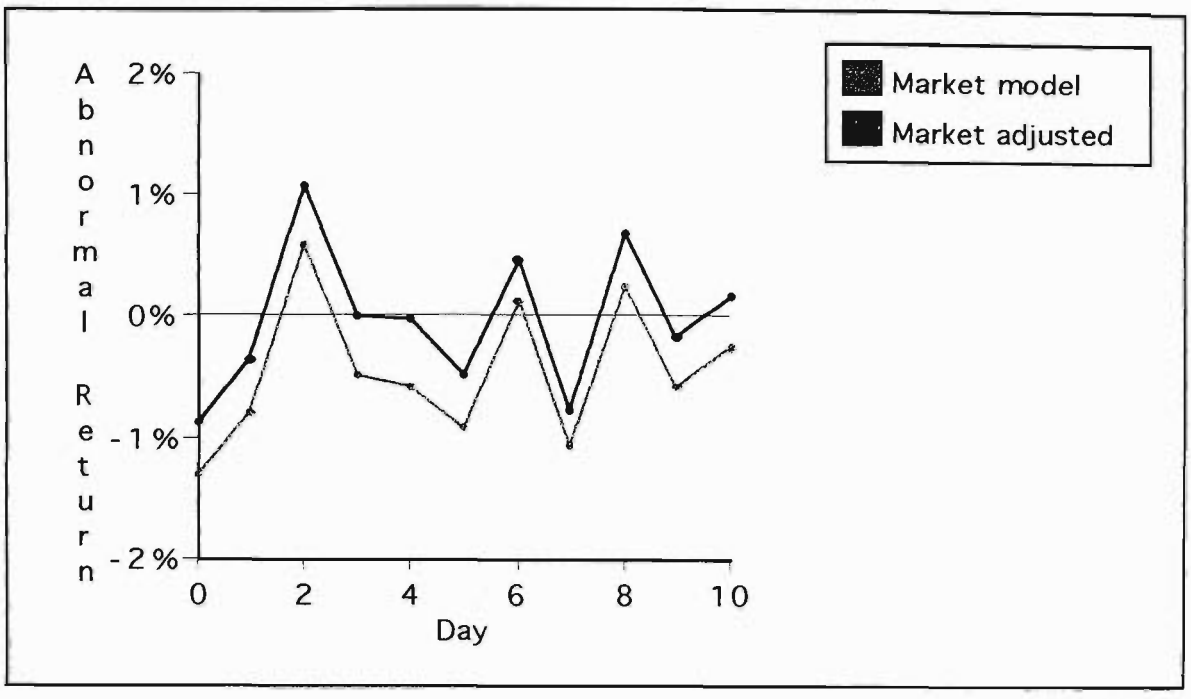
Day	Market model	Market adjusted
0	-0.47%	-0.41%
1	-0.52%	-0.45%
2	0.04%	0.16%
3	0.12%	0.24%
4	-0.35%	-0.22%
5	0.42%	0.55%
6	0.38%	0.52%
7	0.02%	0.09%
8	0.25%	0.36%
9	0.05%	0.16%
10	-0.54%	0.14%
Mean	-0.05%	0.10%
Minimum	-0.54%	-0.45%
Maximum	0.42%	0.55%

7.4.2. The target's abnormal return

Figure 7.6. shows the graphs of abnormal returns for the market model and market adjusted model for target firms. Both models indicate that the abnormal return of target firms is negative when the merger outcome is known. After the merger result is known, the abnormal returns accelerate to reach the highest abnormal return on the following day (t=2).

Like the abnormal return of bidding firms on the two models, the abnormal return of target firms also moves in the same direction. When the market model of abnormal returns rises, it is followed by the market adjusted model, and where the chart of market model falls, the market adjusted line also falls in the same direction.

Figure 7.6. The average abnormal return of target firms
10 days after the result is known
(Market model and market adjusted model)



The comparative results in Table 7.6. show that on the announcement day of merger result, the market adjusted model gains an abnormal return of -0.85% whereas the market model gains -1.30%. Further, the market adjusted model, on average, produces better returns than the market model. The data indicates that the mean abnormal return of the market adjusted model is -0.02% which is higher than the market model that only generates an average abnormal return of -0.45%.

Table 7.6. The average abnormal return of target firms
10 days after the merger result is known.
(Market model and market adjusted model; n = 90)

Day	Market model	Market adjusted
0	-1.30%	-0.85%
1	-0.78%	-0.34%
2	0.58%	1.07%
3	-0.46%	0.00%
4	-0.56%	-0.01%
5	-0.90%	-0.46%
6	0.12%	0.46%
7	-1.06%	-0.75%
8	0.23%	0.69%
9	-0.55%	-0.17%
10	-0.24%	0.18%
Mean	-0.45%	-0.02%
Minimum	-1.30%	-0.85%
Maximum	0.58%	1.07%

7.5. Comparison of abnormal returns of the bidder and target firms

7.5.1. Market model

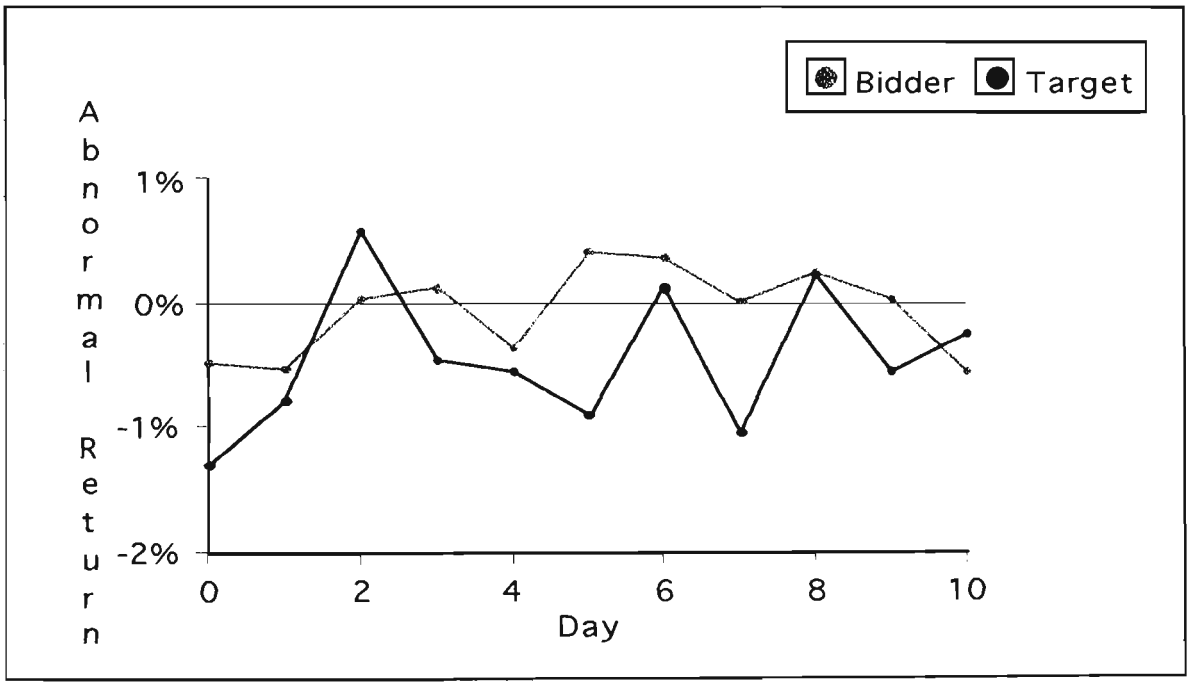
The graphs presented in Figure 7.7. are the abnormal return for the shareholders of the bidding and target firms. When the merger result is known, the shareholders of bidding firms obtain a better abnormal return than the shareholders of target firms even though the abnormal returns raised by both firms are negative. It seems that the shareholders of the bidding and target firms view the announcement of merger results negatively.

For the period of 10-day returns, the chart of bidding firms shows a better result and looks more stable than that of the target firms. The shareholders of bidding firms gain more positive abnormal returns on a day-to-day basis compared with the target firms. Unlike the bidding firms, the chart of target firms is more volatile. The chart shows that the abnormal

return line mostly moves on the negative level, and accordingly, the shareholders of target firms gain negative results on day-to-day abnormal returns.

Comparing these two graphs, it can be argued that the outlook for the shareholders of bidding firms appears more stable than the outlook confronting the shareholders of target firms on the announcement of merger outcomes. The prospects for the latter might be more optimistic if they could look forward to future benefits from merger results. Meanwhile, the shareholders of target firms may face uncertainty about the future benefits after a merger takes place as already reflected in the volatility of the target abnormal return chart.

Figure 7.7. The average abnormal return of bidding and target firms
10 days after the result is known
(Market model)



The data presented in Table 7.7. indicates that the shareholders of bidding firms gain an abnormal return of -0.47% whilst the shareholders of target firms obtain an abnormal return of -1.30% on the announcement day of merger results (t=0). Both firms receive negative abnormal returns on the announcement day, but, the shareholders of biding firms have a slightly better gain than the shareholders of target firms.

Further, the average abnormal return of bidding firms is -0.05% which is slightly better than the target firms whose average return is -0.45%. Also, the bidding firm has a better

cumulative abnormal return of -0.59% than the target firm which has a cumulative abnormal return of -4.91%.

The difference of cumulative abnormal returns between the bidding and target firms is quite significant even though these returns are negative. This finding indicates that the shareholders of the bidding and target firms suffer form the announcement of merger results, both shareholders experience capital losses after the merger result is announced. However, the shareholders of target firms suffer a bigger loss than the shareholders of bidding firms.

Table 7.7. The average abnormal return of bidding and target firms
10 days after the merger result is known.
(Market model; n = 81 for bidder and n = 90 for target)

Day	Bidder	Target
0	-0.47%	-1.30%
1	-0.52%	-0.78%
2	0.04%	0.58%
3	0.12%	-0.46%
4	-0.35%	-0.56%
5	0.42%	-0.90%
6	0.38%	0.12%
7	0.02%	-1.06%
8	0.25%	0.23%
9	0.05%	-0.55%
10	-0.54%	-0.24%
C A R	-0.59%	-4.91%
Mean	-0.05%	-0.45%
Minimum	-0.54%	-1.30%
Maximum	0.42%	0.58%

7.5.2. Market adjusted model

Figure 7.8. presents the graphs of abnormal returns of bidding and target firms based on the market adjusted model. When the merger outcome is announced, the shareholders of bidding firms gain a better abnormal return than the shareholders of target firms although both receive negative abnormal returns.

After the announcement of merger results (t=1 to t=10), the chart of bidding firms is more stable than that of the target firms. The chart of the target firms is more volatile due to uncertainty about the future prospects of the target firms. Additionally, the chart of bidding firms mostly remains above the zero line which means that bidding firms gain more positive abnormal returns than target firms.

Figure 7.8. The average abnormal return of bidding and target firms
10 days after the result is known
(Market adjusted model)

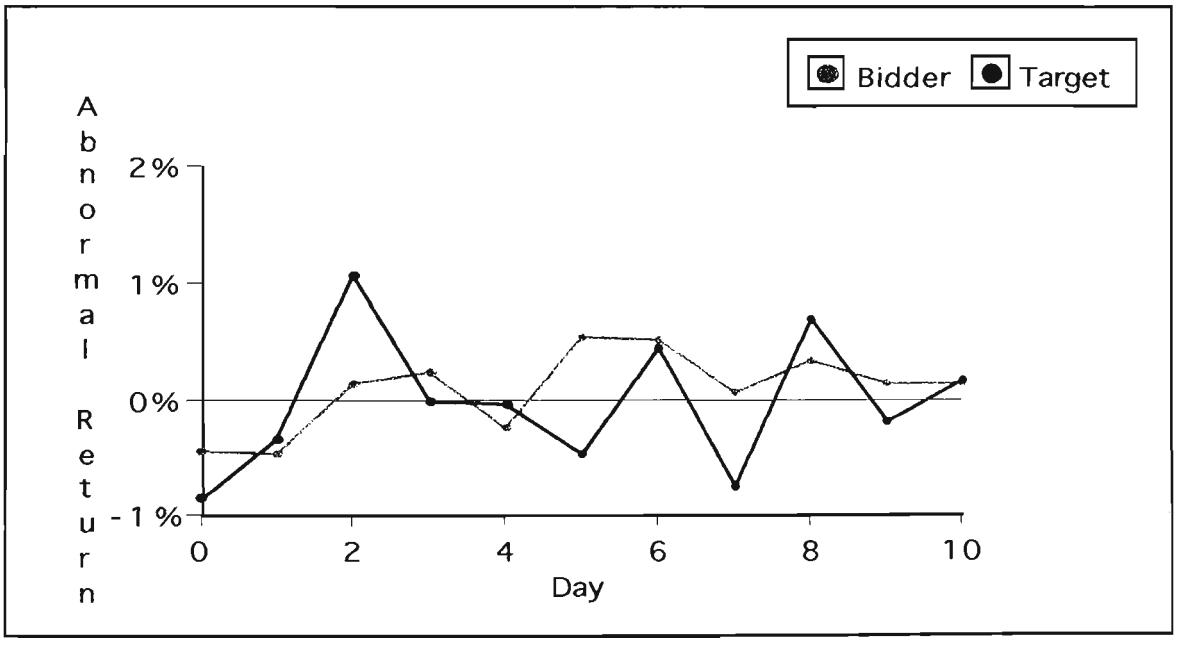


Table 7.8. presents the value of abnormal returns of bidding and target firms based on a daily basis. The average abnormal return of target firms is slightly higher than that of the bidding firms, that is, 0.59% and -0.34% respectively. Nevertheless, the cumulative abnormal return of bidding firms at 1.11% is actually larger than target firms whose cumulative abnormal return is -0.18%. These results, again, demonstrate that the shareholders of bidding firms benefit from the announcement of merger outcomes while the

target shareholders suffer a small cumulative abnormal loss.

Table 7.8. The average abnormal return of bidding and target firms
10 days after the merger result is known.
(Market adjusted model; n = 81 for bidder and n = 90 for target)

Day	Bidder	Target
0	-0.41%	-0.85%
1	-0.45%	-0.34%
2	0.16%	1.07%
3	0.24%	0.00%
4	-0.22%	-0.01%
5	0.55%	-0.46%
6	0.52%	0.46%
7	0.09%	-0.75%
8	0.36%	0.69%
9	0.16%	-0.17%
10	0.14%	0.18%
C A R	1.11%	-0.18%
Mean	0.34%	0.59%
Minimum	-0.45%	-0.85%
Maximum	0.55%	1.07%

7.6. Comparison with the previous studies

Only two studies investigate the shareholder wealth effect after the outcome of mergers and acquisitions is reported in the literature, they are Dodd (1980) and Asquith (1983).

The study by Dodd indicates that the shareholders of target firms gain a small but positive abnormal return of 0.08% on the day when the target shareholders approve the merger proposal, and the shareholders of bidding firms suffer an abnormal loss of -0.23% on the same day. However, the bidding shareholders gain a cumulative abnormal return of 1.57% thirty five days later (t=0 to t=35) after the merger proposal is approved.

The finding by Asquith shows that on the day when the result of mergers and acquisition is

known by the public (t=0), the acquiring firms gain a small but positive abnormal return of 0.2% while the acquired firms earn an abnormal return of 0.9%. However, the acquiring firms finally suffer a cumulative abnormal loss of -7.2% at the time of the announcement day of merger outcome until 240 days later (t=0 to t=240).

These results differ from this study in which both the bidding and target firms earn a negative abnormal return on the announcement day of merger outcomes (t=0). The bidding firm suffers abnormal losses of -0.47% on the market model and -0.41% on market adjusted model. The target shareholders suffer more losses with abnormal losses of -1.30% and -0.85% respectively. The cumulative abnormal returns from the announcement day of the outcome until ten days later (t=0 to t=10) also indicate small negative abnormal returns for the shareholders of bidding and target firms. One important thing from this comparison is that under the two previous studies, the target firms obtain better abnormal returns than the bidding firms but this study shows contrasting findings in which the target firms suffer more losses compared with the bidding firm.

7.7. Summary

7.7.1. The bidder's abnormal return

The shareholders of bidding firms experience a small negative abnormal return when the merger result is announced to the public regardless of the models employed. The market model generates an abnormal return of -0.47% while the market adjusted model generates an abnormal return of -0.41%.

The average abnormal return for the shareholders of bidding firms shows different results under the two models. The market adjusted model produces an average return of 0.10% whereas the market model produces an average return of -0.05% for the period of measurement. This finding suggests that under the market adjusted model, the shareholders of bidding firms gain better results. Another important fact from these findings is that the abnormal return of bidding firms under both models accelerates together in the same direction after the merger result is announced.

7.7.2. The target's abnormal return

The shareholders of target firms display negative abnormal returns after the merger outcome is known to the public. Under the market model and market adjusted model, the shareholders of target firms suffer negative small abnormal returns of -1.30% and -0.85% respectively. Importantly, the average abnormal return of target firms is also negative during the period of measurement. However, the market adjusted model generates a better than average return of -0.02% whereas the market model generates an average return of -0.45%. These results conclude that the market adjusted model provides a better abnormal return to the shareholders of target firms.

Furthermore, the chart of abnormal returns of target firms under both models also move in the same direction after the merger result is announced. This fact indicates that when the abnormal return under one model is rising, it is followed by the other one, and also when the abnormal return is falling, the other model follows.

7.7.3. Comparison of abnormal returns of the bidder and target firms

The shareholders of bidding firms gain better abnormal returns compared with the shareholders of target firms when the merger result is announced. The two models demonstrate that bidding firms outperform target firms.

The shareholders of bidding firms also gain better cumulative abnormal returns under both models. The market model produces a cumulative abnormal return of -0.59% for bidder and -4.91% for target firms. Under the market adjusted model, the bidding firms obtain a cumulative abnormal return of 1.11% while the target firms lose -0.18%. Therefore, we can conclude that the shareholders of bidding firms experience a little gain following the announcement of merger outcomes while the shareholders of target firms suffer a little loss.

Chapter 8

The Abnormal Return
For Acquisition of More Than 50%

8.1. Introduction

The last chapter demonstrated that shareholders of acquiring firms experience a better abnormal return compared with shareholders of target firms regardless of whether the acquisition is of more than 50% or less than 50%. The next question is whether there are different abnormal returns for both shareholders if we separate the abnormal returns for acquisition of more than 50% from acquisition of less than 50%.

In this chapter, the abnormal return for the shareholders of bidding and target firms will be estimated when there is an acquisition of more than 50%. The day when the outcome of mergers and acquisitions is known will be formulated as day=0 (t=0), and the measurement of abnormal returns will have a period of ten days from the announcement of merger results (t=1 to t=10).

8.2. The bidder's abnormal return

8.2.1. Market model

Figure 8.1. shows the graph of abnormal returns for the shareholders of bidding firms who acquire more than 50% of interests of target firms. When the result is known to the public that the bidding firm has acquired more than 50% of target shares (t=0), the shareholders of bidding firms experience a negative abnormal return.

For the period of ten days after the merger result is known (t=1 to t=10), the graph demonstrates that the abnormal return of acquiring firms rises and falls sharply, which may indicate uncertainty about the future direction of the bidding firms after they takeover more

than a 50% interests in target firms.

Figure 8.1. The average abnormal return of bidding firms
for acquisition of more than 50%
(Market model)

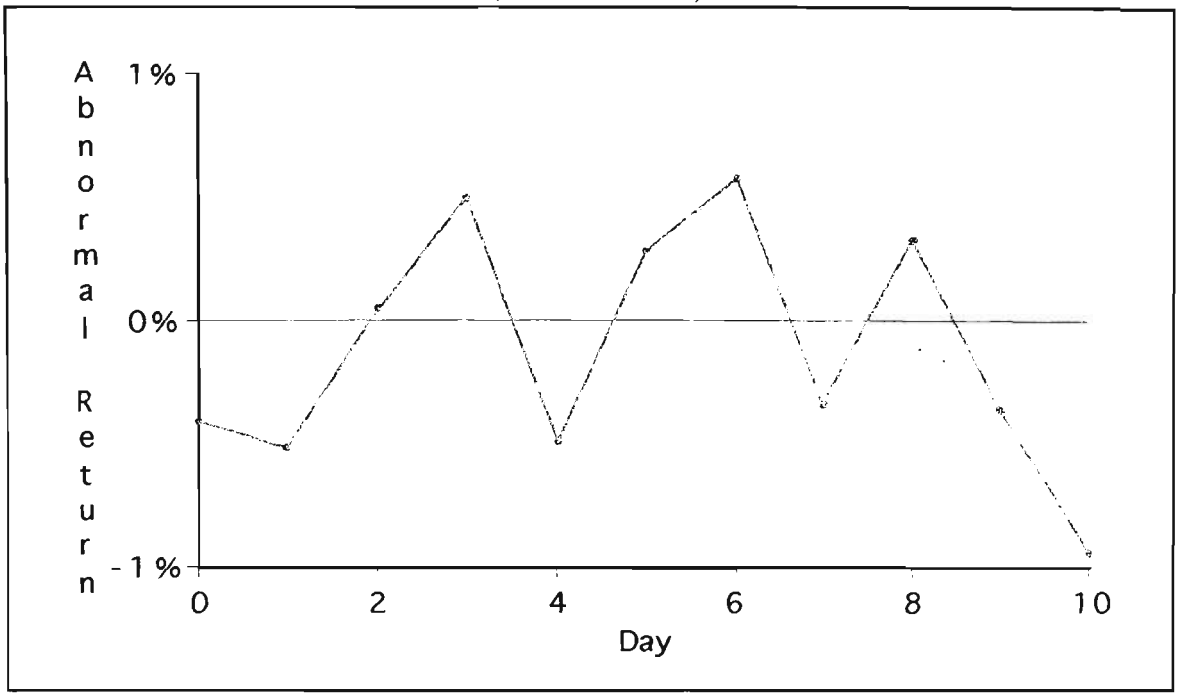


Table 8.1. presents the value of abnormal return for the bidding firms for the period of ten days after the merger result is known to be more than 50%. The shareholders of bidding firms gain a negative abnormal return of -0.40% following the announcement of merger results (t=0). The average abnormal return is -0.12% which means that the acquiring firms suffer a small loss after the merger result is announced.

The aggregate abnormal return for the shareholders of bidding firms also demonstrates a negative return. The acquiring firms also experience a negative cumulative abnormal return of -1.31% which is significant enough to justify the view that shareholders of acquiring firms suffers an abnormal loss even though they take over more than 50% of target interests.

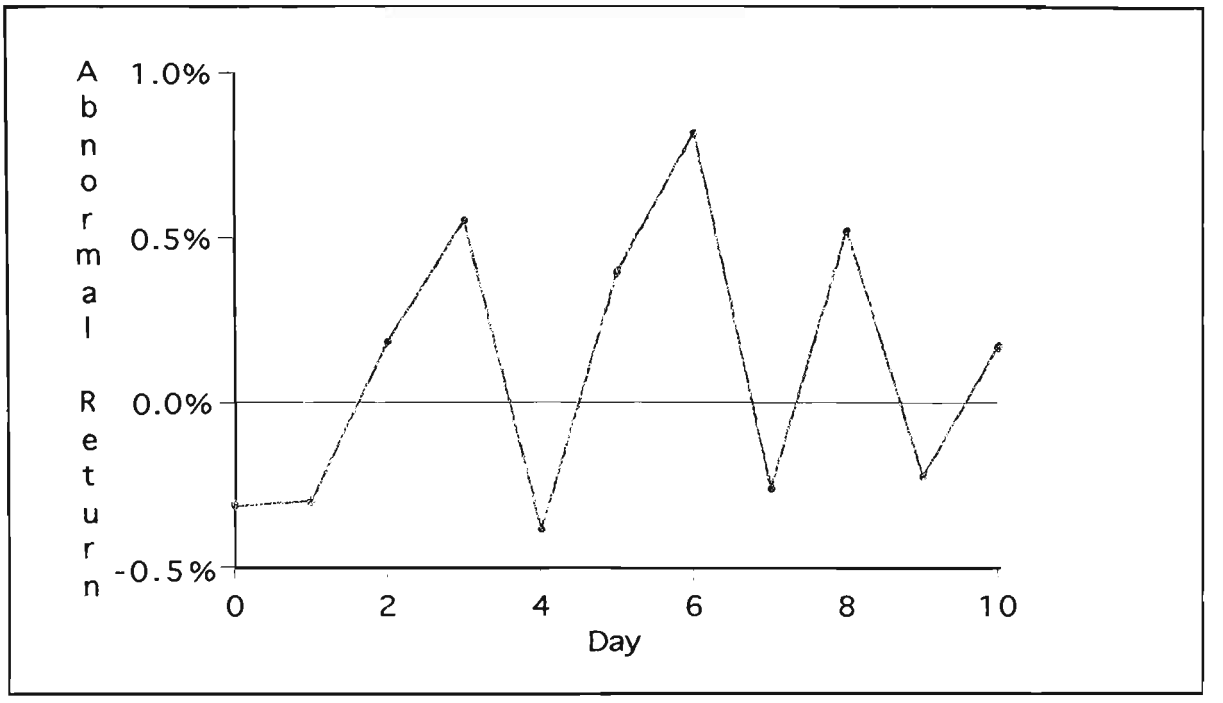
Table 8.1. The average abnormal return of bidding firms
for acquisition of more than 50%
(Market model; n = 44)

Day	Abnormal Return	Cumulative A R
0	-0.40%	-0.40%
1	-0.52%	-0.93%
2	0.05%	-0.87%
3	0.49%	-0.38%
4	-0.50%	-0.88%
5	0.28%	-0.60%
6	0.59%	-0.01%
7	-0.33%	-0.34%
8	0.34%	-0.01%
9	-0.35%	-0.36%
10	-0.95%	-1.31%
Mean	-0.12%	-0.55%
Minimum	-0.95%	-1.31%
Maximum	0.59%	-0.01%

8.2.2. Market adjusted model

The announcement of merger outcomes of more than 50% signals negative news to the shareholders of bidding firms. On the day the news is broken (t=0), the bidding firms earn a negative return as seen in Figure 8.2. For a period of 10 days, the chart shows that the abnormal return rises and falls sharply. This volatility indicates that the acquisition of more than 50% results in uncertainty among the shareholders of bidding firms about the future profit of their firms.

Figure 8.2. The average abnormal return of bidding firms
for acquisition of more than 50%
(Market adjusted model)



The value of abnormal returns presented in Table 8.2. shows that although the bidding firms suffer a negative abnormal return of -0.30% on the announcement day, on average the shareholders of bidding firms earn a positive but small abnormal return for the period of 10 days of 0.11%. Further, the cumulative abnormal return for the 10-day period is positive where shareholders of bidding firms earn 1.21%. This finding suggests that the shareholders of acquiring firms earn a positive but small aggregate abnormal return when they acquire more than 50% of the stakes of target firms.

Table 8.2. The average abnormal return of bidding firms
for acquisition of more than 50%
(Market adjusted model; n = 44)

Day	Abnormal Return	Cumulative A R
0	-0.30%	-0.30%
1	-0.30%	-0.60%
2	0.18%	-0.41%
3	0.56%	0.14%
4	-0.38%	-0.24%
5	0.39%	0.16%
6	0.83%	0.99%
7	-0.26%	0.73%
8	0.53%	1.26%
9	-0.23%	1.03%
10	0.18%	1.21%
Mean	0.11%	0.36%
Minimum	-0.38%	-0.60%
Maximum	0.83%	1.26%

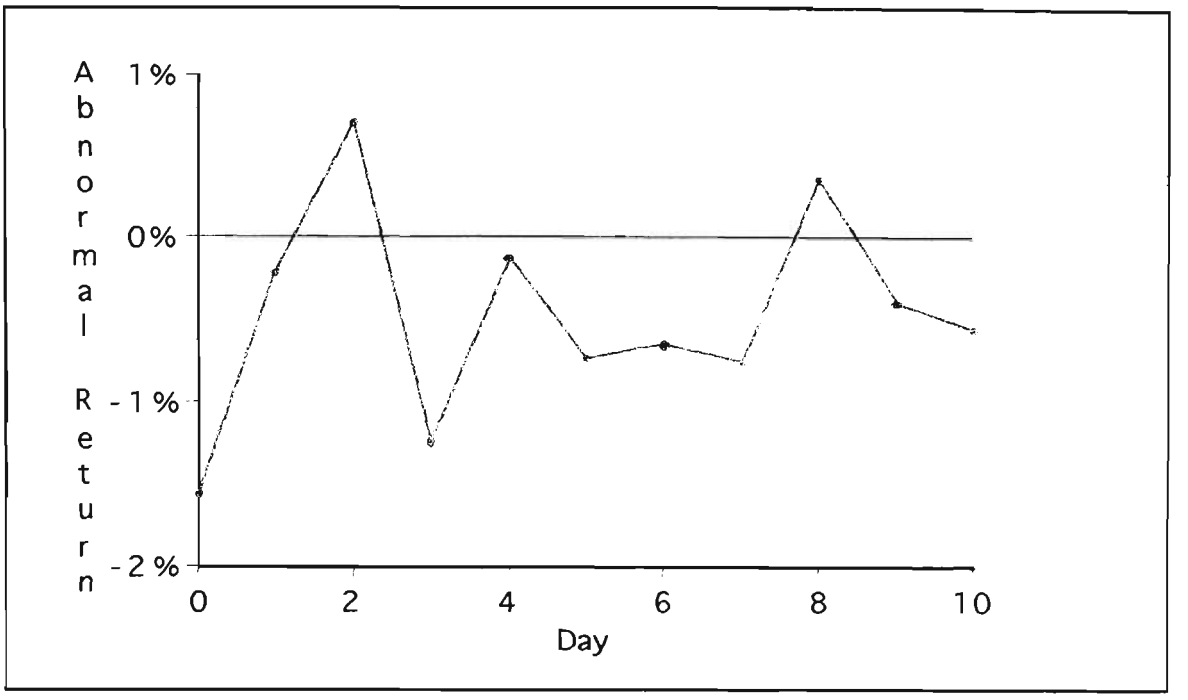
8.3. The target firms' abnormal return

8.3.1. Market model

The graphs in Figure 8.3., presents the abnormal return of target firms for acquisition of more than 50%. The shareholders of target firms suffer a loss on the announcement day of merger results when the bidding firms acquire more than 50% of target shares.

The abnormal return increases after the announcement day (t=1) when it reaches its highest level two days after the announcement (t=2). After that, the target abnormal return tends to move below zero indicating that the shareholders of target firms earn negative returns over the period of measurement.

Figure 8.3. The average abnormal return of target firms
for acquisition of more than 50%
(Market model)



The value of abnormal returns presented in Table 8.3. shows that the target shareholders suffer a loss of -1.56% when the merger result is announced. The average abnormal return for the shareholders of target firms is also negative at -0.46%. Importantly, the cumulative abnormal returns also show negative values during this period of time. The shareholders of target firms suffer an aggregate loss of -5.10% for the 10 day period which implies that the announcement of merger results generates negative abnormal returns for target shareholders.

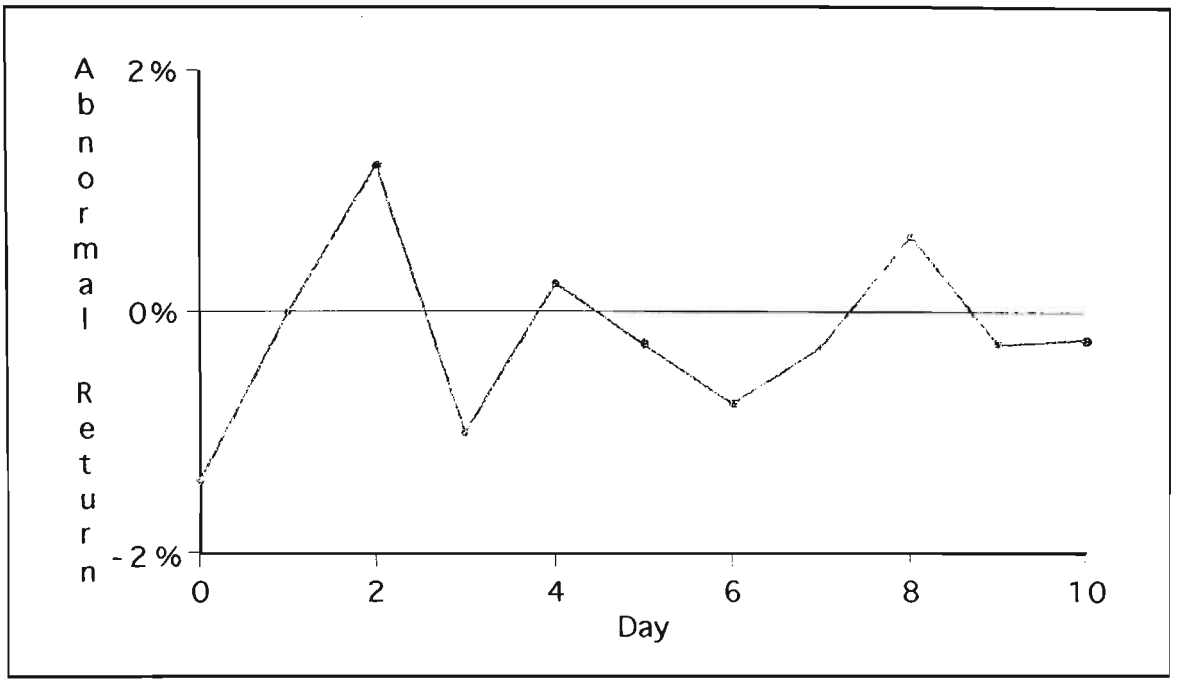
Table 8.3. The average abnormal return of target firms
for acquisition of more than 50%
(Market model; n = 48)

Day	Abnormal Return	Cumulative A R
0	-1.56%	-1.56%
1	-0.21%	-1.77%
2	0.71%	-1.06%
3	-1.24%	-2.30%
4	-0.12%	-2.41%
5	-0.72%	-3.14%
6	-0.65%	-3.78%
7	-0.74%	-4.52%
8	0.37%	-4.15%
9	-0.38%	-4.53%
10	-0.56%	-5.10%
Mean	-0.46%	-3.12%
Minimum	-1.56%	-5.10%
Maximum	0.71%	-1.06%

8.3.2. Market adjusted model

The graph of abnormal returns at Figure 8.4. represents the market adjusted model for target firms for acquisition of more than 50%. When the merger outcome is known to be more than 50%, target shareholders suffer a negative abnormal return. Nevertheless, the abnormal return rises sharply one day to two days after the announcement (t=1 to t=2) which produces positive abnormal returns. For the remainder of the days, the graph of abnormal returns oscillates around the zero line.

Figure 8.4. The average abnormal return of target firms
for acquisition of more than 50%
(Market adjusted model)



The value of abnormal returns in Table 8.4. shows that the target shareholders gain a negative abnormal return of -1.38% on the day when merger results are known. The shareholders of target firms suffer further losses during the period of 10 days when they obtain a negative abnormal return of -0.18% on average. The cumulative abnormal return of target firms also shows negative returns during the 10 day period. The target shareholders register a negative cumulative abnormal return of -1.96% on the 10th day which is enough to justify the hypothesis that the shareholders of target firms suffer an abnormal loss after the announcement of merger results.

Table 8.4. The average abnormal return of target firms
for acquisition of more than 50%
(Market adjusted model; n = 48)

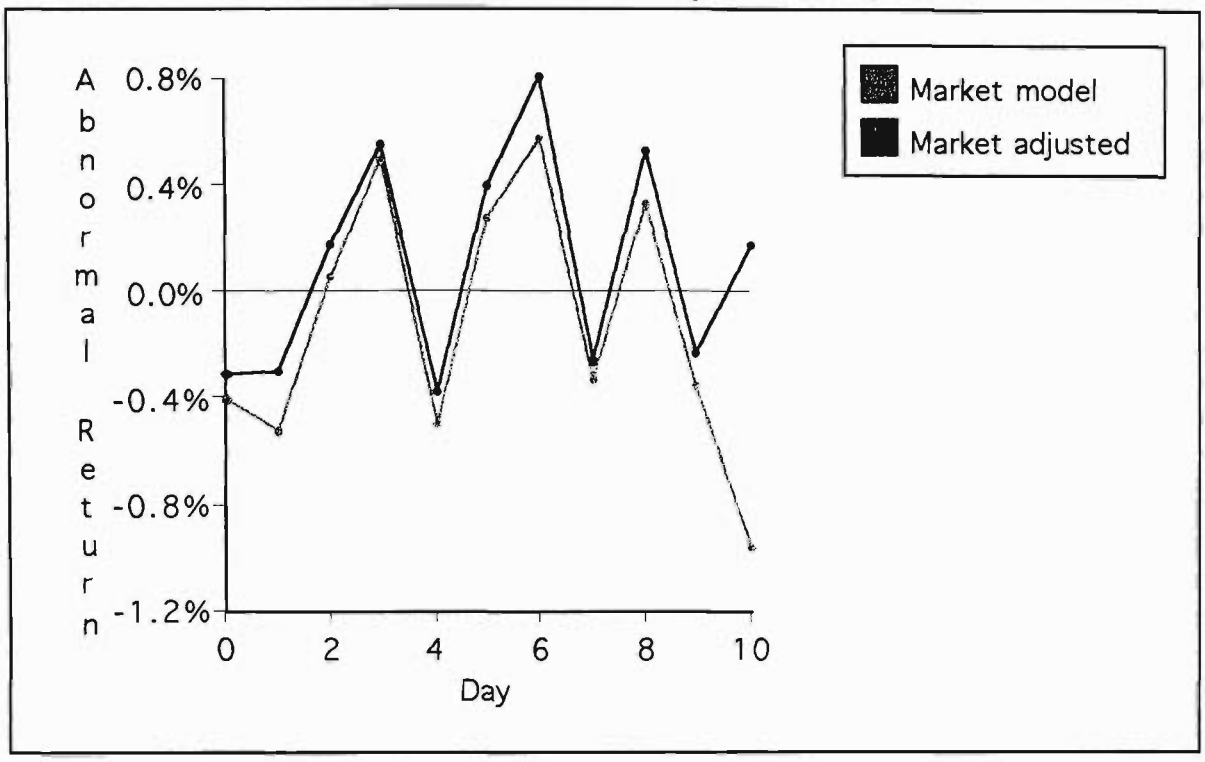
Day	Abnormal Return	Cumulative A R
0	-1.38%	-1.38%
1	0.00%	-1.37%
2	1.23%	-0.14%
3	-0.99%	-1.13%
4	0.26%	-0.88%
5	-0.24%	-1.12%
6	-0.75%	-1.87%
7	-0.27%	-2.14%
8	0.65%	-1.49%
9	-0.24%	-1.73%
10	-0.23%	-1.96%
Mean	-0.18%	-1.38%
Minimum	-1.38%	-2.14%
Maximum	1.23%	-0.14%

8.4. Comparison of the abnormal returns of the two models

8.4.1. The bidder's abnormal return

The graphs at Figure 8.5. shows the comparison of abnormal returns of bidding firms based on the market model and the market adjusted model. The pattern of the two graphs is almost the same. When the market adjusted model rises, it is followed by the market model, and when the market adjusted model falls, the market model also does so. However, the market adjusted model, as a whole, generates a slightly higher abnormal return than the market model although they tend to move in the same direction.

Figure 8.5. The average abnormal return of biding firms
for acquisition of more than 50%
(Market model and market adjusted model)



The value of abnormal returns of the market model and the market adjusted model is available at Table 8.5. When the merger result is known to be more than 50%, both the market model and market adjusted model yield negative abnormal returns at -0.40% and -0.30% respectively. Interestingly, the mean value of abnormal returns for the shareholders of bidding firms is almost the same under the two models. The market model yielding an average abnormal return of -0.12% and the market adjusted model -0.11%. These result suggest that the market adjusted model yields a better return for the shareholders of bidding firms.

Table 8.5. The average abnormal return of bidding firms
for acquisition of more than 50%
(Market model and market adjusted model; n = 44)

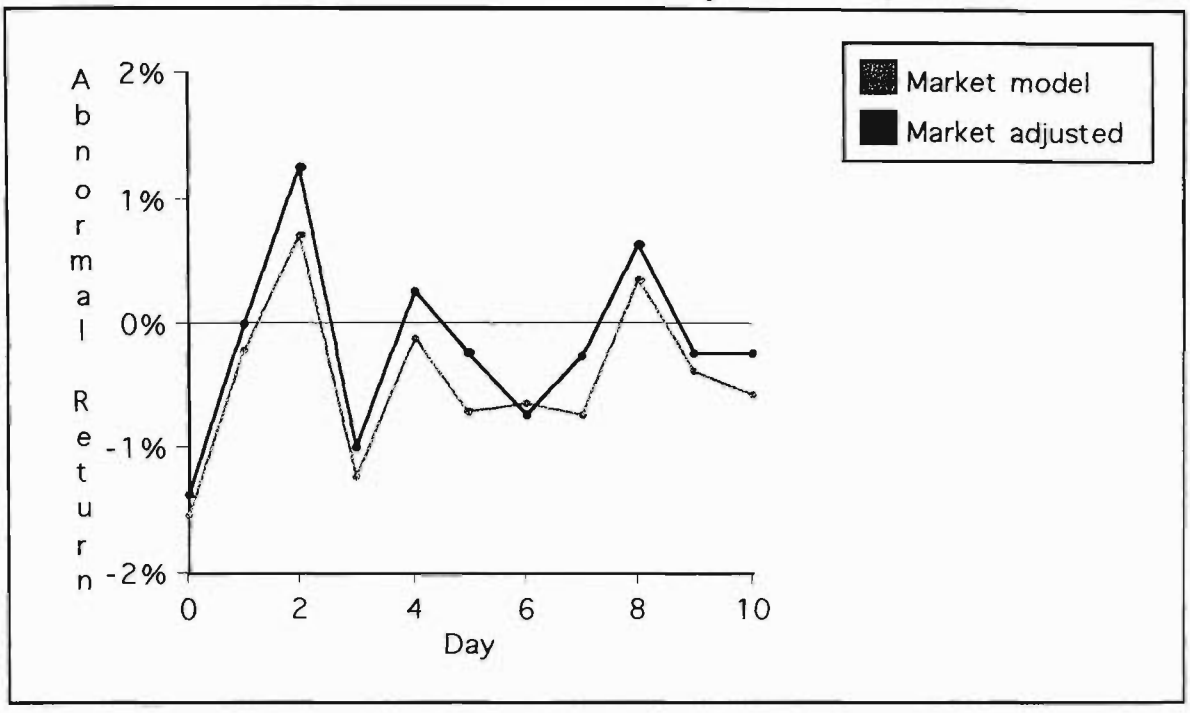
Day	Market model	Market adjusted
0	-0.40%	-0.30%
1	-0.52%	-0.30%
2	0.05%	0.18%
3	0.49%	0.56%
4	-0.50%	-0.38%
5	0.28%	0.39%
6	0.59%	0.83%
7	-0.33%	-0.26%
8	0.34%	0.53%
9	-0.35%	-0.23%
10	-0.95%	0.18%
Mean	-0.12%	0.11%
Minimum	-0.95%	-0.38%
Maximum	0.59%	0.83%

8.4.2. The target's abnormal return

The graph at Figure 8.6. displays the abnormal returns of target firms based on market model and market adjusted model. Both models indicate that the abnormal return of target firms is negative when the merger outcome is known to be more than 50%.

Generally, the abnormal return of market model moves in the same direction as the market adjusted model. The only exception is six days after the announcement of merger result (t=6) which shows that the abnormal return of market model rises but the market adjusted return falls. However, the overall results demonstrate that the market model generates fewer abnormal returns compared with the market adjusted model.

Figure 8.6. The average abnormal return of target firms
for acquisition of more than 50%
(Market model and market adjusted model)



The value of abnormal returns shown at Table 8.6. indicates that the market adjusted model yields an abnormal return of -1.38% whereas the market model produces an abnormal return of -1.56% on the announcement day of merger results (t=0). Further, the average abnormal return based on the market adjusted model is slightly better than the market model. From the table, we can see that the market adjusted model generates an average return of -0.18% whilst the market model yields an average return of -0.46%. It is clear that the market adjusted model performs better than the market model to yield higher abnormal returns.

Table 8.6. The average abnormal return of target firms
for acquisition of more than 50%
(Market model and market adjusted model; n = 48)

Day	Market model	Market adjusted
0	-1.56%	-1.38%
1	-0.21%	-0.00%
2	0.71%	1.23%
3	-1.24%	-0.99%
4	-0.12%	0.26%
5	-0.72%	-0.24%
6	-0.65%	-0.75%
7	-0.74%	-0.27%
8	0.37%	0.65%
9	-0.38%	-0.24%
10	-0.56%	-0.23%
Mean	-0.46%	-0.18%
Minimum	-1.56%	-1.38%
Maximum	0.71%	1.23%

8.5. Comparison of abnormal returns of the bidding and target firms

8.5.1. Market model

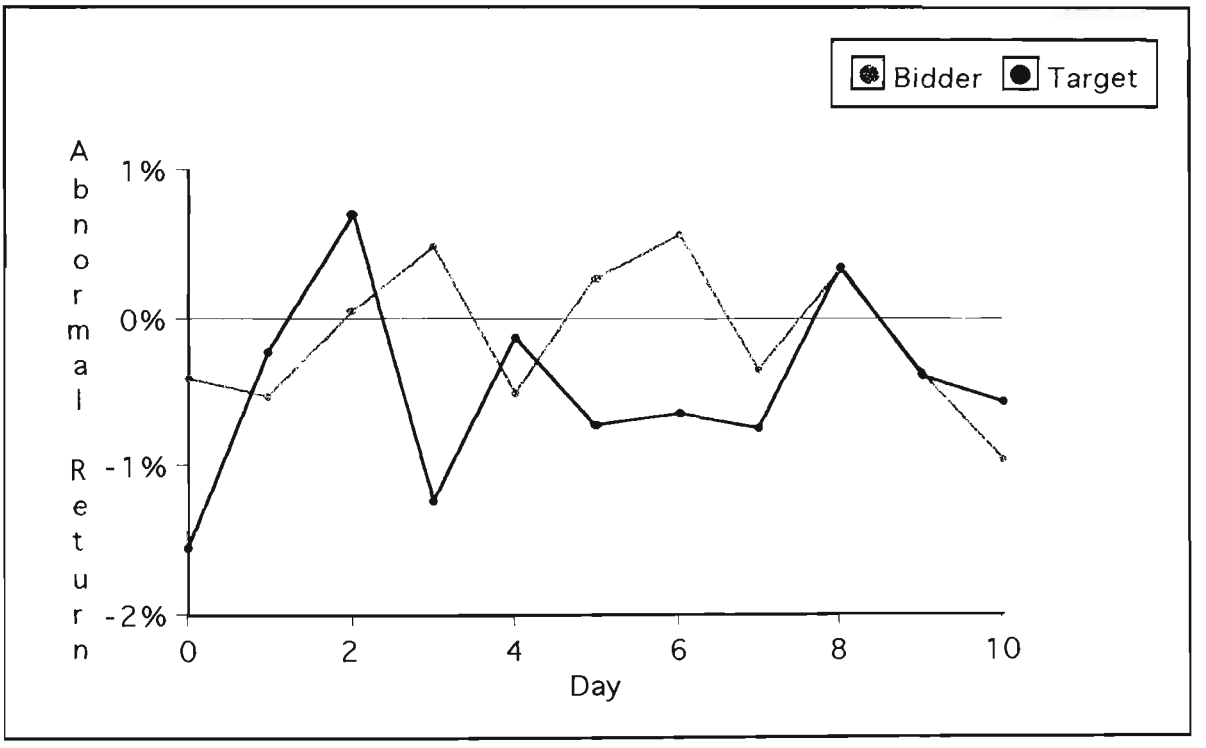
Figure 8.7. presents the graphs of abnormal returns of bidding and target firms. When the merger result is known to be more than 50% acquisition, both the bidding and target firms earn negative returns. Hence, the announcement of merger results of more than 50% acquisition is considered to be bad news for the shareholders of bidding and target firms. However, the shareholders of bidding firms earn a better abnormal return compared to the shareholders of target firms on the announcement day of merger outcomes.

During the period of 10-day returns, the bidding firms outperform the target firms. The chart of bidding firms demonstrates that it fluctuates around the zero line producing better

results than the target firms. On the other hand, the chart of target firm mostly moves below the zero line which means it yields more negative returns than the bidding firms.

By comparing these two graphs, it can be seen that the news of merger results of more than 50% relatively generates better abnormal returns for the shareholders of bidding firms. The shareholders of acquiring firms are likely to be more optimistic regarding the potential benefits in the future because they now hold a majority interest in the acquired firms. Accordingly, they hold a majority control in the management and direction of the acquired firms.

Figure 8.7. The average abnormal return of bidding and target firms for acquisition of more than 50% (Market model)



The value of abnormal returns for bidding and target firms is presented in Table 8.7. When the merger result is announced to be more than 50% acquisition (t=0), the shareholders of bidding firms suffer an abnormal loss of -0.40% whereas the shareholders of target firms have an abnormal loss of -1.56%. Both shareholders have negative abnormal returns, but the shareholders of bidding firms obtain a better abnormal return.

The mean of abnormal returns for the period of 10 days for bidding and target firms is also negative, the bidding firms have an average of -0.12% and the target firms of -0.46%. In addition, the cumulative abnormal return of bidding and target firms shows a significant difference even though both suffer negative cumulative abnormal returns. The former has a cumulative abnormal return of -1.31% which is much better than the target firms who suffer a cumulative abnormal return of -5.10% for the target firms.

The results suggest under this model that both shareholders of bidding and target firms suffer abnormal losses on the announcement day of merger outcomes and their losses continue until the 10 day period of measurement, but, the shareholders of target firms experience more losses than the shareholders of bidding firms.

Table 8.7. The average abnormal return of bidding and target firms for acquisition of more than 50% (Market model; n = 44 for bidder and n = 48 for target)

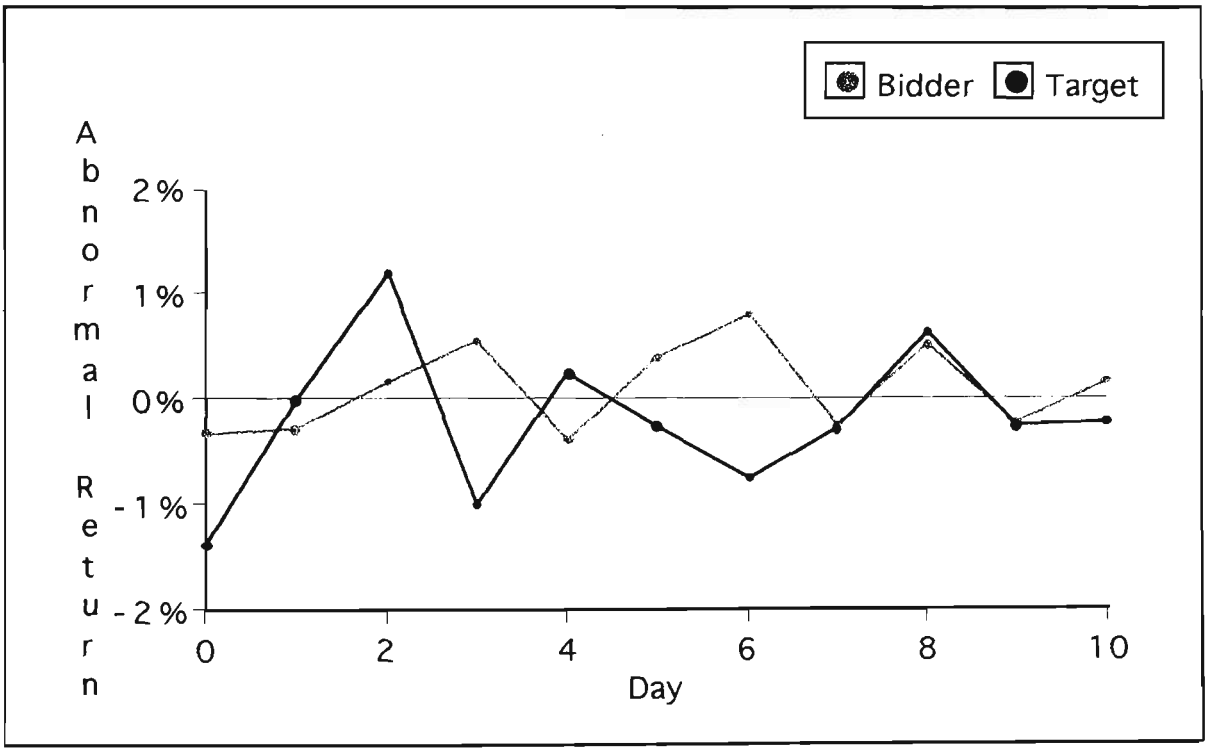
Day	Bidder	Target
0	-0.40%	-1.56%
1	-0.52%	-0.21%
2	0.05%	0.71%
3	0.49%	-1.24%
4	-0.50%	-0.12%
5	0.28%	-0.72%
6	0.59%	-0.65%
7	-0.33%	-0.74%
8	0.34%	0.37%
9	-0.35%	-0.38%
10	-0.95%	-0.56%
C A R	-1.31%	-5.10%
Mean	-0.12%	-0.46%
Minimum	-0.95%	-1.56%
Maximum	0.59%	0.71%

8.5.2. Market adjusted model

The graph presented at Figure 8.8. shows that the shareholders of bidding and target firms suffer losses when the merger result is announced at more than 50% acquisition. This implies that the announcement of merger result of more than 50% is not considered positively by either group of shareholders.

During the 10 day measurement, the graph for bidding firms as well as target firms fluctuate around the zero line. However, the graph for bidding firms has a narrower range which means the shareholders of bidding firms obtain more stable abnormal returns than the shareholders of target firms.

Figure 8.8. The average abnormal return of bidding and target firms for acquisition of more than 50% (Market adjusted model)



The value of abnormal returns shown in Table 8.8. indicates that the shareholders of bidding firms earn a negative abnormal return of -0.30% on the announcement day whereas the shareholders of target firms earn a negative abnormal return of -1.38%. In contrast, the cumulative abnormal returns of these two sides differ greatly : the target firms experiencing a

negative cumulative return of -1.96% and the bidding firms 1.21%. Additionally, the mean abnormal return for the bidding firms is positive while it is negative for the target firms.

Table 8.8. The average abnormal return of bidding and target firms for acquisition of more than 50% (Market adjusted model; n = 44 for bidder and n = 48 for target)

Day	Bidder	Target
0	-0.30%	-1.38%
1	-0.30%	0.00%
2	0.18%	1.23%
3	0.56%	-0.99%
4	-0.38%	0.26%
5	0.39%	-0.24%
6	0.83%	-0.75%
7	-0.26%	-0.27%
8	0.53%	0.65%
9	-0.23%	-0.24%
10	0.18%	-0.23%
C A R	1.21%	-1.96%
Mean	0.11%	-0.73%
Minimum	-0.38%	-1.38%
Maximum	0.83%	1.23%

8.6. Summary

8.6.1. The bidder's abnormal return

The shareholders of bidding firms experience negative abnormal returns when the merger result is announced at more than 50% acquisition regardless of the model employed. Under the market model the shareholders of acquiring firms suffer an abnormal loss of -0.40%, which is less under the market adjusted model in which the shareholders of acquiring firms suffer an abnormal loss of -0.30%.

The average abnormal return of bidding firms under the market model and the market

adjusted model is almost the same. The former produces an average abnormal return of -0.12% and the latter displays an average abnormal return of 0.11%. This finding implies that the market adjusted model outperforms the market model to register higher abnormal returns for the shareholders of bidding firms.

8.6.2. The target's abnormal return

The target shareholders obtain negative abnormal returns when the merger result is known to be more than 50% acquisition. Under the market model the target shareholders suffer an abnormal loss of -1.56% and their loss is -1.38% with the market adjusted model. The mean abnormal returns are also negative under both the market model and market adjusted model at -0.46% and -0.18% respectively. However, the average abnormal return is greater under the market adjusted model.

8.6.3. Comparison of abnormal returns of the bidding and target firms

The abnormal returns between the bidding and target firms demonstrate significant differences, with the bidding firms always displaying greater abnormal returns. The shareholders of bidding firms obtain a cumulative abnormal return of -1.31% and the target firms suffer a cumulative loss of -5.10% under the market model. With the market adjusted model, the acquiring shareholders experience a cumulative abnormal return of 1.21% and the target shareholders earn a negative cumulative abnormal return of -1.96%. In addition, the mean abnormal return for the bidding firms is higher than that of the target firms during the period of measurement. The bidding firms have an average abnormal return of -0.12% on the market model and 0.11% on the market adjusted model. For the target firms, their average abnormal returns are -0.46% and -0.73% respectively.

These findings suggest that the shareholders of bidding firms gain better abnormal returns when compared to the shareholders of target firms after the merger outcome is known to be more than 50% acquisition regardless of the model employed. Importantly, the better abnormal returns raised by the shareholders of bidding firms are not necessarily positive abnormal returns.

Chapter 9

The Abnormal Return
For Acquisition of Less Than 50%

9.1. Introduction

In chapter 8, the abnormal returns for the shareholders of bidding and target firms when the outcome of acquisitions is more than 50% was discussed. From this scheme of acquisitions, it is apparent that the shareholders of bidding firms are better off compared to the shareholders of target firms.

This chapter will estimate the abnormal return for the shareholders of bidding and target firms for acquisition of less than 50%. The day when the result of mergers and acquisitions is known will be defined as day=0 (t=0), and the measurement of abnormal returns will have a period of ten days from the announcement of merger results (t=1 to t =10).

9.2. The bidder's abnormal return

9.2.1. Market model

Figure 9.1. provides the graph of abnormal returns for the shareholders of bidding firms who acquire less than 50% of interests of target firms. The announcement of merger results to the public (t=0) where the acquiring firms acquire less than 50% of target shares generates a negative abnormal return for the shareholders of these firms.

For the period of ten days after the merger result is known (t = 1 to t = 10), the graph of abnormal returns of acquiring firms follows a trend of upward movement. This means that the shareholders of bidding firms are optimistic about the future benefits of mergers and acquisitions even though the bidding firms only acquire less than a 50% interest in target

shares.

Figure 9.1. The average abnormal return of bidding firms
for acquisition of less than 50%
(Market model)

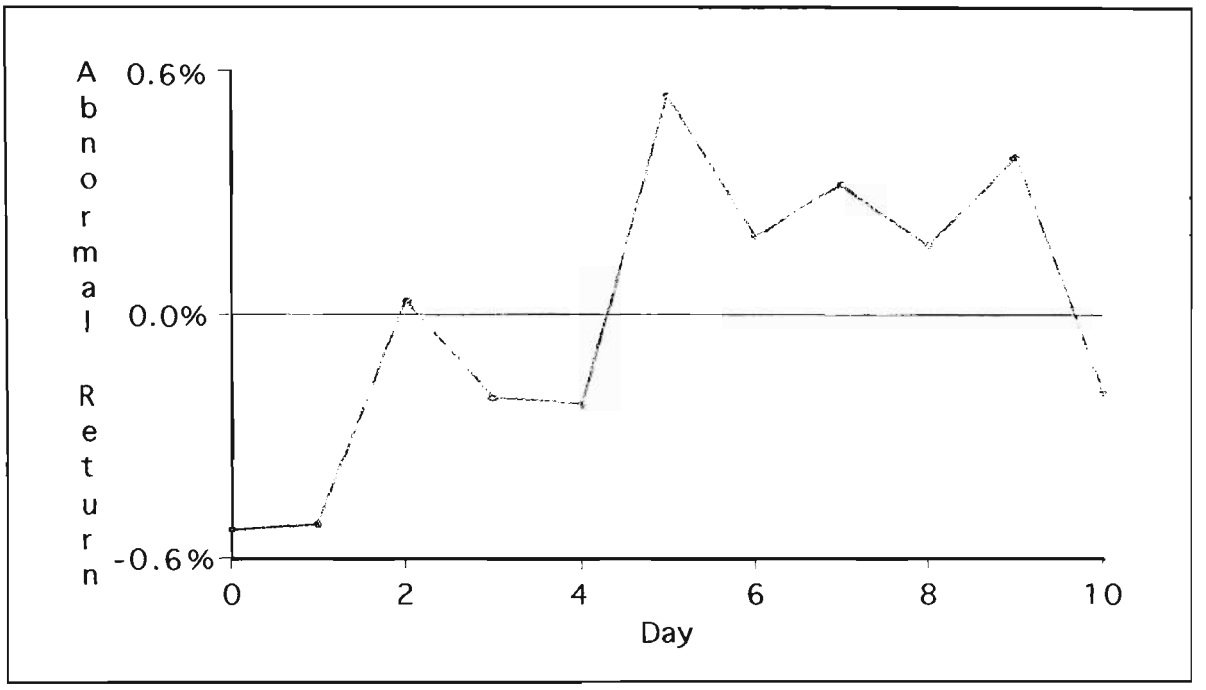


Table 9.1. provides the value of abnormal return for the bidding firms for the period of ten days after the merger result is known to be less than 50%. The shareholders of bidding firms earn a negative abnormal return of -0.52% following the announcement of merger outcomes (t = 0). The average abnormal return is -0.004% which means that the acquiring shareholders suffer only a small abnormal loss after the merger result is announced.

In contrast, the aggregate abnormal return for shareholders of bidding firms indicates a positive result. The acquiring firms have a cumulative abnormal return of 0.04% which is quite significant for the shareholders of acquiring firms who obtain a small gain when they take over less than 50% of target interests.

Table 9.1.The average abnormal return of bidding firms
for acquisition of less than 50%
(Market model; n = 37)

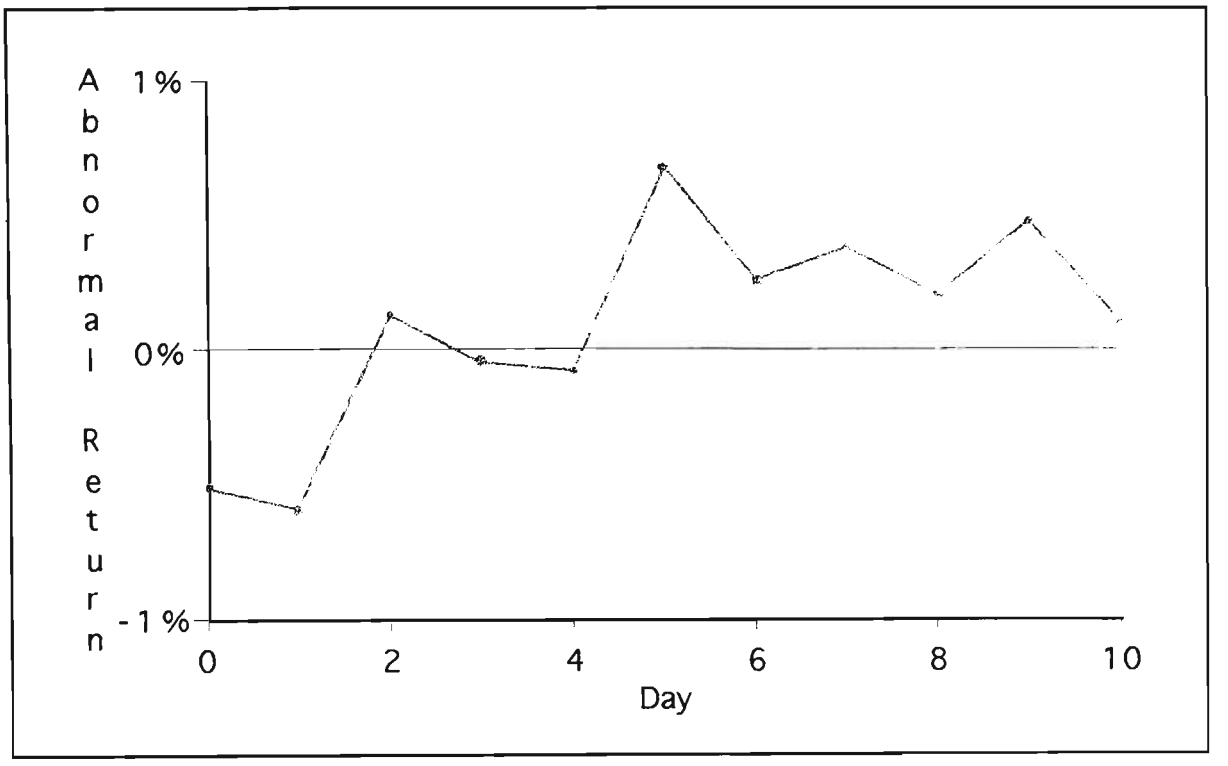
Day	Abnormal Return	Cumulative A R
0	-0.52%	-0.52%
1	-0.51%	-1.04%
2	0.03%	-1.00%
3	-0.20%	-1.20%
4	-0.22%	-1.42%
5	0.55%	-0.87%
6	0.20%	-0.67%
7	0.33%	-0.34%
8	0.18%	-0.16%
9	0.39%	0.23%
10	-0.19%	0.04%
Mean	-0.004%	-0.63%
Minimum	-0.52%	-1.42%
Maximum	0.55%	0.23%

9.2.2. Market adjusted model

When the merger result is known to be less than 50% acquisition, it sends negative signals negative to the shareholders of bidding firms. On the day the news is announced (t=0), the shareholders of bidding firms experience a negative abnormal return as seen on Figure 9.2.

For the period of ten days after the merger result is known (t=1 to t=10), the chart shows that the abnormal return of bidding firms tends to rise. This trend may indicate that the shareholders of acquiring firms are satisfied with the merger outcome and are optimistic about the merger benefits that can be realised in the future.

Figure 9.2. The average abnormal return of bidding firms
for acquisition of less than 50%
(Market adjusted model)



The value of abnormal returns for the bidding firms is presented in Table 9.2. It shows that the shareholders of bidding firms suffer a negative abnormal return of -0.51% on the announcement day (t=0), but on average the bidding shareholders realise a positive but very small abnormal return for the period of 10 days at 0.09%.

The cumulative abnormal return for the period of ten days shows a positive gain to the shareholders of bidding firms of 1.03%. This result implies that the shareholders of acquiring firms obtain a positive but small aggregate abnormal return when they acquire less than 50% of target interests.

Table 9.2. The average abnormal return of bidding firms
for acquisition of less than 50%
(Market adjusted model; n = 37)

Day	Abnormal Return	Cumulative A R
0	-0.51%	-0.51%
1	-0.59%	-1.10%
2	0.14%	-0.96%
3	-0.04%	-1.00%
4	-0.08%	-1.08%
5	0.68%	-0.40%
6	0.26%	-0.15%
7	0.39%	0.24%
8	0.20%	0.44%
9	0.49%	0.93%
10	0.10%	1.03%
Mean	0.09%	-0.23%
Minimum	-0.59%	-1.10%
Maximum	0.68%	1.03%

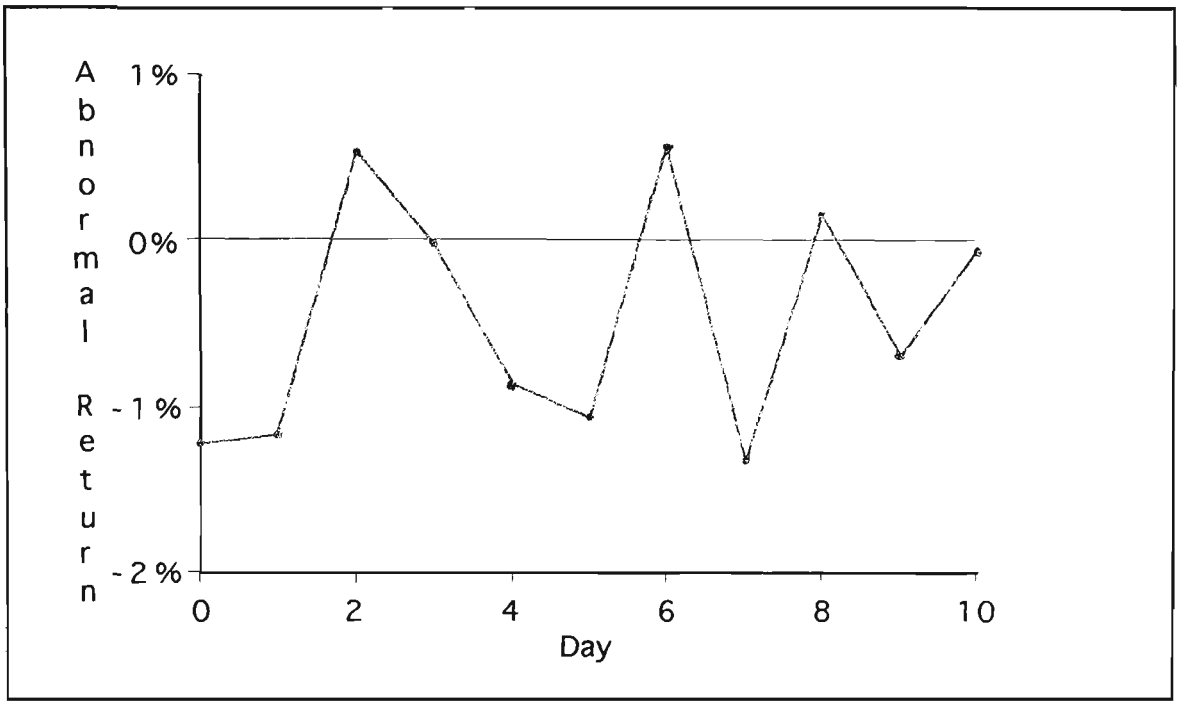
9.3. The target firms' abnormal return

9.3.1. Market model

The graph in Figure 9.3. presents the abnormal return of target firms when the stake acquired is less than 50%. The shareholders of target firms receive a negative abnormal return on the announcement day of merger results. The negative abnormal return indicates that the announcement of merger outcomes of less than 50% is considered negatively by shareholders of target firms.

Following such announcements, the abnormal return rises and falls after the announcement day, however, abnormal returns are mostly negative. This fluctuation implies that the target shareholders may have no indication of the future direction of their firms after their stake is acquired at a level less than 50% by the bidding firms.

Figure 9.3. The average abnormal return of target firms
for acquisition of less than 50%
(Market model)



The value of abnormal returns presented at Table 9.3. shows that the target shareholders suffer an abnormal loss of -1.22% when the merger result is known to be less than 50%. The average abnormal return for the shareholders of target firms also demonstrates a negative return of -0.47%.

In addition, the cumulative abnormal returns show negative values for the relevant period of time. The shareholders of target firms receive an aggregate loss of -5.12% for the ten day period which means that the announcement of merger outcomes of less than 50% generates negative abnormal returns for the target shareholders.

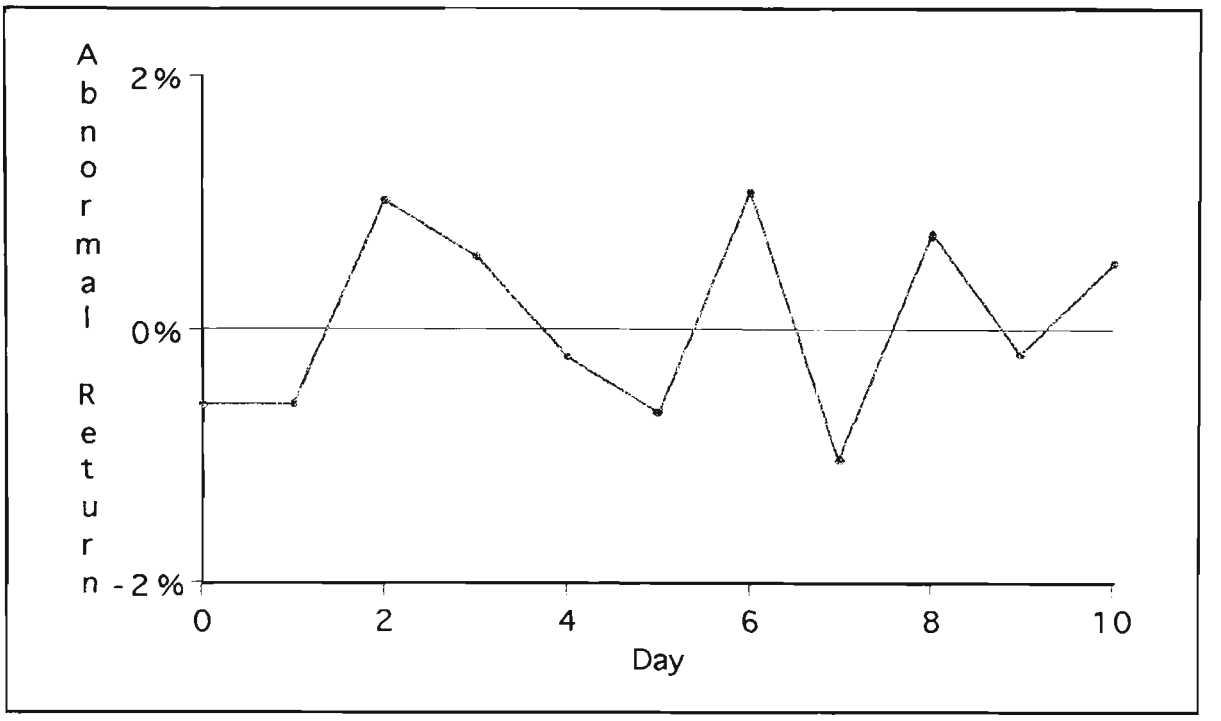
Table 9.3. The average abnormal return of target firms
for acquisition of less than 50%
(Market model; n = 42)

Day	Abnormal Return	Cumulative A R
0	-1.22%	-1.22%
1	-1.17%	-2.39%
2	0.54%	-1.85%
3	-0.03%	-1.88%
4	-0.86%	-2.74%
5	-1.06%	-3.80%
6	0.58%	-3.22%
7	-1.32%	-4.54%
8	0.17%	-4.36%
9	-0.69%	-5.05%
10	-0.06%	-5.12%
Mean	-0.47%	-3.29%
Minimum	-1.32%	-5.12%
Maximum	0.58%	-1.22%

9.3.2. Market adjusted model

The graph of abnormal returns at Figure 9.4. is the market adjusted model for target firms where acquisition is less than 50%. When the merger result is known to be less than 50%, the target shareholders suffer a negative abnormal return. Nevertheless, the abnormal return tends to fluctuate after the announcement of the merger outcome that produces positive and negative abnormal returns. This suggests that the acquisition of less than 50% of target shares may create uncertainty about the future direction of target firms.

Figure 9.4. The average abnormal return of target firms
for acquisition of less than 50%
(Market adjusted model)



The value of abnormal returns for target firms in Table 9.4. shows that the target shareholders suffer a small negative abnormal return of -0.57% on the day when merger results are known (t=0). Conversely, the cumulative abnormal return during the 10 day period shows a positive result in which the target shareholders earn 0.91%. In addition, the shareholders of target firms register a positive average abnormal return during the same period at 0.08%.

Although the shareholders of target firms obtain a positive but small mean abnormal return and a positive cumulative abnormal return, the evidence strongly demonstrates that the shareholders of target firms gain little benefit from an acquisition of less than 50%.

Table 9.4. The average abnormal return of target firms
for acquisition of less than 50%
(Market adjusted model; n = 42)

Day	Abnormal Return	Cumulative A R
0	-0.57%	-0.57%
1	-0.58%	-1.15%
2	1.03%	-0.12%
3	0.60%	0.48%
4	-0.19%	0.29%
5	-0.63%	-0.34%
6	1.12%	0.77%
7	-1.00%	-0.23%
8	0.77%	0.54%
9	-0.18%	0.36%
10	0.55%	0.91%
Mean	0.08%	0.08%
Minimum	-1.00%	-1.15%
Maximum	1.12%	0.91%

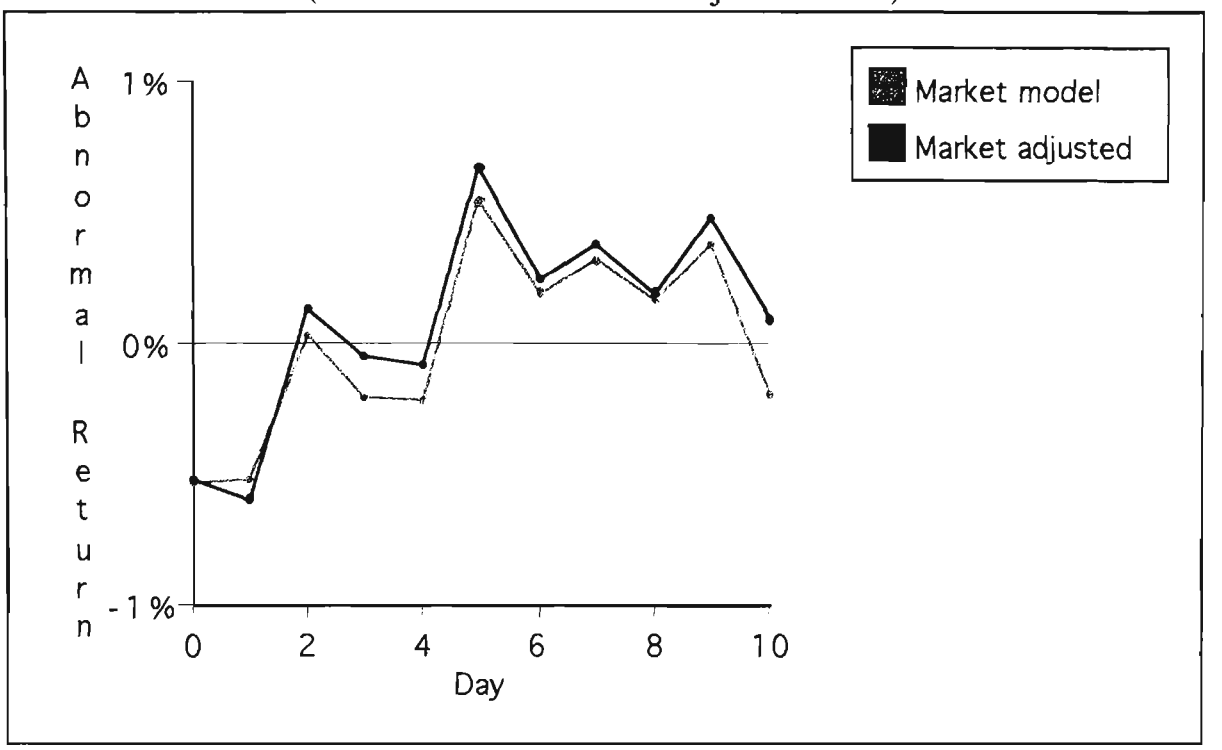
9.4. Comparison of abnormal returns of the two models

9.4.1. The bidder's abnormal return

The graphs in Figure 9.5. show the comparative abnormal returns of bidding firms based on the market model and the market adjusted model. The pattern of the two graphs is almost the same, but, as a whole, the market adjusted model produces slightly higher abnormal return than the market model.

When the merger result is known to be less than 50% acquisition, both models produce negative abnormal returns for the shareholders of bidding firms. However, after the announcement of merger results, the abnormal returns tend to move upward and generate more positive abnormal returns.

Figure 9.5. The average abnormal return of biding firms
for acquisition of less than 50%
(Market model and market adjusted model)



The value of abnormal returns of the market model and the market adjusted model is presented in Table 9.5. When the merger result is announced at less than 50% acquisition, both the market model and market adjusted model yield negative abnormal returns of -0.52% and -0.51% respectively. Importantly, the average value of abnormal returns for the shareholders of bidding firms is better under the market adjusted model even though the two models generate positive mean abnormal returns. The market model yields an average abnormal return of 0.004% whilst the market adjusted model generates an average abnormal return of 0.09%.

Table 9.5. The average abnormal return of bidding firms
for acquisition of less than 50%
(Market model and market adjusted model; n = 37)

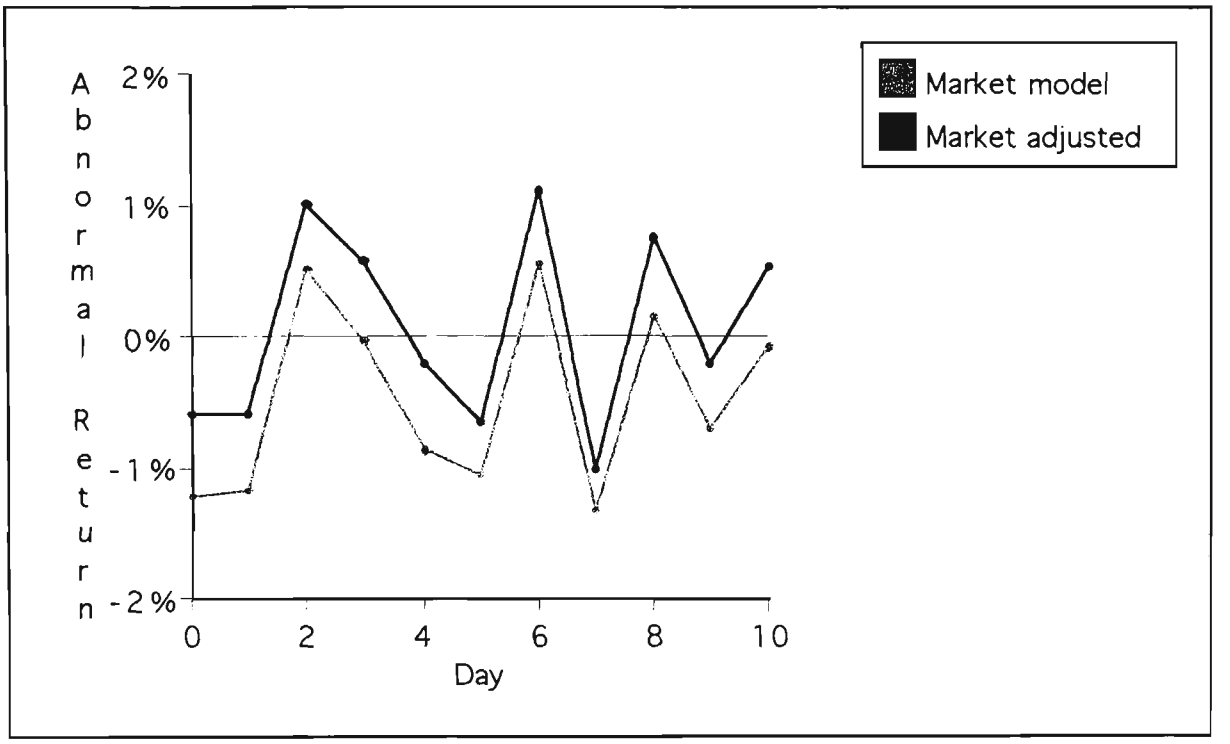
Day	Market model	Market adjusted
0	-0.52%	-0.51%
1	-0.51%	-0.59%
2	0.03%	0.14%
3	-0.20%	-0.04%
4	-0.22%	-0.08%
5	0.55%	0.68%
6	0.20%	0.26%
7	0.33%	0.39%
8	0.18%	0.20%
9	0.39%	0.49%
10	-0.19%	0.10%
Mean	0.004%	0.09%
Minimum	-0.52%	-0.59%
Maximum	0.55%	0.68%

9.4.2. The target's abnormal return

The graph in Figure 9.6. shows the abnormal returns of target firms based on market model and market adjusted model. The both models indicate that the abnormal return of target firms is negative when the merger outcome is known to be less than 50% acquisition.

Significantly, the charts of both models tend to move in the same direction. For the entire period, both charts fluctuate sharply around the zero line to demonstrate uncertainty among the shareholders of target firms about the future prospects of their firm after the merger outcome is known to be less than 50% acquisition. Nevertheless, the overall results demonstrate that the market adjusted model generates higher abnormal returns for target shareholders compared with the market model.

Figure 9.6. The average abnormal return of target firms
for acquisition of less than 50%
(Market model and market adjusted model)



The value of abnormal returns in Table 9.6. indicates that the market adjusted model yields an abnormal return of -0.57% which is greater than the market model yielding an abnormal return of -1.22% on the announcement day of merger results (t=0).

In addition, the average abnormal return based on market adjusted model is also higher than the market model. From Table 9.6., it can be seen that the market adjusted model yields a positive average abnormal return of 0.08% whilst the market model yields a negative average abnormal return of -0.47%. It is clear from these figures that the market adjusted model performs at a higher level than the market model.

Table 9.6. The average abnormal return of target firms
for acquisition of less than 50%
(Market model and market adjusted model; n = 42)

Day	Market model	Market adjusted
0	-1.22%	-0.57%
1	-1.17%	-0.58%
2	0.54%	1.03%
3	-0.03%	0.60%
4	-0.86%	-0.19%
5	-1.06%	-0.63%
6	0.58%	1.12%
7	-1.32%	-1.00%
8	0.17%	0.77%
9	-0.69%	-0.18%
10	-0.06%	0.55%
Mean	-0.47%	0.08%
Minimum	-1.32%	-1.00%
Maximum	0.58%	1.12%

9.5. Comparison of abnormal returns of the bidding and target firms

9.5.1. Market model

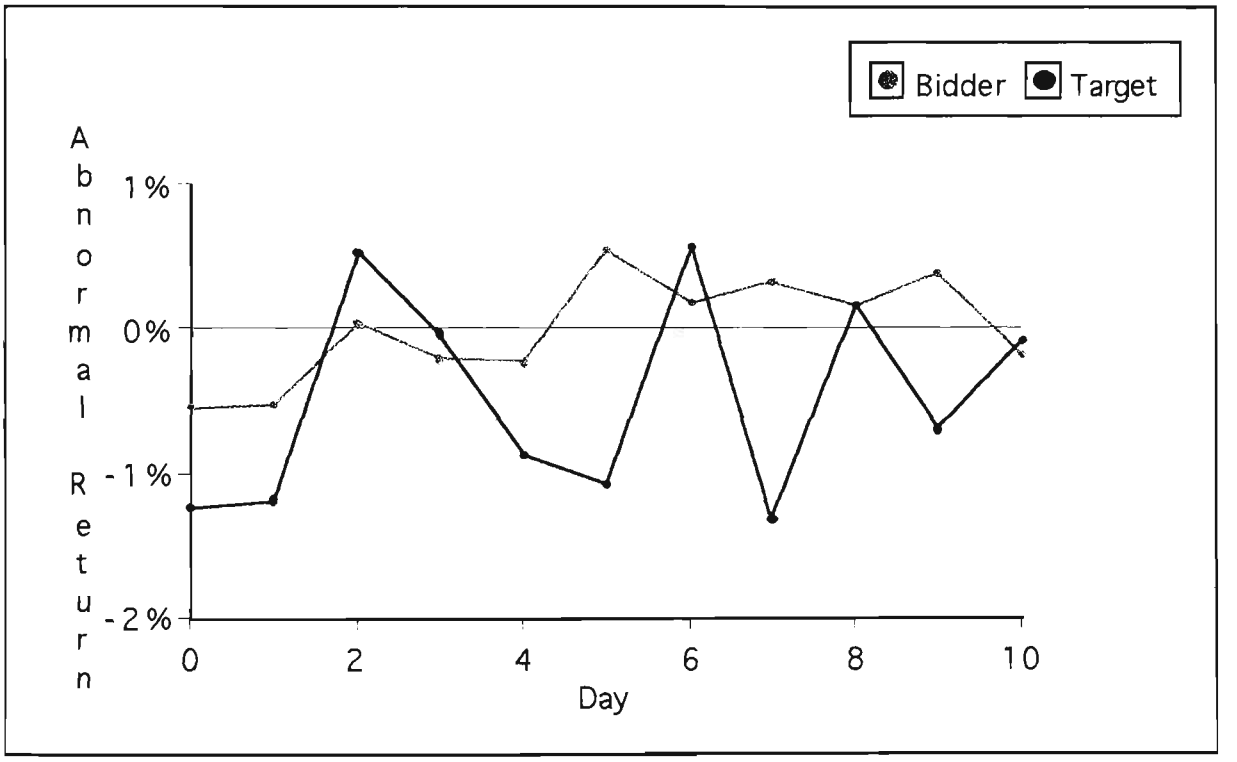
Figure 9.7. presents the charts of abnormal returns for both the acquiring and acquired firms. When the announcement of merger outcomes is known to be less than 50% acquisition, both the acquiring and acquired firms register negative abnormal returns. The shareholders of the bidding and target firms are likely to consider the news of merger results of less than 50% negatively although the shareholders of bidding firms enjoy a higher abnormal return compared to the shareholders of target firms. Over the period of 10 day abnormal returns, the bidding firms perform at a higher level than the target firms.

On one hand, the chart shows that bidding firms' results tend to move upward after the announcement day and are more stable around the zero line producing better results than the

target firms. On the other hand, the chart shows that the abnormal return of the target firms fluctuates more sharply around the zero line which yields larger negative abnormal returns.

By comparing these two graphs, it is clear that the news of merger results of less than 50% generally produces better abnormal returns for the shareholders of bidding firms. In most cases, the shareholders of bidding firms enjoy more positive abnormal return than the shareholders of target firms. The former acts in a more optimistic pattern than the latter regarding the future benefits expected to flow from the merged firms even though the former holds less than 50% of interests in the acquired firms. In contrast, the shareholders of target firms seem nervous after the announcement of merger results because the acquisition of less than 50% may result in uncertainty about the future prospects of their firms .

Figure 9.7. The average abnormal return of bidding and target firms
for acquisition of less than 50%
(Market model)



The value of abnormal returns for acquiring and acquired firms is presented in Table 9.7. When the merger result is announced to be less than 50% (t=0), the shareholders of bidding firms gain a negative abnormal return of -0.52% whereas the shareholders of target firms earn a negative abnormal return of -1.22%. Both shareholders have negative abnormal returns, but the shareholders of bidding firms gain a better result.

The mean of abnormal returns for bidding and target firms shows reversed results. The bidding firms have a positive average abnormal return of 0.004% over the period of 10 days and the target firms obtain a negative average abnormal return of -0.47% for the same period. Meanwhile, the cumulative abnormal return shows significant differences between the bidding and target firms. The shareholders of bidding firms gain a small but positive cumulative abnormal return of 0.04% while the target firms suffer a negative cumulative abnormal return of -5.12%.

The findings suggest that the shareholders of bidding firms are better off than the shareholders of target firms. Although both shareholders suffer losses on the day merger results are announced, the former enjoys a positive cumulative abnormal return as well as a positive mean abnormal return. Conversely, the latter suffers a considerable loss over the 10-day period. This fact suggests that the shareholders of target firms are the losers in the acquisition of less than 50%.

Table 9.7. The average abnormal return of bidding and target firms for acquisition of less than 50%
(Market model; n = 37 for bidder and n = 42 for target)

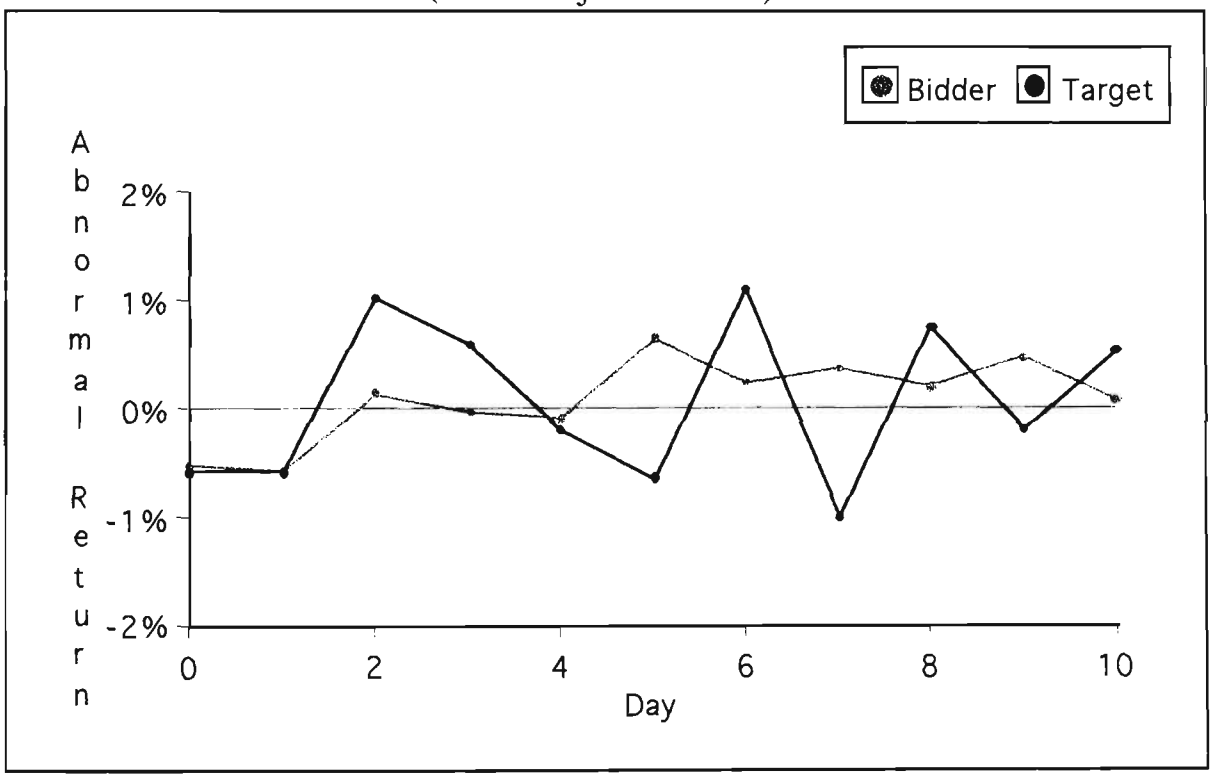
Day	Bidder	Target
0	-0.52%	-1.22%
1	-0.51%	-1.17%
2	0.03%	0.54%
3	-0.20%	-0.03%
4	-0.22%	-0.86%
5	0.55%	-1.06%
6	0.20%	0.58%
7	0.33%	-1.32%
8	0.18%	0.17%
9	0.39%	-0.69%
10	-0.19%	-0.06%
C A R	0.04%	-5.12%
Mean	0.004%	-0.47%
Minimum	-0.52%	-1.32%
Maximum	0.55%	0.58%

9.5.2. Market adjusted model

The graph presented in Figure 9.8. shows that the shareholders of biding and target firms suffer abnormal losses when the merger result is announced at less than 50% acquisition. This result implies that the announcement of merger result of less than 50% are not regarded positively for either group of shareholders.

Over the 10 day period, the chart shows bidding firms to be more stable than the target firms as it fluctuates above the zero line most of the time. In contrast, the chart of target firms is more volatile than that of the bidding firms, oscillating sharply around the zero line. Accordingly, the shareholders of bidding firms record higher abnormal returns compared with target firms.

Figure 9.8. The average abnormal return of bidding and target firms for acquisition of less than 50% (Market adjusted model)



The value of abnormal returns listed in Table 9.8. indicates that the shareholders of bidding and target firms gain negative abnormal returns on the announcement day of merger results at -0.51% and -0.57% respectively.

Meanwhile the cumulative abnormal return is slightly different for the bidding and target firms. Both shareholders gain positive cumulative abnormal returns at 1.03% and 0.91% respectively. The mean abnormal return also demonstrates little difference between the bidding and target firms. The former experiences an average abnormal return of 0.09% while the latter experiences an average abnormal return of 0.08%.

Table 9.8. The average abnormal return of bidding and target firms for acquisition of less than 50%
(Market adjusted model; n = 37 for bidder and n = 42 for target)

Day	Bidder	Target
0	-0.51%	-0.57%
1	-0.59%	-0.58%
2	0.14%	1.03%
3	-0.04%	0.60%
4	-0.08%	-0.19%
5	0.68%	-0.63%
6	0.26%	1.12%
7	0.39%	-1.00%
8	0.20%	0.77%
9	0.49%	-0.18%
10	0.10%	0.55%
CAR	1.03%	0.91%
Mean	0.09%	0.08%
Minimum	-0.59%	-1.00%
Maximum	0.68%	1.12%

9.6. Summary

9.6.1. The bidder's abnormal return

The shareholders of bidding firms experience negative abnormal returns when the merger result is known to be less than 50% acquisition regardless of the model employed. Under the market model the shareholders of acquiring firms record an abnormal loss of -0.52%. This loss is slightly less under the market adjusted model in which the shareholders of acquiring firms record an abnormal loss of -0.51%.

The average abnormal return of bidding firms under the market model and the market adjusted model is somewhat different. The former generates an average abnormal return of 0.004% and the latter produces an average abnormal return of 0.09%. This finding implies that the market adjusted model performs better for the shareholders of bidding firms.

9.6.2. The target's abnormal return

The target shareholders experience negative abnormal returns when the merger result is known to be less than 50% acquisition. Under the market model, the target shareholders record an abnormal loss of -1.22% whilst their abnormal loss is -0.57% under the market adjusted model. The mean abnormal return is negative under the market model and is positive under the market adjusted model at -0.47% and 0.08% respectively. Therefore, the average abnormal return is higher under the market adjusted model.

9.6.3. Comparison of abnormal returns of the bidding and target firms.

When the abnormal returns of the bidding and target firms are compared, there are significant differences, with bidding firms always better off. Under the market model, the shareholders of bidding firms gain a positive but small cumulative abnormal return of 0.04% whereas the shareholders of target firms record an abnormal loss of -5.12%. Nevertheless, the cumulative abnormal returns, under the market adjusted model, are positive for both shareholders at 1.03% and 0.91% respectively.

In addition, the mean abnormal return for bidding firms is always higher than the target firms over the period of time. Bidding firms have an average abnormal return of 0.004% with the market model and 0.09% with the market adjusted model. The target shareholder average abnormal returns are -0.47% and 0.08% respectively.

These findings demonstrate that the shareholders of bidding firms gain better abnormal returns compared with the shareholders of target firms after the merger outcome is announced to be less than 50% acquisition, and the better results received by the shareholders of bidding firms are not necessarily positive abnormal returns.

Part Four

Summary, Conclusion and Policy Implication

Chapter 10

Summary, Conclusion and Policy Implication

10.1. Introduction

The previous five chapters discussed the data analysis and empirical findings of this research. Those chapters outlined the "larger picture" of the effect of mergers and acquisitions on shareholder wealth. This chapter will discuss summary of the theories, models employed and findings, conclusion, and policy implication of those results upon shareholders from both the acquiring firms and the acquired firms.

10.2. Summary

10.2.1. The objective of this study

The objective of this study is to model the abnormal returns for shareholders of the target and acquiring firms on mergers and acquisitions, then, to differentiate whether the acquisition of more than 50% produces the same results as the acquisition of less than 50%.

10.2.2. Brief overview of the theoretical background

The chart in Table 10.1. is the framework of the Hubris hypothesis based on theory and empirical evidence. The diagram in this exhibit shows that surrounding the announcement of mergers and acquisitions the bidding shareholders are likely to be 'worse off' or 'steady' while the shareholders of target firms would almost be 'better off'.

Table 10.1. The Hubris theory on mergers and acquisitions

	Abnormal Return surrounding the merger announcement
Bidder	worse off / steady
Target	better off

Although bidding firms gain a small abnormal return or almost nothing in mergers and acquisitions, they do not abandon their intention to takeover target firms. Whilst they are aware that much attention is given to their target, they have other motives which drive them to takeover the target firms, such as maximisation of resources, accessing of new markets, gaining economies of scale, increasing market share and raising more resources.

On the other hand, target firms are most likely to be the winners in any merger or acquisition proposal because they are ready to sacrifice their stakes at the expense of a higher premium offered by bidding firms. Therefore, the information that a merger announcement or merger proposal is about to take place will be considered as good news for the shareholder of target firms and as bad news for the acquiring shareholders.

10.2.3. Data analysis and empirical findings

Table 10.2. provides the results from this study which demonstrate that the bidding firms earn little gain and target firms obtain larger gains. Hence, in general, the bidding firms are "steady" but the target firms are "better off". The findings from this study are in line with the previous studies and the Hubris theory of mergers and acquisitions.

Table 10.2. Cumulative abnormal return for the bidding and target firms (10 days before until 10 days after the merger announcement)

C A R	Market model	Market adjusted	Overall
Bidder	0.50%	1.63%	steady
Target	4.26%	17.81%	better off

The data shown at Table 10.3. and Table 10.4. are the cumulative abnormal returns for the bidding and target firms after the merger outcome is known (t=0 to t=10 days). The former provides the cumulative abnormal return for acquisition of more than 50% and the latter provides the cumulative abnormal return for acquisition of less than 50%.

Table 10.3. Cumulative abnormal return for the bidding and target firms (for acquisition of more than 50%)

C A R	Market model	Market adjusted	Overall
Bidder	-1.30%	1.21%	steady
Target	-5.10%	-1.96%	worse off

Table 10.4. Cumulative abnormal return for the bidding and target firms (for acquisition of less than 50%)

C A R	Market model	Market adjusted	Overall
Bidder	0.04%	1.03%	better off
Target	-5.12%	0.91%	worse off

The acquisition of more than 50% and the acquisition of less than 50% of target shares almost show similar results. However, in both acquisitions, the shareholders of the bidding firms seem to be in a better position compared with the shareholders of target firms. From both Table 10.3. and Table 10.4., in general, the acquiring firms earn positive but small gains, and conversely, the shareholders of the acquired firms suffer a loss on average.

However, the acquisition of less than 50% creates a better abnormal return for the shareholders of the acquiring firms because their cumulative abnormal return looks slightly higher than an acquisition of more than 50%. Therefore, the shareholders of bidding firms are slightly better off when they takeover less than 50% of target interests.

Meanwhile, the acquisition of more than 50% and the acquisition of less than 50% are not different in terms of the cumulative abnormal return for the shareholders of target firms. They obtain negative cumulative abnormal returns or very little gain from the merger outcome. Therefore, in both acquisition schemes the shareholders of the target firms are likely to be the losers regardless of the outcome of the merger.

The findings from Table 10.3. and Table 10.4. show an opposite result to the Hubris hypothesis in which the shareholders of target firms are always the winners because they normally earn large gains around the announcement of a merger proposal.

The overall findings of this study for the shareholder wealth effect can be found in Table 10.5. which outlines that the shareholders of acquiring firms are in a steady or worse position after the announcement of mergers and acquisitions, but they become better off when the merger outcome is known. On the other hand, the shareholders of acquired firms are more likely to be the winners on the announcement day of a merger proposal, but they shift to become the losers when the merger result is known.

Table 10.5. Cumulative abnormal return for the bidding and target firms

	Announcement Period	Outcome Period
Bidder	worse off / steady	better off
Target	better off	worse off

10.3. Conclusion

10.3.1. Shareholder wealth effect

The wealth effect of mergers and acquisitions for the shareholders of target and bidding firms is the most important issue in the study of mergers and acquisitions regardless of the motive behind mergers and acquisitions. The empirical evidence from the event studies show that mergers and acquisitions, in most cases, create a wealth effect for the shareholders of acquired firms which means they generally enjoy a large gain as a result of mergers and acquisitions. The shareholders of acquiring firms do not enjoy capital gain to the extent of the target shareholders. Most of the acquiring firms experience a small gain or break even situation and in some cases they suffer a negative return.

The empirical evidence from accounting studies demonstrate that mergers and acquisitions are profitable investment activities in the short term. Both the target and bidding firms enjoy the benefits of mergers and acquisitions in the short term. The performance of the newly combined firms or individual firm after mergers and acquisitions tends to decrease in the long term.

10.3.2. Event studies

One essential issue discussed in this paper is the method used to measure the abnormal

return from mergers and acquisitions. The best instrument available to measure the returns is arguably the event study method. This method is able to detect any capital gain resulting from a merger or acquisition for the shareholders. Any change in share prices will reflect expectations regarding future cash flows which will be absorbed into the current price. This is not the case with the accounting method which relies on historical data for measurement.

Furthermore, if we want to know the capital gains for shareholders of target and acquiring firms, it becomes a very difficult and lengthy process using the accounting method. It may be several years before the effect of mergers on shareholder returns is known, however, by using share price movements in the share market, information is readily available about the gains realised by shareholders as a result of mergers and acquisitions. Henceforth, it takes considerable time and resources to measure the abnormal return from mergers and acquisitions for shareholders if the accounting method is applied.

10.3.3. The gap from previous studies

Whilst, most of the studies of mergers and acquisitions use the event studies method, there remain some issues to be addressed relating to the outcomes of these studies. Among these are two key issues essential to the understanding of shareholder wealth effect. Firstly, none of the previous research has investigated the effect of acquisitions of more than 50% or less than 50% on shareholder wealth, nor whether this wealth effect is consistent with the Hubris hypothesis. Secondly, most studies measure the abnormal returns over a long period of time, and sometimes up to 5 years, making them prone to bias due to some external factors beyond the control of the firms. Hence, the shorter the measurement, the better the results, because bias can be minimised and the understanding of the merger effect on share prices surrounding the announcement maximised.

10.3.4. The findings from this study

The Hubris theory which suggests that the shareholders of target firms earn a high abnormal return surrounding a merger announcement is no longer valid for all merger conditions. The findings in this study prove that the shareholders of target firms experience a capital loss following the announcement of merger outcomes regardless of whether the acquisition is

more than 50% or less than 50%. Therefore, the shareholders of target firm change position from "winners" at the beginning of merger announcement to "losers" after the merger outcome is known whether this is an acquisition of more than 50% or less than 50%. Consequently, the shareholders of target firms should maximise their wealth effect during the announcement period of merger proposals.

For the shareholders of bidding firms, the announcement of merger outcomes bring them greater wealth compared with the period when they are announcing a merger proposal. The finding shows that the bidding shareholder position is steady during the announcement of a merger proposal, leading to a small but positive abnormal return, which places them in a better position following the announcement of the merger outcome regardless of whether the acquisition is more than 50% or less than 50%.

However, an acquisition of less than 50% displays a slightly better abnormal return for the acquiring shareholder compared with the acquisition of more than 50% of target interests. Therefore, the acquiring shareholders are the real winners in any acquisition process because they not only receive positive gains but they also achieve their motives in acquiring the target firms.

10.4. Policy implication

10.4.1. The shareholders of bidding firms

The Hubris theory suggests that shareholders of bidding firms will suffer after the announcement of a merger proposal, but the finding of this study demonstrates a contrary result. In fact, the shareholders of bidding firms obtain a small gain or this position become steady after the announcement of merger outcomes. The bidding firms at least do not suffer any loss from the acquisition. So, the Hubris theory does not apply to bidding firms when the merger results are known regardless of whether the acquisition is more than 50% or less than 50%. This finding, again, is contrary to the proposition of the Hubris theory which states that the shareholders of bidding firm suffer from merger activity.

The diagram on Table 10.6. displays the finding that regardless of the outcome of mergers and acquisitions whether it is more than 50% or less than 50%, the shareholders of acquiring firms will not suffer any abnormal losses.

Table 10.6. Post-outcome position for the bidding firm

	Acquisition >50%	Acquisition <50%
Bidder	steady	steady

The diagram also demonstrates that, in fact, the acquisition of less than 50% generates better results for the shareholders of bidding firms. Even though in an acquisition of less than 50% the shareholders of bidding firms claim a "steady" position, they obviously have better abnormal returns than in the "steady" position in an acquisition of more than 50% (see Chapters 8 and 9 for more detail).

The implication of this result is that mergers and acquisitions are not a risky investment for the shareholders of bidding firms. The reason is simple : there is no decrease in the value of the firms after completion of mergers and acquisitions. In the beginning, they act as a "risk taker" because they are aware that they may suffer loss as a result of a merger announcement (Hubris theory). However, their risk taking investment will be rewarded at the end of the day when the merger outcome is announced regardless of the percentage interest they acquire of the target firms.

However, the difference in acquisition of more than 50% and less than 50% becomes an essential issue when they have to decide whether they want to maximise shareholder wealth effect. If they acquire less than 50% of target interests, the shareholders of bidding firms will be better off because they will earn a greater abnormal return than if they acquire more than a 50% stake in target firms.

The acquisition of less than 50% is really a "good investment strategy" for the acquiring firms because they achieve two goals at the same time. First, they may reach their

objective, such as acquiring technology and skill, increasing market share or target market, gaining economies of scale, accessing new markets, etc. These motives will have driven them initially to make any merger decision, and it is important that these motives remain the main objective for them in conducting a merger and acquisition. Consequently, if they have reached these objectives, they may be satisfied, and any loss or gain that results from any merger decision may be secondary to the bidding firms.

Second, the acquisition of less than 50% which generates a slightly better abnormal return for the acquiring shareholders also drives up the value of the bidding firms. Thus, in fact, the bidding firms not only achieve their motives for merger but they also earn a greater abnormal return than the shareholder of target firms.

The acquisition of more than 50% is a "good investment strategy", but it is not as good as the acquisition of less than 50% because the acquiring firms only achieve break even level whilst they also reach their main objective in acquiring the target firms.

For the acquiring firms who act as "risk takers" at the beginning of mergers and acquisitions, they soon become "profit takers" when the merger outcome is known. The shift from 'risk takers' to 'profit takers' indicates that mergers and acquisitions are a "profitable investment decision" for the shareholders of acquiring firms. Either acquisition of more than 50% or acquisition of less than 50% is plausible for the shareholders of bidding firms and it should not be abandoned because it represents a profit opportunity.

10.4.2. The shareholders of target firms

Shareholders of target firms enjoy a significant abnormal return during the announcement of a merger proposal. They earn a high cumulative abnormal return during that period which is in line with the Hubris theory. However, they do not enjoy a high abnormal return after the merger outcome is announced, and consequently, they are very likely to be the losers at the end of the day.

Table 10.7. shows that the target firms are worse off after the merger outcome is announced, regardless of whether the outcome is more than 50% or less than 50%. The

finding that these target firms are worse off after the outcome is known, strongly rejects the Hubris theory which proposes that target firms would be better off after merger.

Table 10.7. Post-outcome position for the target firm

	Acquisition >50%	Acquisition <50%
Target	worse off	worse off

The implication of this situation is that shareholders of target firms should maximise their wealth effect on mergers and acquisitions during the announcement of merger proposals. In this period, the shareholders of target firms act as "profit takers" because the value of their firms is very high (Hubris theory), and hence, they can enjoy greater gains as a result of the merger proposal. The acquiring firms are prepared to pay a high premium for their merger proposal and the target firms are also ready to sacrifice their stake as long as they are rewarded with a high premium.

Since the objective of the firms is to maximise the shareholder wealth effect, the shareholders of target firms should not reject any merger proposal because, in fact, the merger proposal will bring them increased wealth. The abnormal return emerges from the merger proposals as a "special event" that may not arise in normal conditions.

Furthermore, the loss suffered by target firms after the merger outcome is known explains that the market for corporate control has been completed. There is no more speculation about the market for corporate control as the news has signalled a negative return. Therefore, the shareholders of target firm should take into account any merger proposal which is offered by the bidding firms in the beginning. The capital gain which results from any merger proposal should be captured and capitalised in the announcement period rather than in the outcome period. The argument behind this is simple, generally speaking the shareholders of target firms become the losers at the end of the day.

10.5. Areas for further research

There are some areas in this study which need to be investigated for further understanding. First, the shareholders of bidding firms earn small gains after the announcement of a merger result. This is a reverse condition compared with the announcement of merger proposals in which they mostly obtain a negative abnormal return. What conditions influence this change and what is the source of this change ? Further research on this issue will clarify why the Hubris theory can not explain the wealth effect of the bidding firms after the merger outcome is known.

In addition, there is a need to understand why the acquisition of less than 50% generates better abnormal returns for the shareholders of bidding firms rather than the acquisition of more than 50% of target interests. It is quite premature to conclude that the premium for control is the only factor which will affect the difference in abnormal returns between an acquisition of more than 50% and an acquisition of less than 50%.

Second, the shift of status from "better off" to "worse off" which occurs for the shareholders of target firms is also a matter for further investigation. When the merger proposal is announced, they obtain a high gain, but when the merger outcome is known, they suffer a capital loss regardless of whether the acquisition is less than 50% or more than 50%. The failure of the target firms to earn any capital gain after the outcome is known is an important issue for further study. The main question is whether there is any transfer of wealth from the shareholders of target firms to the shareholders of bidding firms and also it is essential to know the factors which influence the change in wealth effect. Another important question which needs addressing in a further study is why the Hubris hypothesis does not explain the loss suffered by the target firms.

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Appendices

Appendix A
List of Bidding Firms

Bidder	ASX code	Announcement Date	Outcome Date	Result
AAPC Limited	AAD	26/03/96	19/04/96	<50%
Acacia Resources	AAA	29/02/96	05/03/96	<50%
Amalgamated Holdings	AHD	01/03/96	12/04/96	<50%
Ashton Mining	ASH	22/11/96	15/01/97	>50%
Australian National Industries	ANI	03/08/94	11/10/94	>50%
Australian Resources	ARS	01/05/95		
Austrim Limited	ARL	23/06/97	08/07/97	<50%
Austrim Limited	ARL	24/09/97	11/11/97	>50%
Avatar Industries	AVR	15/06/94	11/08/94	<50%
Axiom Properties	AXI	21/05/97	20/08/97	>50%
Beach Petroleum	BPT	16/12/93	20/04/94	<50%
Beach Petroleum	BPT	20/05/94		
Beaconsfield Gold	BCD	19/04/96	10/07/96	<50%
BHP Steel Pty Ltd	BHP	18/12/95	07/02/96	>50%
Biota Holdings	BTA	20/04/93	09/08/93	>50%
Boral Limited	BOR	01/09/93	08/11/93	>50%
Brambles Australia	BIL	08/09/97	07/10/97	>50%
Brambles Industries	BIL	24/12/96		
BRL Hardy	BRL	04/04/96		
Burmine Limited	BUR	27/01/94	23/05/94	>50%
Capital Energy	CAE	22/01/96	08/03/96	<50%
Carlton and United Breweries	FBG	20/11/96	06/12/96	<50%
Centennial Coal Company	CEY	19/09/96	31/10/96	<50%
Consolidated Gold	CGL	21/03/96	19/04/96	<50%
Davids Limited	DVD	28/03/96	17/04/96	<50%
Eagle Mining Corporation	EMN	04/05/95	20/06/95	>50%
Edico Pty Ltd	EDI	26/04/96	08/05/96	<50%
Eftus Investments	DAR	28/06/96	09/08/96	>50%
Evans Deakin Industries	EDI	01/12/95	11/01/96	<50%
FBG Investment Pty Ltd	FBG	11/12/95	07/02/96	<50%
Finders Gold	FIG	15/12/93	23/03/94	<50%
Forsayth NL	PLU	29/12/95	15/02/96	<50%
Futuris Corporation	FCL	05/07/96	17/07/96	<50%

Appendix A
List of Bidding Firms

Bidder	ASX code	Announcement Date	Outcome Date	Result
G.U.D. Holdings	GUD	15/04/96	15/05/96	<50%
Gold Mines of Australia	GMA	11/08/93	24/12/93	>50%
Gold Mines of Australia	GMA	03/06/94		
Goldfields Kalgoorli	GKL	28/02/94		
GPG Pty Ltd	GSP	28/06/96	09/08/96	<50%
Great Central Holdings	GCM	21/08/97	08/10/97	>50%
Great Central Investments	GCM	21/08/97	01/10/97	<50%
GWA Group	GWT	18/05/95	28/06/95	>50%
Hancock & Gore	HNG	07/04/93	22/07/93	>50%
Hancock & Gore	HNG	18/02/97	23/04/97	>50%
Haoma Mining	HAO	27/11/95	22/07/96	>50%
Hills Industries	HIL	03/02/97	18/02/97	>50%
Hydromet Corporation	HMC	02/06/95		
IAMA Pty Ltd	IAM	16/09/96	31/01/97	<50%
Innerhadden Limited	IHN	04/11/96	20/12/96	>50%
Intellect Holdings	IHG	20/01/97	19/03/97	<50%
Kilkenny Gold	KYD	24/06/97	08/09/97	<50%
Lachlan Resources	LLR	16/05/96	03/07/96	<50%
Lemvest Limited	LEV	27/10/94	27/02/95	>50%
Metals Exploration	MEX	15/04/93	26/05/93	<50%
Mildara Blass	FBG	12/04/96	29/05/96	<50%
Normandy Mining	NDY	14/06/96	19/07/96	<50%
Nova Pacific Capital	NPC	10/01/97	03/03/97	<50%
Otter Investments	OTR	18/10/95	05/02/96	>50%
Pacific BBA Industries	PBB	30/04/96	08/08/96	<50%
Pacific Islands Gold	PIG	09/04/96	24/04/96	<50%
Placer Dome Holdings Pty Ltd	PDG	28/11/96	30/12/96	<50%
Q.U.F. Industries	QUF	30/09/93	09/12/93	>50%
Resolute Resources	RSG	25/03/93	20/07/93	>50%
Resolute Resources	RSG	07/07/93	19/10/93	>50%
RGC Limited	RGC	24/06/96	31/07/96	<50%
Ridley MI	RIC	27/06/96	19/08/96	<50%
Schaffer Corporation	SFC	06/04/95	27/06/95	>50%

Appendix A
List of Bidding Firms

Bidder	ASX code	Announcement Date	Outcome Date	Result
Simeon Wines	SWS	23/04/97	08/07/97	<50%
Sipa Resources	SRI	27/03/97	01/05/97	<50%
Sons of Gwalia	SGW	17/01/96	22/02/96	<50%
Sons of Gwalia	SGW	08/08/96	22/10/96	>50%
Southcorp Wines	SRP	30/04/96	09/05/96	<50%
St Barbara Mines	SBM	13/03/97		
Tennyson Holdings	TNY	14/05/93		
Titan Resources	TIR	09/08/93	19/11/93	>50%
Village Roadshow Pty Ltd	VRL	13/03/97	26/05/97	>50%
Walhalla Mining Company	WLH	22/08/94	04/01/95	>50%
Wesfarmers Limited	WES	26/05/94	23/06/94	>50%
Westgold Resources	WGR	29/04/96		
Woolworths International	WOW	15/10/97	26/11/97	<50%
Xenolith Gold	XEN	13/09/93		

Appendix B
List of Target Firms

Target	ASX code	Announcement Date	Outcome Date	Result
Blue Line Cruises	BCR	26/03/96	19/04/96	<50%
Blue Line Cruises	BCR	01/03/96	12/04/96	<50%
Australian Diamond Exploration	ADE	22/11/96	15/01/97	>50%
Melcann Limited	MEL	08/06/93	18/10/93	>50%
Champion Compressors	CNC	24/09/97	11/11/97	>50%
Hawker Richardson	HWR	23/06/97	08/07/97	<50%
Resource and Industry Limited	RAI	21/05/97	20/08/97	>50%
Lanes Limited	LAN	14/08/97	11/11/97	>50%
Allstate Exploration	ALX	19/04/96	10/07/96	<50%
Gearhart Australia	GAL	07/11/95		
Comlabs Limited	CMB	20/04/93	09/08/93	>50%
Sagasco Holdings	SAG	01/09/93	08/11/93	>50%
Cockburn Corporation	CKC	08/09/97	07/10/97	>50%
Rothbury Wines	RWS	04/04/96		
Defiance Mills	DFM	05/03/97	02/06/97	>50%
Command Petroleum	CPH	02/10/96	02/12/96	>50%
Stirling Resources	SGR	22/01/96	08/03/96	<50%
Ballarat Brewing Company	BAB	20/11/96	06/12/96	<50%
McConnell Dowell Corporation	MDC	19/01/96	11/04/96	>50%
Allied Queensland Coalfields	AQC	19/09/96	31/10/96	<50%
Public Holding Australia	PHA	18/03/93	18/05/93	>50%
Gasgoyne Gold Mines	GGM	22/12/95	29/03/96	<50%
Tasmania Mines	TMM	11/02/93	09/07/93	<50%
Weston Investments	WSI	10/09/97	13/10/97	>50%
Paxus Corporation	PXU	16/06/93	10/08/93	>50%
Datacraft Limited	DAT	25/08/97	24/09/97	>50%
Paragon Resources	PGN	03/03/93	18/08/93	>50%
Gibson Chemical Industries	GCI	29/08/97	03/10/97	<50%
Clyde Industries	CLY	26/04/96	08/05/96	<50%
Freight Links	FLE	28/06/96	09/08/96	>50%
Motors Holdings	MOT	04/07/96	14/08/96	<50%
Mildara Blas	MLD	11/12/95	07/02/96	<50%
Anvil Mining NL	AVL	15/12/93	23/03/94	<50%

Appendix B
List of Target Firms

Target	ASX code	Announcement Date	Outcome Date	Result
Elders Australia limited	EAL	05/07/96	17/07/96	<50%
Sunbeam Victa Holdings	SVH	15/04/96	15/05/96	<50%
Dominion Mining	DOM	03/06/94		
Metana Minerals	MTN	11/08/93	24/12/93	>50%
Eagle Mining Corporation	EMN	21/08/97	08/10/97	>50%
Wiluna Mines	WNA	21/08/97	01/10/97	<50%
Leutenegger Limited	LUT	18/02/97	23/04/97	>50%
Solander Holdings	SLH	07/04/93	22/07/93	>50%
Woodroffe Industries	WDI	03/02/97	18/02/97	>50%
Matlock Mining	MKM	28/09/94	14/12/94	>50%
CP Ventures	CPV	04/11/96	20/12/96	>50%
Techway Limited	TCY	20/01/97	19/03/97	<50%
Comada Energy	CDA	13/04/93	15/06/93	<50%
Azon Limited	AZO	24/06/96	14/08/96	<50%
Doral Mineral Industries	DRM	10/10/96	03/12/96	>50%
CP Ventures	CPV	18/05/93	09/08/93	<50%
Kalmet Resources	KMT	24/06/97	08/09/97	<50%
Archaean Gold	AHG	16/05/96	03/07/96	<50%
Stanley Mining Services	SNY	09/04/97	09/07/97	>50%
Mining World Limited	MWL	09/05/97	18/06/97	<50%
Goldrim Mining Australia	GRM	31/07/97	03/12/97	>50%
Allied Queensland Coalfields	AQC	23/09/96	08/11/96	>50%
Rothbury Wines	RWS	12/04/96	29/05/96	<50%
Greenfields Coal Company	GCC	04/07/97	30/10/97	<50%
Pacific Resources Holdings	PFR	23/05/96	16/10/96	<50%
Ampolex Limited	AMX	14/02/96	26/09/96	>50%
Burmine Limited	BUR	27/09/93	25/11/93	<50%
North Flinders Mines	NFM	14/06/96	19/07/96	<50%
ASC Limited	ANS	02/04/93	01/12/93	<50%
Techway Limited	TCY	10/01/97	03/03/97	<50%
Dome Resources	DOR	09/04/96	24/04/96	<50%
Highlands Gold	HLG	28/11/96	30/12/96	<50%
Placer Pacific	PLP	28/11/96	19/02/97	>50%

Appendix B
List of Target Firms

Target	ASX code	Announcement Date	Outcome Date	Result
Discovery Petroleum	DIP	23/09/96	11/12/96	>50%
Associated Dairies	ADY	30/09/93	09/12/93	>50%
Sea FM	SEF	26/04/96	07/06/96	>50%
Mount Edon Gold Mines	MEG	22/01/97	19/02/97	<50%
Equity In Industry	EII	07/07/93	19/10/93	>50%
Excalibur Limited	EXC	25/03/93	20/07/93	>50%
Cudgen RZ	CUD	24/06/96	31/07/96	<50%
White Joe Maltings	WJM	27/06/96	19/08/96	<50%
Australian Vintage	AVG	23/04/97	08/07/97	<50%
Arcadia Minerals	ARK	27/03/97	01/05/97	<50%
Orion Resources	ORR	08/08/96	22/10/96	>50%
Coldstream Australasia	CLD	30/04/96	09/05/96	<50%
Spatial Systems	SLS	27/02/97	23/05/97	>50%
Normandy Mt Leyshon	NLY	13/03/97		
AHC Limited	AHC	27/08/97	11/11/97	<50%
Lanes Limited	LAN	02/04/96	21/05/96	<50%
Mt Martin Gold Mines	MMG	09/08/93	19/11/93	>50%
Memtec Limited	MET	18/09/97	01/12/97	<50%
Austereo Limited	AUE	13/03/97	26/05/97	>50%
Takoradi Gold	TKG	29/05/97	15/10/97	<50%
Western Minerals	WMI	12/06/97	15/10/97	<50%
Ghana Gold Mines	GGS	28/08/97	04/12/97	<50%
Ramsgate Resources	RGR	29/04/96		
Country Road	CTY	15/10/97	26/11/97	<50%
Primac Holdings	PRH	16/09/96	31/01/97	<50%

Appendix C

The Weighted Share Prices Around the Announcement Days

1. Introduction

This appendix will examine the changes in the share prices of the acquiring and target firms as a result of merger announcements and also the changes in share prices after the merger outcome is known. After the announcement of merger offers or merger outcomes, the share prices follows the information received as to whether a merger offer or an outcome announcement is considered to be good news or bad news. Accordingly, the share prices of the acquiring and target firms will move up or down to reflect this new information.

The weighted share prices of bidding and target firms surrounding the announcement days of merger offers or merger outcomes have not been explained very clearly in previous studies, most of them focus more on abnormal returns as a result of merger announcements or merger outcomes. It is important to know the movement of the share prices of the merging firms to discover whether the movement of the share prices follows the same pattern as abnormal returns raised by the shareholders of merging firms. Secondly, the weighted share prices of bidding and target firms is a determining factor which dominantly affects the abnormal returns obtained by the shareholder of merging firms. The further the share price goes up, the more likely an abnormal return is gained by the shareholder, and the further the share price goes down, the more likely an abnormal loss is suffered by the shareholder.

The weighted share price for all firms can be defined as :

$$P_{wt} = \frac{\Sigma \; P_{it} \cdot V_{it}}{\Sigma \; V_{it}}$$

where :

P_{wt} = weighted share price of all firms at the end of day t

P_{it} = price per share of common stock of firm i at the end of day t

V_{it} = total shares of firm i traded at the end of day t

2. The share price of bidders

2.1. Eleven days prior to and ten days after the announcement.

From Figure C.1. it can be seen that the share price of the bidding firms has reacted to the announcement of merger proposals. The merger news is considered bad news for the investors and shareholders of the bidding firms, and therefore, the share price dropped on the day of the announcement of the mergers and acquisitions. In fact, the share price has dropped since one day before the announcement (t=-1) which may indicate that the information regarding mergers and acquisitions or merger rumours may have entered the market before the day of the announcement. It is clear that the share price tends to decrease for a period of one day before the announcement until one day after the announcement (t=-1 to t=1).

Figure C.1. The weighted share price of bidding firms
11 days prior to and 10 days after the announcement.

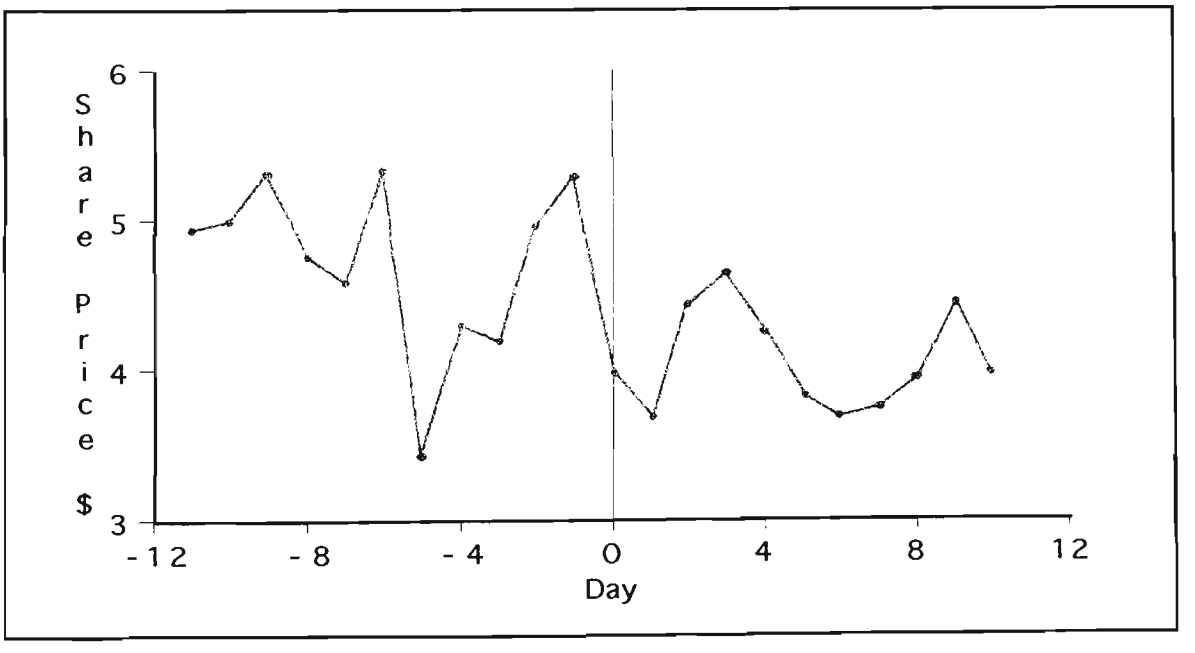


Figure C.1. also demonstrates that the share price of the bidding firms for 11 days before the announcement of mergers and acquisitions fluctuates sharply. The share price of bidding firms five days before the announcement (t= -5) falls significantly compared with 6 days before the announcement (t=-6). This indicates a leakage of information of the merger proposal may have occurred in the market, and that this information has already been absorbed into the share price a few days before the formal offer of mergers and acquisitions.

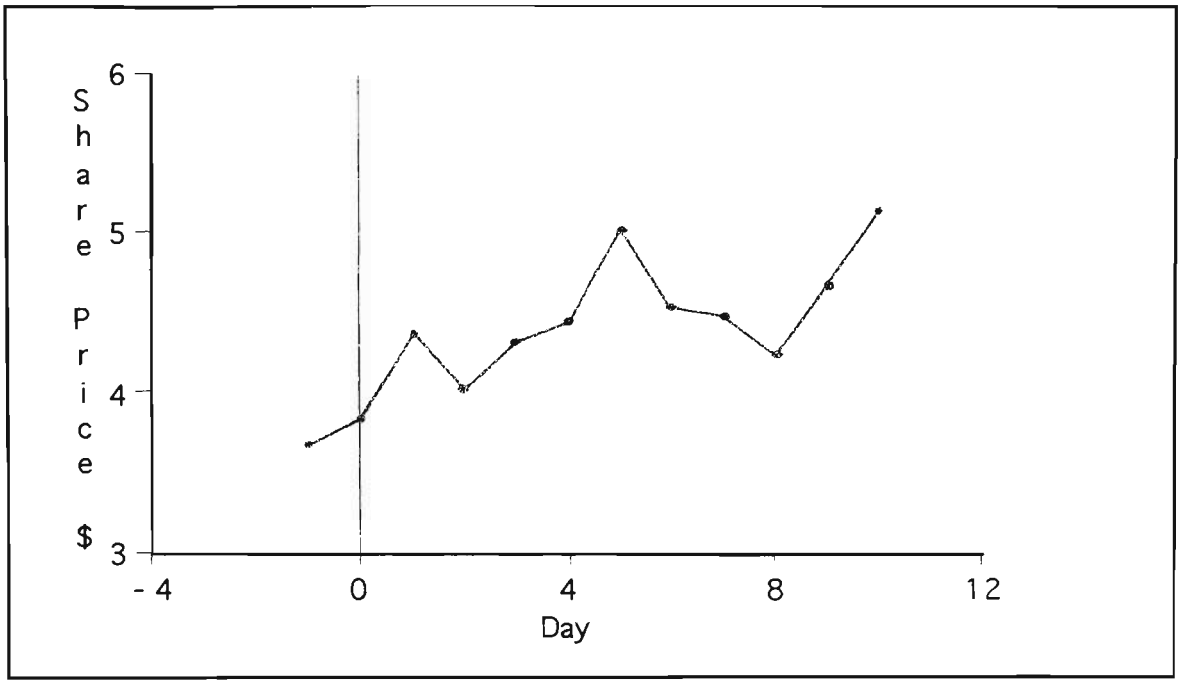
Furthermore, the graph indicates that the share price of bidding firms also fluctuates after the announcement of mergers and acquisitions. This may indicate that the shareholders and investors of the bidding firms do not know whether the merger proposal is approved or rejected by the target firms. In addition, the share price tends to decrease 10 days after the announcement, and the average share price is lower compared to the share price before the announcement of mergers and acquisitions.

2.2. Ten Days after the result is known.

From Figure C.2., the share price of bidding firms reacts positively to the news of mergers results regardless of whether acquisitions of more than 50% or less than 50% occur. On the day when the result of mergers is known, the price increases and it tends to move up during the 10 day measurement. The shareholders and investors of bidding firms are likely to see this result as good news for them as already reflected in the share price.

This result is in contrast to the share price of bidding firms after the announcement of mergers and acquisitions in Figure C.1. where the announcement of mergers and acquisitions is considered bad news for the shareholders and investors, and therefore, the share price reacts negatively. Further, in Figure C.1. during the 10 day measurement, the share price fluctuates sharply while the share price of bidding firms after the merger outcome is known has a tendency to move up.

Figure C.2. The weighted share price of bidding firms
10 days after the result is known



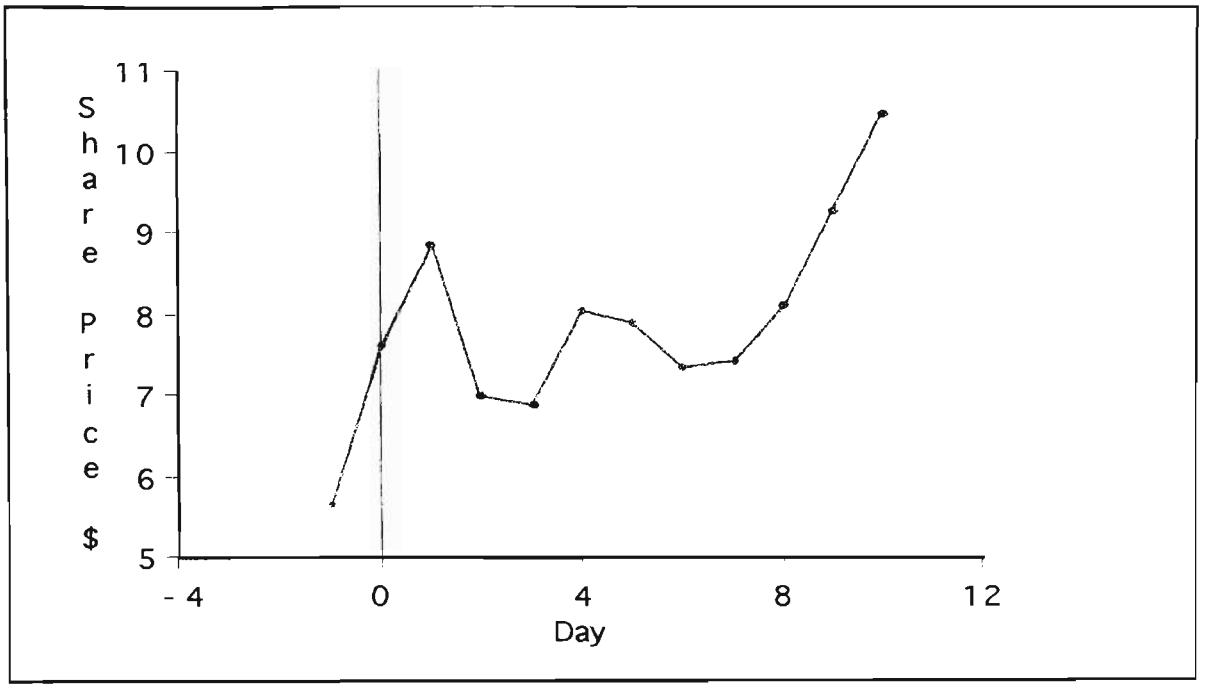
The share price of bidding firms is volatile before the merger proposal is announced and it tends to decrease after the announcement of merger offers (Figure C.1), but the share price trend is to increase after the merger result is known (Figure C.2).

2.3. For acquisition of more than 50%.

The changes in share prices for the bidding firms for the acquisition of more than 50% can be seen in Figure C.3. This reveals that the share price reacts positively when the bidding firms acquire more than a 50% interest in the target firms. The shareholders and investors cite this news as good news, and accordingly the share price rises on the day when the result is known.

In addition, the share price trend is to increase during the 10 day measurement. Shareholders and investors may expect some benefits if their firms can obtain more than 50% interests in the acquired firms as they may believe that the potential benefits resulting from mergers and acquisitions increase the market value of their shares. This result is in line with the argument that mergers and acquisitions can maximise shareholders' value.

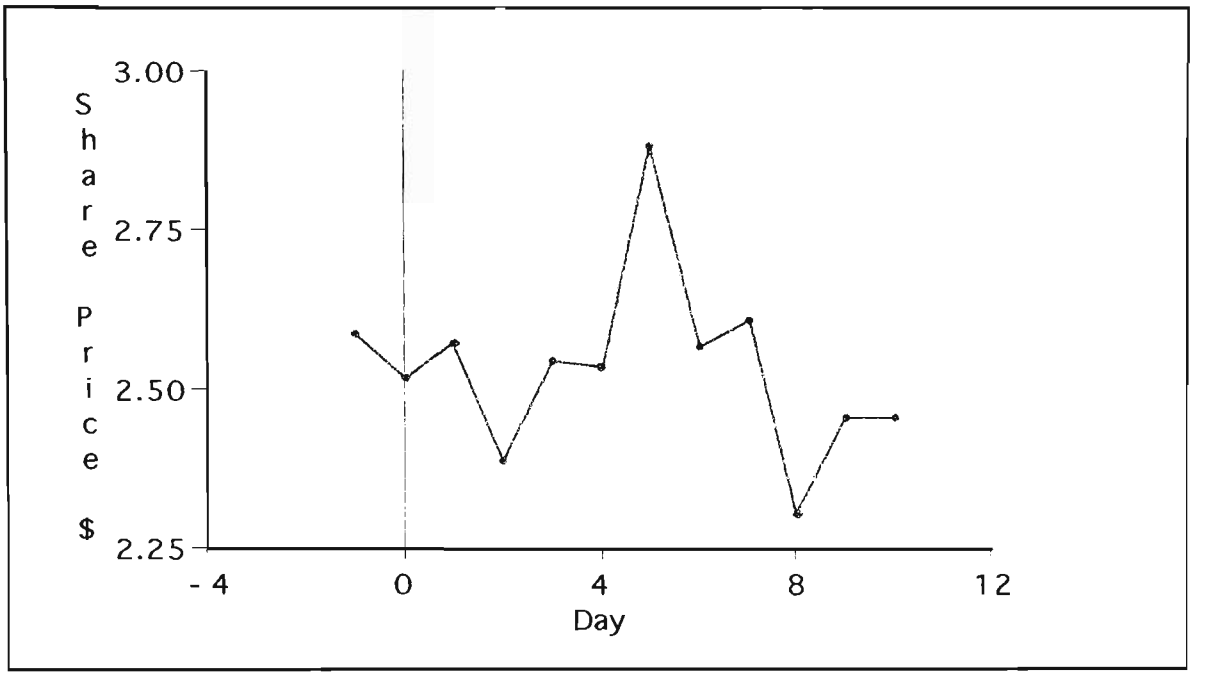
Figure C.3. The weighted share price of bidding firms
for acquisition of more than 50%
(10 days after the result is known)



2.4. For acquisition of less than 50%.

In Figure C.4. the share price changes after the result is known where the bidding firms acquire less than 50% interests of the target firms is shown. On the day when the result is known (t=0), the share price falls, and fluctuates for the period of day 1 until day 10 (t=1 to t=10). The acquiring share price is highest on day 5 (t =5) and lowest on day 8 (t =8). The acquisition result of less than 50% is cited as bad news for the shareholders and investors. Unlike the acquisition of more than 50% which creates optimism, the acquisition of less than 50% creates uncertainty for shareholders and investors. An acquisition of less than 50% is considered as unlikely to generate as many benefits as the acquisition of more than 50%. Consequently, the fluctuation in the share price may reduce the shareholder wealth effect.

Figure C.4. The weighted share price of bidding firms
for acquisition of less than 50%
(10 days after the result is known)



When the result of the acquisition is known to be more than 50%, the share price of bidding firms tends to increase (Figure C.3). On the other hand, the share price is volatile and tends to decrease when the result is known to be less than a 50% acquisition (Figure C.4). This implies that the acquisition of more than 50% creates benefits for shareholders and investors.

3. The share price of target firms

3.1. Eleven days prior to and ten days after the announcement.

Figure C.5. provides the movement of share prices of target firms during the 11 days before the announcement until 10 days after the announcement of mergers and acquisitions. Nine days before the announcement (t=-9), the share price rises sharply lasting until seven days before the announcement (t=-7). This may indicate that a rumour of proposed mergers and acquisitions has come early to the market before the formal announcement takes place.

Figure C.5. The weighted share price of target firms
11 days prior to and 10 days after the announcement

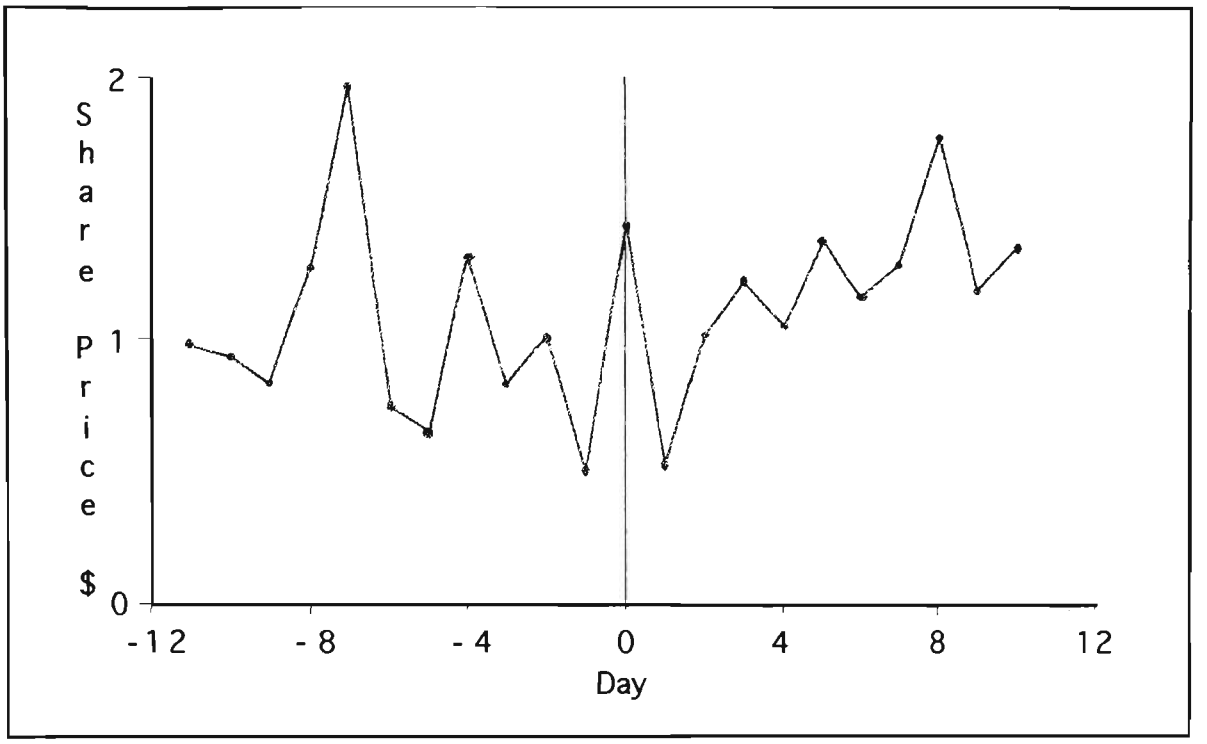


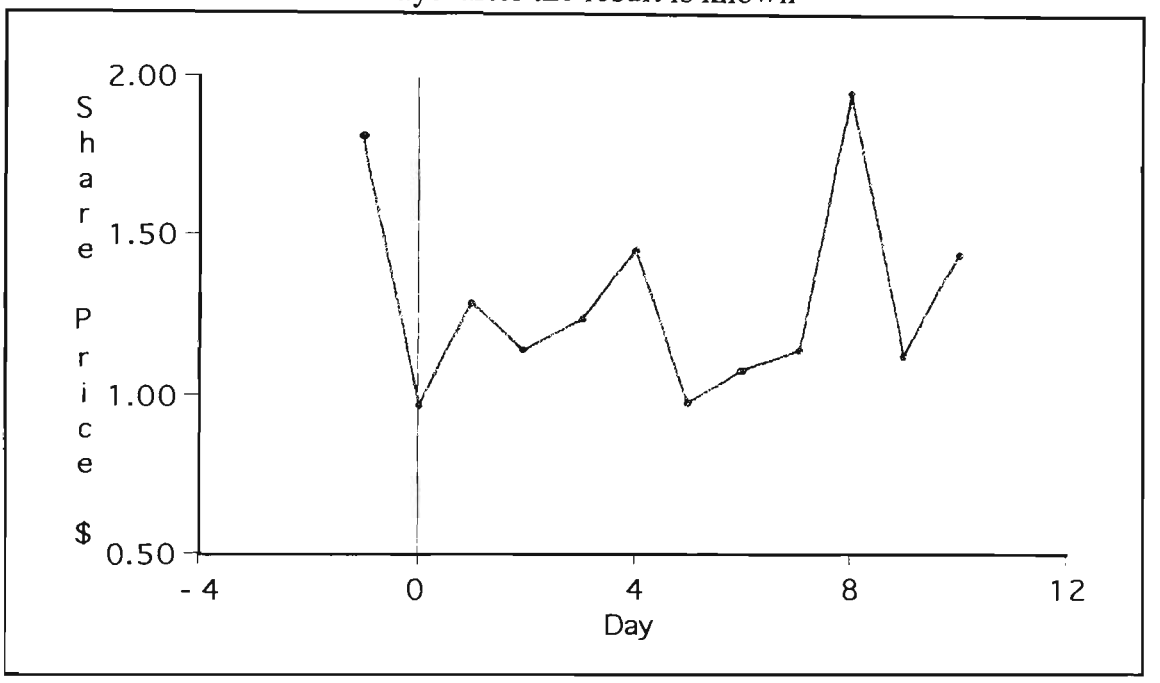
Figure C.5. reveals that the merger and acquisition proposal offered by bidding firms is treated as good news by target firms in the market. On the day of the announcement of mergers and acquisitions (t=0), the share price of acquired firms reacts positively following the news. The share price rises significantly compared with the day before the announcement (t=-1). Shareholders and investors may thus consider that the merger proposal will drive up the value of the acquired firms, and therefore, the high share price on the day of the announcement of merger proposal reflects their expectation of future benefits.

From Figure C.5., it is also clear that the share price of the target firms 10 days after the announcement of mergers and acquisitions tends to move up during that period. One day after the announcement (t=1), the share price decreases but after that the share price trend is to increase gradually. This can be interpreted as the shareholders and investors believing that merger proposals will generate some advantages for the acquired firms. This situation also create optimism in shareholders and investors that the merger proposal will drive up the value of their shares which in turn will maximise their wealth effect.

3.2. Ten days after the result is known.

When Figure C.6. is considered, it can be seen that unlike the announcement of mergers and acquisitions, the announcement of merger results (regardless of whether they involved an acquisition of more than 50% or less than 50%) is not considered good news for shareholders and investors in the market (Figure C.6). The share price drops on the day when the result is known (t=0). This is in contrast to the share price of the bidding firms (see Figure C.2) when the result is known. In this case, the share price of the bidding firms rises on the day when the merger result is known .

Figure C.6. The weighted share price of target firms
10 days after the result is known



It is also evident from Figure C.6. that the share price of target firms for t=1 to t=10 rises and falls reflecting uncertainty among the shareholders and investors about the direction of the acquired firms after the merger. They are still uncertain as to whether the mergers and acquisitions that have occurred will create further benefits for the target firms and their shareholders. This result shows an opposite direction from the bidding firms and their share prices which tend to increase for the same period (Figure C.2).

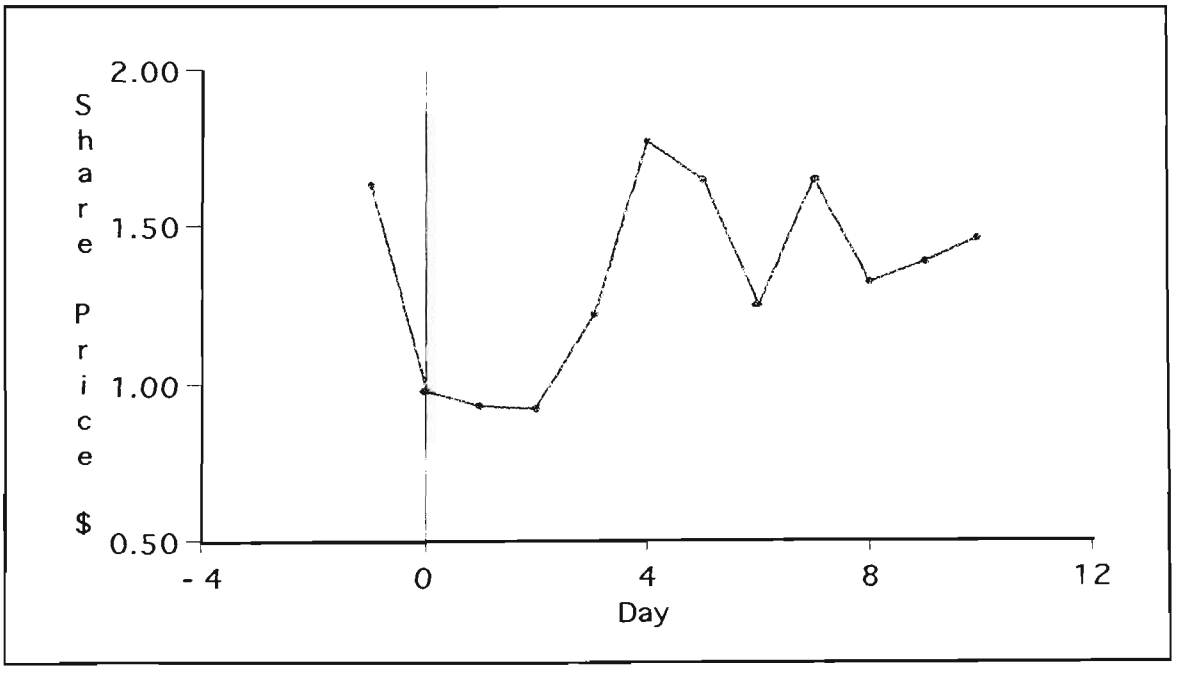
If we compare Figure C.5. and Figure C.6., it is clear that the share price of target firms is volatile before the announcement of merger offers and tends to increase after the offer is

announced. When the merger outcome is known, the share price regains its volatility indicating uncertainty among the shareholders and investors.

3.3. For acquisition of more than 50%.

For acquisition of more than 50%, the share price of the target firms falls on the day when the result is known (Figure C.7). The share price moves down slightly until t=2, but after that, the share price of target firms has a tendency to move up until t=10. It is interesting that the news of merger results involving more than 50% acquisition is not considered good news for shareholders and investors initially. This may be due to uncertainty regarding the direction of the acquired firms after the merger takes place as to whether their target firms will be liquidated or dissolved, change structure, change name or still exist as formerly in the situation. However, the trend of increasing share price for the period of t =3 until t=10 demonstrates that the shareholders and investors may have been convinced by the management of the bidding firms that their acquired firms will benefit from the mergers and acquisitions, and one of the benefits, at least, has been reflected in the increase of share prices.

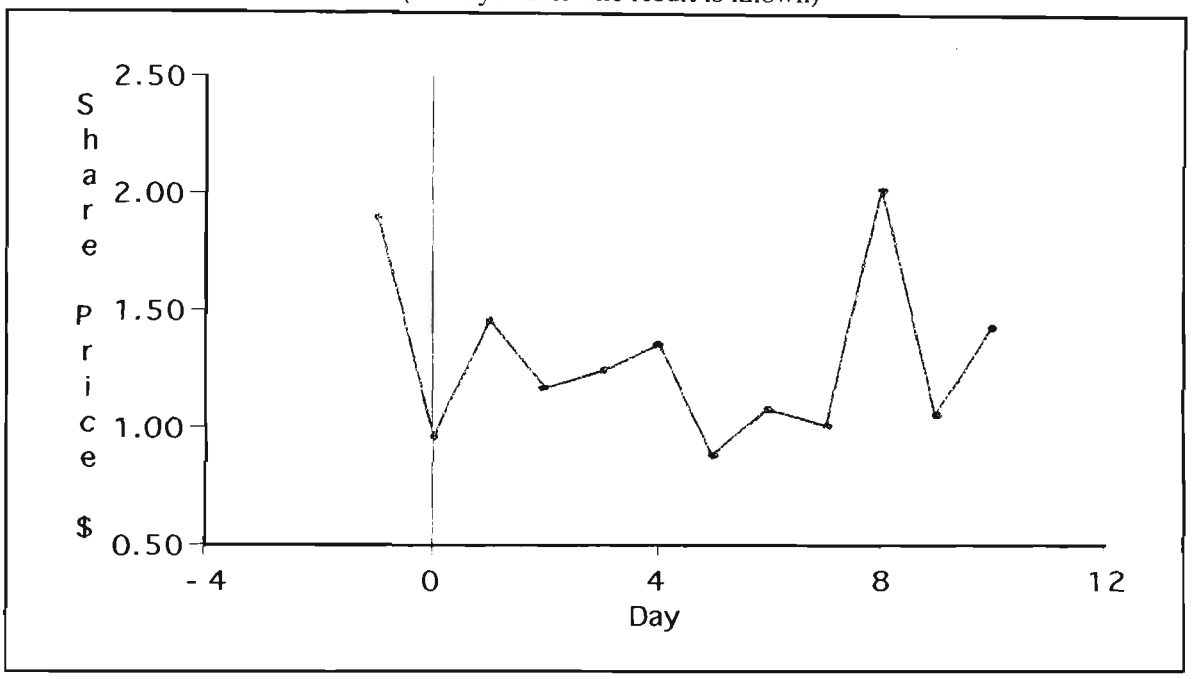
Figure C.7. The weighted share price of target firms
for acquisition of more than 50%
(10 days after the result is known)



3.4. For acquisition of less than 50%.

When Figure C.8. is analysed, it can be seen that the share price of the target firms for acquisition of less than 50% also decreases on the day of the announcement of the merger results. When the outcome is known to be less than a 50% acquisition, the shareholders and investors may behave that this is bad news. They may think that an acquisition of less than 50% does not create as many benefits or synergies as they are expecting. This behaviour is similar to that in cases of acquisition of more than 50%.

Figure C.8. The weighted share price of target firms
for acquisition of less than 50%
(10 days after the result is known)



The share price continues to fluctuate for the period of t=1 until t=10, with the highest price for this period on t =8. The uncertainty of future benefits in case of an acquisition of less than 50% is a vulnerable situation for target firms which results in an unstable share price during that period. This result is different from the share price of the target firms for an acquisition of more than 50% which shows positive signs of increasing share prices (see Figure C.7). Therefore, the shareholders of target firms are less optimistic over the future benefits for their firms when there is an acquisition of less than 50%.

The share price of target firms is still volatile after the merger outcome is known to be either more than 50% or less than 50% (Figure C.7 and C.8), however, the acquisition of more

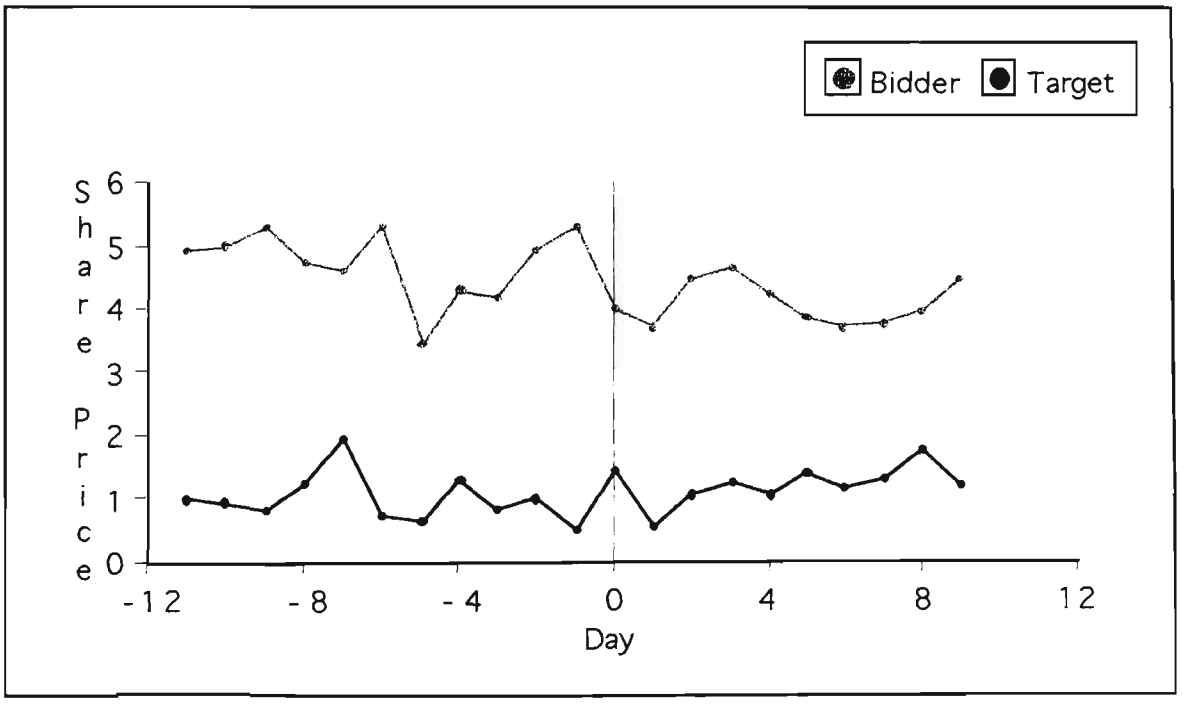
than 50% is believed to generate better returns and this is reflected in the share price trend which rises.

4. Comparative share price of the bidding and target firms

4.1. Eleven days prior to and ten days after the announcement.

Figure C.9. compresses the measurement of share prices of bidding and target firms. It shows that the share prices of biding and target firms are volatile before the announcement of mergers and acquisitions. From one day before the announcement until the announcement day (t=-1 to t=0), the share price of bidding firms starts to fall whereas the share price of target firms starts to rise. This situation indicates that the announcement of mergers and acquisitions has been viewed as a good news for target firms and as bad news for bidding firms. Furthermore, the share price of bidding and target firms returns to normal fluctuation after the announcement of mergers and acquisitions. However, the share price of target firms tends to increase gradually after the announcement of mergers and acquisitions.

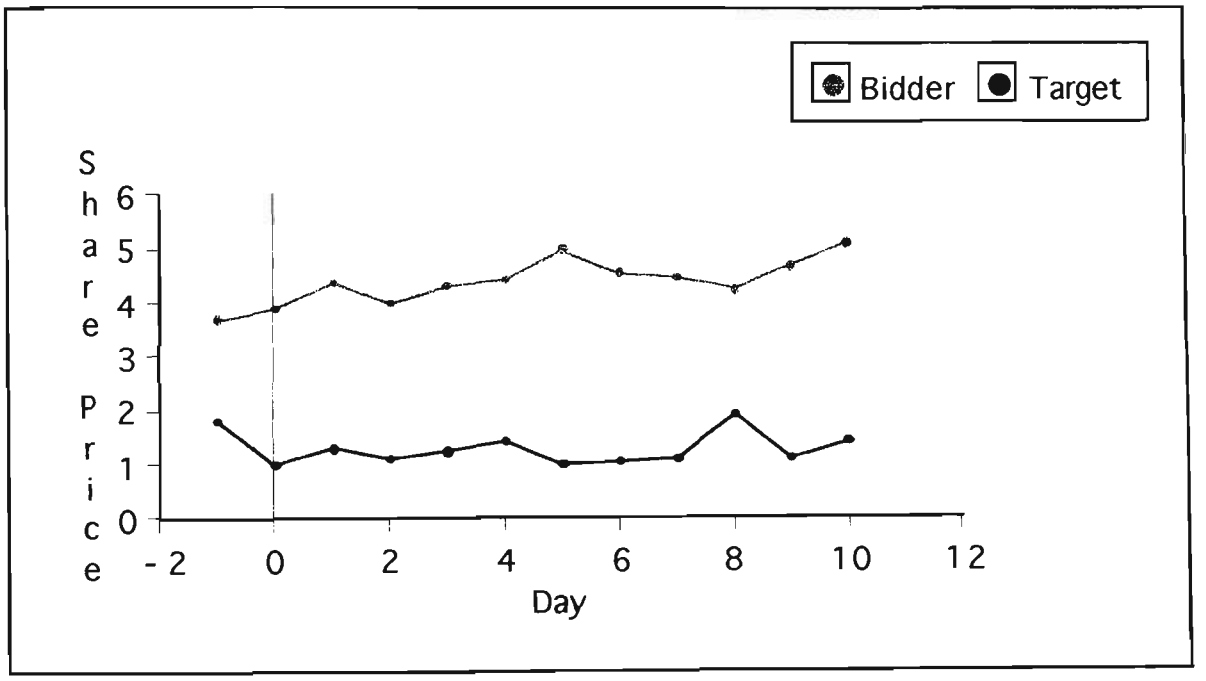
Figure C.9. The weighted share price of bidding and target firms
11 days prior to and 10 days after the announcement



4.2. Ten days after the the result is known.

Figure C.10 charts share prices of bidding and target firms after the merger outcome is known. When the merger result is known to the public (t=0), the share price of bidding firms increases slightly, and continues to climb for the 10-day measurement. The announcement of merger result is good news for the shareholders of bidding firms regardless of whether the acquisition is less than 50% or more than 50%. In contrast, the share price of target firms decreases on the announcement of merger result, and hence, the announcement day of merger outcome is bad news for the shareholders of target firms. Nevertheless, the share price of target firms return to a stable condition from one day until ten days after the merger outcome is known (t=1 to t=10).

Figure C.10. The weighted share price of bidding and target firms
10 days after the result is known

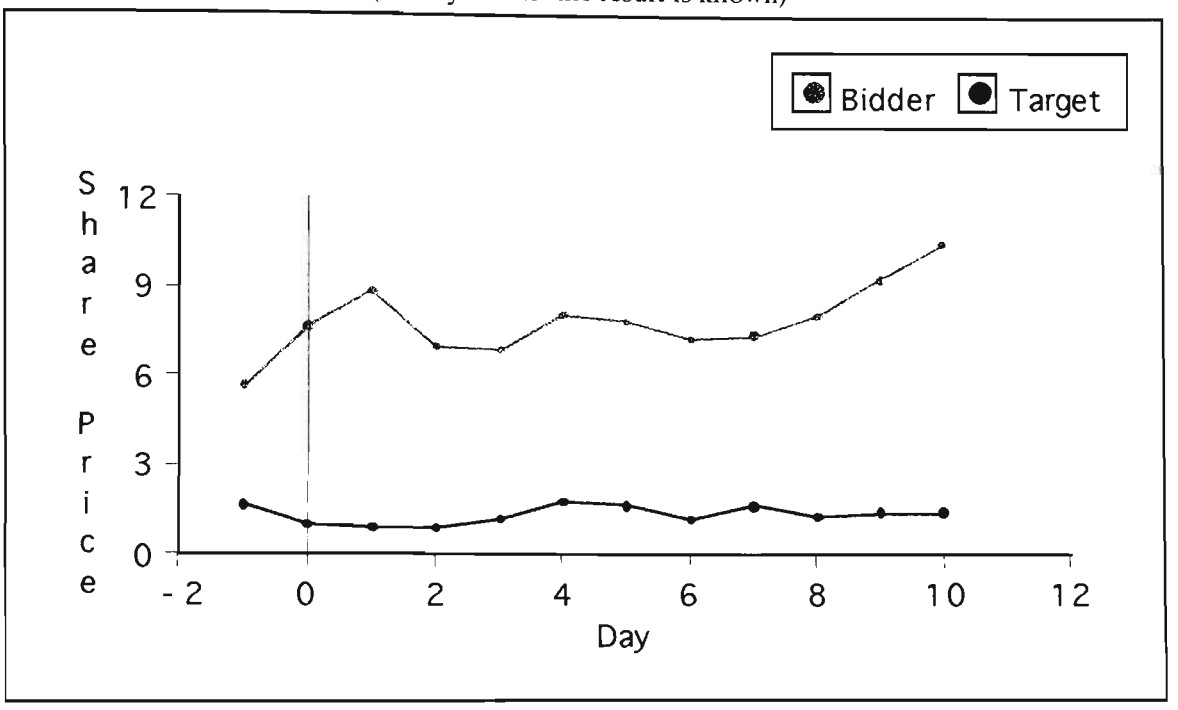


4.3. For acquisition of more than 50%.

The weighted share prices for bidding and target firms when the merger result is more than 50% are shown in Figure C.11. The chart indicates that the share price of bidding firm rises in reaction to the acquisition of more than 50%. The shareholders consider the acquisition of more than 50% good news, and therefore, the share price continues to rise gradually over

the 10-day measurement. The share price of target firms declines when the result is known to be more than 50%, and after that the share price has a tendency to move up gradually and is stable for the 10-day period. Therefore, the acquisition of more than 50% is also considered good news for the shareholders of target firms.

Figure C.11. The weighted share price of bidding and target firms for acquisition of more than 50%
(10 days after the result is known)

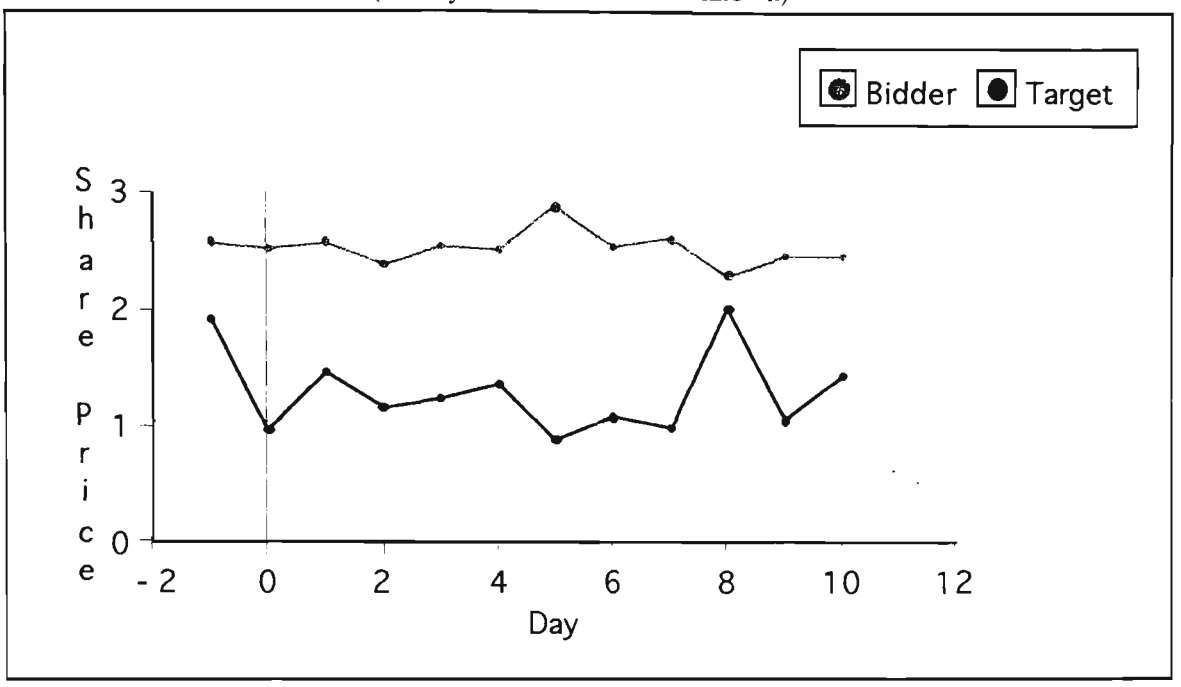


4.4. For acquisition of less than 50%.

The weighted share price for acquisition less than 50% is shown in Figure C.12. The announcement of merger results of a less than 50% acquisition does not affect the share price of bidding firms considerably. The share price reacts slowly when the merger result is known to be less than 50%, and the share price moves normally after the announcement of merger results.

Meanwhile, the news that the acquisition is of less than 50% is considered to be bad news for the target shareholders. The share price of target firms reacts negatively to this news and plunges quite significantly following the news. The share price remains volatile after the announcement of merger results indicating that the shareholders of target firms are uncertain about the future benefits of the merger results.

Figure C.12. The weighted share price of bidding and target firms for acquisition of less than 50%
(10 days after the result is known)



5. Summary

The share price of the bidding firms reacts differently on various occasions. When the merger proposal is announced to the public, the share price of the bidding firms drops significantly, but increases slightly when the merger outcome has been announced publicly regardless of whether the acquisition is more than 50% or less than 50%. When the bidding firms are known to acquire more than 50% of target shares, the share price tends to increase over the period of 10 days following the announcement of merger outcomes. Meanwhile, when the bidding firms are known to acquire less than 50% of target shares, the share price of bidding firms fluctuates and tends to decrease following this announcement.

The share price of the acquired firms also shows various results for different scenarios. The weighted share price rises significantly on the announcement day of merger proposals, and falls when the results of mergers are known regardless of whether these involve acquisitions of more than 50% or less than 50%. When the merger outcome is known to be more than 50%, the share price of target firms tends to rise. Furthermore, the share price of target firms fluctuates during the period of 10 days after the merger result is known to be less than 50%.