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Control issues and effects on the stock exchange of Thailand

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CONTROL ISSUES AND EFFECTS ON THE STOCK EXCHANGE OF THAILAND

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USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.
ABSTRACT

This thesis presents a study of merger and acquisition activities on the Stock Exchange of Thailand (SET). The thesis focuses on two key conceptual components: takeover effects on target and bidding firms, and an analysis of the possible motives for the takeovers. This is the first comprehensive Thai takeover study. The takeover sample covers a time period drawn from the years 1992 to 2002. The data and information used in this study was obtained from four major sources: the SET, the SEC, the Datastream, and the Brooker Group Public Co., Ltd. The selection criteria reduced the initial sample from 151 to 52 target firms and 42 bidding firms. Successful takeovers are the main focus of the study and takeover effects during the bid period running between (-12,+12) months are primary focus of the study. The three-stages of event period: pre-bid, bid, and post-bid periods were all examined. 27 alternative classifications of target firms and 80 alternatives for bidding firms were also investigated. The market and market-adjusted (zero-one) models as well as metrics based on a matched reference portfolio method were applied to assess the impact of these events on shareholder wealth. These effects were analysed using cumulative (CAR) and buy-and hold (BHAR) abnormal return measurements. Three parametric and non-parametric statistical significance tests were employed.

The findings show that takeovers result in substantially positive CAARs about 31% for the target firm’s shareholders, and substantially positive CAARs of approximately 26% (estimated from the zero-one model) and small negative CAARs of -1% (estimated from the market model) for the bidding firm’s shareholders. The reported findings are consistent with those of previous studies which reveal the returns for the target and bidding firm’s shareholders are on average significant and positive in the range of 20-30%, and positive as well as negative between +7% and -1% consecutively, including Thai literature, on the whole. Furthermore, the positive CAARs for the target firm’s shareholders are of an order of up to 28% (estimated from the zero-one model) and 31% (estimated from the market model) immediately around the takeover announcement month. The total gains and the combined value of the target and bidding firms are positive at 21.85%, on average, and 25.19% respectively. In addition, there is similar evidence from an examination of both the target and bidding firms, indicating that the market responds to the takeover news as being likely good news before the
announcement month, some two months, and four months (estimated from the zero-one model) and three months (estimated from the market model), at least, respectively.

The investigations of the pre-bid period suggest that the takeover results in positive CAARs over the monthly periods of (-12,-1) of 4% (estimated from the market model) and 27% (estimated from the zero-one model) for the bidding firm’s shareholders. The results are consistent with Malatesta (1983) who applied the market model and used monthly data in the same manner as this study, and Brown and da Silva Rosa (1998) who used different methodologies from this study. The post-bid period investigations indicate that the takeover ultimately leads to demonstrably negative abnormal returns for the bidding firm’s shareholders. The I-t ABHARs and monthly average I-t abnormal returns over the monthly periods (+1,+16) are significantly negative varying from -4% to -6%, and -0.20% (monthly) consecutively. The findings are certainly consistent with the survey of Jensen and Ruback (1983), Agrawal and Jaffe (1999), Bruner (2002) and Campa and Hernandez (2004) which conclude that studies that analyse the long-term performance of bidding firms tend to find significantly negative CAARs.

The innovative findings are shown by the exploration of the five and seven sub-sets of the targets (five sub-sets: later in "REHABCO", later delisted, total repeated, prior selected, and later selected target firms; seven sub-sets: five sub-sets plus the successful and unsuccessful target firms) and the bidders (five sub-sets: single, consortium, total repeated, prior selected and later selected bidding firms; seven sub-sets: five sub-sets plus the successful and unsuccessful bidding firms). The takeover announcement generates positive CAARs for most of these five specific characteristic target and bidding firms’ shareholders in the announcement and after the announcement month, but results in varied positive and positive as well as negative CAARs for most of these seven specific target and bidding firms’ shareholders after the announcement month. The pre-bid period investigations demonstrate that prior to the takeover announcements, these firms display positive CAARs for most of the five and seven specific characteristic bidding firms’ shareholders.

This study used the abnormal return direction and its magnitude for indicating the motives for takeovers. The total gains derived from the positive CAARs of the target and bidding firms suggest that synergy is most likely to be the major motive for the takeovers studied. Those (estimated from the market model) derived from the positive and negative CAARs suggest that agency problems may also induce the takeovers. The methods used in Bradley, Desai, and Kim (1983) and Asquith (1983) were adopted for
investigating the performances of the unsuccessful target firms and successful bidding firms. The evidence is robust and indicates that hubris is also a rationale for these takeovers.
DECLARATION

I certify that this thesis does not, to the best of my knowledge and belief:

(i) incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education.

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First I would like to dedicate this thesis to my parents for providing me with the best foundation to life and for encouraging us to be a loving and affectionate family. Thanks to my brothers and sisters for their support in helping me to achieve my goals and wishes. Special thanks to my third brother, Dr Sompong, for his encouragement and consultations. I also thank my youngest sister, Ampa, and youngest brother, Somchai, for looking after and managing all my businesses during my time as a PhD student.

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CHAPTER 1
INTRODUCTION AND LITERATURE REVIEW

This thesis features a study of merger and acquisition activities in the context of Thailand. It is suggested that a successful merger depends essentially on the two firms’ achieving possible "synergies". The event study methodology utilised has become the standard method used to measure share price reaction to merger or takeover announcements. Consequently, most studies suggest that takeovers create shareholder wealth. However, some other studies support the view that takeovers have negative effects. These arguments can be viewed as the rationale behind merger and acquisition decisions. The majority of existing studies concentrate on developed stock markets whilst very few studies have emphasised developing or emerging stock markets.

This thesis consists of two main components. One makes an original contribution by analysing takeover effects on target and bidding firms. The major metrics used include cumulative average abnormal returns (CAARs) and average buy-and-hold abnormal returns (ABHARs) which provide the key results used for the measurement of the takeover effects on the shareholders. Also, the total gains and the combined values of target and bidding firms are other analytical results presented. The other major component of the study involved in this thesis is an investigation of the motives for takeovers. This chapter discusses the main theoretical literature which provides the context and is related to the research conducted for this thesis.

It is explained that firms can expand internally and externally through mergers. They can also diversify in a variety of ways. Expansion strategies may be internal, relying on retained earnings, equity and debt, or external, relying on formalising relationships with other firms. Internal expansion strategies include product portfolio management, new product development, or geographic diversification. External strategies for growth typically involve mergers and acquisitions which encompass a widening range of activities, including joint ventures, restructuring activities, strategic alliances, and other corporate interactions. A firm is called a diversified firm if it operates in more than one business, market or industry. Basically, diversifications are
classified into related and unrelated, otherwise, according to the US Federal Trade Commission (FTC), these can be classified into product extension, geographical or market extension, and pure conglomerate.

However, a firm’s horizontal boundaries identify the quantities and varieties of products and services that it produces. Moreover, the optimal horizontal boundaries of firms depend critically on the economies of scale and scope. Economies of scale are related to economies of scope, and the two terms are sometimes used interchangeably. Economies of scale exist if the firm achieves unit-cost savings as it increases the production of given goods or services. Economies of scope exist if the firm achieves savings as it increases the variety of goods and services it produces. Thus, economies of scale and scope are present whenever large-scale production, distribution, or retail processes have a cost advantage over small processes. Financial economists have long recognised that the success of a merger depends critically on whether the two firms can achieve economies of scale. Therefore, announcements about corporate mergers often refer to potential “synergies” that exist between merging firms. Synergies are economies of scale and scope waiting to be exploited. When economies of scale or scope exist, one would expect a positive correlation between a firm’s market share and profitability (Besanko, Dranove, & Shanley, 2000, p. 98; Buzzell, Gale, & Sultan, 1975; Jacobson & Aaker, 1985). The previous results are clear, successful diversification combines businesses that can exploit scope economies. Diversification for other reasons tends to be less successful (Basaako, Dranove, Shanley, & Schaefer, 2004, p. 170).

To identify the potential benefits of diversification to shareholders, it is necessary to consider how diversified and focused firms differ. Bhide (1990) suggests two types of differences: first, the dealings of customers, suppliers, lenders, and tax authorities with the diversified firm are affected by the aggregate fortunes of its constituent businesses. Second, there is generally an additional level of administrative or corporate overhead. The corporate managers bring both a cost to the combined organisations as well as the opportunity to manage the combined resources of the different business units.
The related financial theory of corporate diversification is Lewellen's (1971) which argues that the reduction in variance of future cash flows resulting from diversification at the firm level serves to increase the diversified firm’s debt capacity. Another financial implication of corporate diversification is that a diversified firm's cash flows provide a superior means of funding an internal capital market. The supporting reasons are that internally raised equity capital is less costly, the firms avoid the transaction costs associated with the sale of securities to public, as well as the costs of overcoming information asymmetry problems encountered when selling securities in the capital market, and the firm’s managers can exercise better decision control over project selection (See Alchian, 1969; Ghemawat, 2000; Goold & Luchs, 1993; Hadlock, Ryngaert, & Thomas, 2001; Weston, 1970; Williamson, 1975). Furthermore, Stein (1997) suggests that where managers have superior information, they can make a better job of project selection and hence enhance firm value. Importantly, a diversified firm's corporate headquarters can shift funds from operating divisions with limited opportunities to others that are more promising to create shareholder value (Martin & Sayrak, 2003, p. 41). Finally, corporate diversification creates shareholder value by mitigating failures in products, labour, and financial markets, particular in emerging and less developed markets (Khanna & Palepu, 1999; Martin & Sayrak, 2003, p. 42).

However, the fundamental argument made against corporate diversification is that it exacerbates managerial agency problems. If managers tend to over invest when the firm has excess or free cash flows, then access to an internal market for capital in a diversified firm provides a greater opportunity to over invest (Jensen, 1986 and 1993). Alternatively, diversified firms do not have more free cash flows, but managers do a worse job of allocating their resources than focused firms. In this case, it is inefficiency rather than agency costs which can be a result of the information asymmetry problems between the firm’s central management and the management of the operating divisions (Harris, Kriebel, & Raviv, 1982). However, whether capital allocation problems in the diversified firm arise from the misalignment of manager and owner interests, or from intra-organisational coordination problems, the final result is the same, that is, an inefficient allocation of capital within the diversified firm when compared to that of the focused firm (Martin & Sayrak, 2003, p. 42).

1 Cited in Martin and Sayrak (2003, p. 42).
Specifically, diversification has both value-enhancing and value-reducing effects. From a positive perspective, the potential benefits of diversification mean operating different lines of business within one firm include greater operating efficiency, less incentive to forego positive net present value projects, greater debt capacity, and lower taxes. From a negative perspective, the potential costs of diversification include the use of increased discretionary resources to undertake value-decreasing investments, cross-subsidies allowing poor segments to drain resources from better-performing segments, and misalignment of incentives between central and divisional managers. However, it is more likely that theoretical arguments developed during the late 1960s and early 1970s generally address the benefits of diversification, whereas those in late 1970s and 1980 give more negative perspectives on diversification, and more recent papers in 1990s also tend to share positive views (see the merger wave overview in the following section for more details).

There is evidence from numerous studies which show that diversification creates shareholders' wealth, but comes from a variety of sources possibly due to the use of different measurements and approaches.

Weston (1970) contends that diversified firms allocate resources more efficiently because they create a larger internal capital market. It is confirmed by the study of Markides and Williamson (1996), whose findings are based on financial statement analysis, indicate that the relationship between diversification and performance depends on the ability of the diversified firm to gain preferential access to critical resources and share them among business units. Chandler (1977) concludes that multi-division firms are inherently more efficient and profitable than their separated lines of business because they create a level of management concerned with the coordination of specialised divisions. Stulz (1990) argues that diversified firms make more positive net present value investments than segments would make as separate firms because they solve the underinvestment problem described by Myers (1977) by creating a larger internal capital market.

There is additional evidence supporting this conclusion when Villalonga (2004) uses the Business Information Tracking Series (BITS) to examine whether the finding
of a diversification discount is an artifact of segment data and finds a diversification premium. Also, Campa and Kedia (2001) use three alternative econometric techniques to control for the endogeneity of the diversification and conclude that diversification is a value enhancing strategy for those firms that actually pursue it as well as Dodd and Officer (1987) who state that takeovers are value-creating investments. Similarly, Goergen and Reneboog (2002), examine European takeovers and find that target firms earn large takeover announcement effects of 9%, bidding firms earn statistically significant positive abnormal returns of 0.70%, and they conclude that synergies are the prime motivation for takeovers. Hou, Olsson, and Robinson (2000) account for the effects stockholders experience before, during and after the event, and the results provide evidence that takeovers increase the welfare of shareholders in the long run. DeLong (2001) finds that mergers that focus both activity and geography enhance the stockholder value by 3%. Also, Asquith, Bruner, and Mullins (1983), Gregory (1997) and Schipper and Thompson (1983) report that the takeover firm share price rises significantly when they announce takeovers.

Another strand of evidence on the benefits of diversification comes from other views such as the claim that diversification does not destroy shareholder value, diversification increases debt capacity, tax shields, and the internal capital market, and diversification helps reduce agency problems. For example, Santos, Errunza, and Miller (2003) investigate the valuation effects of corporate international diversification by examining cross-border mergers and acquisitions of U.S. acquirers also conclude that international diversification does not destroy value. Lewellen (1971) suggests that another potential benefit of diversification arises from combining businesses with imperfectly correlated earning streams, giving diversified firms greater debt capacity than single-line businesses of similar size. This is consistent with Berger and Ofek (1995) and Majd and Myers (1987) who conclude that diversification increases interest tax shields resulting from higher debt capacity and the ability of multi-segment firms to realise tax savings by offsetting losses in some segments against profits in others. Agrawal and Jaffe (2002) examine both the operating and stock return performance of their sample, indicating that takeovers facilitate internal mechanisms in disciplining bad managers. This is similar to Karpoff and Malatesta (1989) and Karpoff and Rice (1989) and consistent with Agrawal and Knoeber (1996) and Denis and Denis (1995).
All these results are consistent with the earlier studies such as Jensen (1985 and 1986) which emphasise that takeovers generate large benefits to shareholders, including studies that used a financial statement analysis approach like Montgomery (1982) who finds that moderately diversified firms have higher capital productivity (but firms with moderate to high level of unrelated diversification have moderate or poor productivity).

However, as previously mentioned, diversification also has value-reducing effects so that diversified firms cannot always exploit scale and scope economies. For example, in a historical analysis, Nathanson and Cassano (cited in Besanko, Dranove, Shanley, & Schaefer, 2004, pp. 174-175) classified more than 180 U.S. firms from the 1970s, according to their degree of "product diversity" and "market diversity" and find that some firms, such as "Schlitz", "Maytag", and "Zenith", were undiversified on both dimensions. This suggests that economies of scope can come from other sources rather than sharing technology or consumers. Subsequently, Nathanson (cited in Besanko, Dranove, & Shanley, 2000, p. 215) conclude that diversification is associated with deteriorating performance. Also, Edith Penrose, a founder of the "resource-based view of the firms" suggests that economies of scope can come from spreading a firm's underutilised managerial and organisational resources to new areas. Therefore, diversification also has value-destroying effects. Berger and Ofek (1995) find an average loss in value from diversification of between 13 and 15%, similar to Lamont and Polk (2000) and Servaes and Lins (1999). In a recent study, Lins and Servaes (2001) discover that diversified firms trade at a discount of approximately 7% compared to single-segment firms, and diversified firms are less profitable than focused firms. This is consistent with the evidence that the stock market tends to react favourably to increases in corporate focus (see Daley, Mehrotra, & Sivakumar, 1997; Dasai & Jain, 1999; John & Ofek, 1995).

Several studies place more emphasise on the concept of relatedness and unrelatedness. For example, Rumelt (1974) argues that related diversification affects value more positively than unrelated diversifications because skills and resources can be used in related markets. Maksimovic and Phillips (2001) model how conglomerate firms allocate resources across divisions, and find that conglomerate firms are less productive than single-segment firms of similar size. Similarly, Gugler, Mueller, Yurtoglu, and Zulehner (2002), in an international comparison study, note that conglomerate mergers
decrease sales more than horizontal mergers; Meyer, Milgrom, and Roberts (1992) predict that unprofitable lines of business create greater value losses in conglomerates than they would as stand-alone firms; Nayyar (1993) argues that benefits from a positive reputation in an existing business and from economies of scope are available from related not unrelated diversifications; Maquieira, Megginson, and Nail (1998) find negative, but insignificant, returns to bidders in conglomerate deals that are similar to Comment and Jarell (1995) and Liebeskind and Opler (1993)2 (see more in Healy, Palepu, & Ruback, 1992 and 1997; Megginson, Morgan, & Nail, 2000; Walker, 2000); Goergen and Renneboog (2002) note that bidding firms should not further diversify by acquiring target firms that do not match the bidders’ core business.

There is substantial evidence supporting the capital misallocation hypothesis. For example, Stultz (1990) argues that diversified firms invest too much in lines of business with poor investment opportunity. Another related perspective is that diversified firms are inefficient in the allocation of internally generated funds. Shin and Stulz (1998) find that the sensitivity of a segment’s capital expenditures to the cash flows of the other segments within the conglomerate firm does not depend on whether its investment opportunities are better than those of the firm’s other segments. This leads to over investment, or the undertaking of negative NPV projects. That is firms may under-invest in positive NPV projects when the cash flows from the conglomerate firm’s other segments are constrained (Lamont, 1997). Furthermore, Rajan, Servaes, and Zingales (2000) find that the extent of the misallocation of internal funds by diversified firms and the size of the diversification discount are positively related to the diversity of the investment opportunities across divisions. Scharfstein (1998) provides additional evidence supporting the cross-subsidisation hypothesis when he finds that diversified firms invest too much in low Q3 segments and too little in high Q segments. In other words, the sensitivity of divisional investment to Q increases as top management’s equity stake in the firm goes up. Or, described differently, the investment of conglomerate divisions is insensitive to their investment opportunities in contrast, the investment of stand-alone firms is significantly more sensitive to their investment opportunities (Scharfstein & Stein, 2000, p. 2558).

2 Cited in Martin and Sayrak (2003, p. 49).
3 Q is the Tobin’s Q value and is calculated as the book value of assets minus the book value of equity plus the market value of equity divided by the book value of assets (Smith and Watts, 1992). Specifically, Tobin’s Q is an increasing function of the quality of a firm’s current and anticipated projects under existing management (Lang, Stulz & Walkling, 1989, p. 138).
Other strands of evidence on the value destroying effects of diversification come from various sources. For example, Amihud and Lev (1981) show that manager-controlled firms engage in more conglomerate acquisitions than owner-controlled firms and these acquisitions are not of benefit to shareholders because they can reduce their financial risk by managing their own portfolio of investments.

Harris, Hriebel, and Raviv (1982) and Myerson (1982) discuss the information asymmetry costs that arise between central management and divisional managers in decentralised firms. These costs are higher in conglomerates than in focused firms, leading to the diversified firms having less profitability than their separated lines of business. This idea is confirmed by Lins and Servaes (2001) using a sample of over one thousand firms from seven emerging markets who find that the information asymmetry and market imperfections are the cause of a reduction in value.

Eckbo (1983) and Stillman (1983) find that the share price movements of competitive rivals of the bidders do not conform to an increase in market power by bidders. This suggests that the sources of gains from mergers and acquisitions do not derive from the anticompetitive combination of firms. This implies that the market power view is consistent with profit maximisation but not consistent with efficiency (Montgomery, 1994, p. 164). Hopkins (1987) argues that even though market-based diversification performed the best in his sample, it does not outperform the non-diversified firm which is consistent with Eckbo (1992), Mueller (1985) and Ravenscraft and Scherer (1987), who reveal that efforts to enhance market position through mergers and acquisitions yield no better performance, and sometimes a worse one. Also, Capon, Farley, and Hulbert (1988) report firms that restricted their diversification to narrow markets perform better than broadly specialised firms.

Yook's (2003) evidence is consistent with Asquith, Bruner, and Mullins (1987), Huang and Walkling (1987), Travlos (1987) which indicate that stock-based diversifications are associated with significantly negative returns at the announcement due to share overprice signalling. Mitchell, Pulvino, and Stafford (2002) examine the trading behaviour of professional investors around mergers and find that about one half of the negative announcement period stock price reaction to stock-financed mergers is
due to downward price pressure caused by merger arbitrage short selling of acquirers' stocks. This is consistent with Datta, Pinches, and Narayanan (1992).

There is some other different evidence that supports the view of diversification's negative effects. For example, diversified firms tend to have lower Tobin's Q (see Lang & Stulz, 1994; Servaes, 1996; Wernerfelt & Montgomery, 1988); diversified firms face an increased likelihood of being broken up through reorganisation that varies directly with the size of the discount (see Berger & Ofek, 1996; Kaplan & Weisbach, 1992).

At the same time, numerous studies give different explanations about why there are diversification discounts. Jensen (1986, p. 2) argues that takeovers are investments taken under great uncertainty so that not all ventures are successful and those who criticise takeovers and mergers by pointing to those that fail are missing the point. It is also argued that decreased value diversification decisions are motivated by other considerations and in most cases are less successful (Besanko, Dranove, Shanley, & Schaefer, 2004, p. 170). Similarly, Agrawal and Jaffe (2002) note that some takeovers are taken in order to improve poorly performing managers, this is not a predominant motive but it is an additional reason. It is confirmed by Gondhalekar and Bhagwat's (2000) results which suggest that synergy is the motive for takeovers when the total gains are positive and agency costs are the motive when the total gains are negative.

Managerial reasons are widely used in a substantial number of studies for the explanation of poor performance after diversification. For example, Mueller (1969) argues that diversification buys growth. Even though growth is not necessarily unprofitable or inefficient, as long as shareholders are not fully informed about their related benefits, it can mean managers pursue their own objectives at shareholder expense (see details in Jensen, 1986; Murphy, 1985). Jensen (1986) finds that the managers of a firm with considerable free cash flows are more likely to undertake low-benefit or value-destroying mergers. Roll (1986) suggests that managers of bidding firms are influenced by hubris, and so overpay for target firms because they overestimate their own ability to run the firms. Morck, Shleifer, and Vishny (1990) give another view of overpayment suggesting that the managers of bidding firms pursue personal objectives other than the maximisation of shareholder value.
More evidence has been provided in previous studies. Lang, Stulz, and Walkling (1989, p. 145) use the estimates obtained for the whole sample with three-year average of Q, suggesting that the shareholders of a low Q bidding firm making an offer for a high Q target firm lose about 5% on average when the offer is announced, whereas the shareholders of a high Q bidding firm making an offer for a low Q target firm gain about 10% on average. This can be related to the findings of Morck, Shleifer, and Vishny (1988) which suggest that managers of low Q firms are more likely to be entrenched. Subsequently, Denis, Denis, and Sarin (1997) suggest that agency problems are responsible for firms maintaining value-reducing diversification strategies. Rau and Vermaelen (1998) find that the (long-term) underperformance of acquiring firms in acquisitions is associated with "glamour" firms and the evidence also shows that the market and management overextrapolate the acquirer's past performance. These results are partly related to Morck, Shleifer, and Vishny (1990) and Roll (1986) because they imply the managers of glamour firms are affected by hubris. It is also confirmed by the recent study by Raj and Forsyth (2003) which examines the performance of bidders with a hubris stricken management, using successful bids in the U.K. and based on accounting ratios and bid premiums. They find that bidders significantly lose on the announcement of a bid. More extensively, Bouwman, Fuller, and Nain (2003) and Rosen (2005) conclude that acquirers make worse decisions during periods of high market-valuation possibly due to a combination of managerial reasons or hubris, market irrationality, and suggest that the market learns about the true quality of the acquisition decisions gradually.

Obviously, all the previously mentioned results are broadly consistent with Jensen's (1986, p. 328) free cash flow theory which states that managers have an incentive to expand the firm aggressively, leading to increased resources under the manager's control and simultaneously establishing more power and prestige for the manager. Subsequently, growth increases managers' power and is associated with an increase in managers' compensation.

Additional, a number of more recent studies argue that the discount is not due to diversification but is a result of the acquired or acquiring firm's underperformance prior to acquisition. For example, Lang, Stulz, and Walkling (1989, p. 147) examine how the bidder and the target announcement period abnormal returns relate to their Q ratios by
splitting the sample of tender offer announcements into those with high Q bidders and low Q bidders, and find the results support the view that the low returns to bidders are because of their poor managerial performance. It is confirmed by Lang and Stulz (1994) who report that diversified firms are poor-performers prior to conglomereration. Graham, Lemmon, and Wolf (1999)⁴ find that the acquired firms are sold at an average discount of approximately 15% in their last year of operation as a stand alone firm. Hyland (1999) finds that diversified firms perform poorly and adopt a diversification strategy in order to acquire growth opportunities. Similarly, Campa and Kedia (1999) find that diversified firms differ from single-segment firms in terms of their size, capital expenditures/ sales, EBIT/sales, industry growth rate, and R&D/sales, and report that the conglomerate firms sold at a discount prior to implementing their diversification strategy.

In short, the evidence shows both the advantages and the disadvantages of diversification. There are significant studies that explain the diversification discount in terms of inefficient capital allocation theory, agency problems, and managerial reasons. At the same time, several other researchers argue the value-decreasing effects can be attributed to factors other than diversification including prior performance or the characteristics of targets and bidders, or that there are problems with sample selection biases (I will discuss this more in a later section). In other words, these arguments can be looked as reasons behind merger and acquisition decisions. According to Besanko, Dranove, and Shanley (2000), there are three broad rationales for diversification that are frequently offered: Financial synergies, Reducing transaction costs, and Managerial reasons. Specifically, the theories of mergers and acquisitions can be summarised into three major explanations: Synergy or Efficiency, Hubris, and Agency Problems (Weston & Weaver, 2001).

Thus, it is interesting to know how they have changed over the past century. Also, it is challenging to explore the motives for diversification. Mergers and acquisitions seem to ebb and flow like a cycle or "wave" and each change has different characteristics and implications for efficiency (Besanko, Dranove, & Shanley, 2000; Fligstein, 1990; Levy & Sarnat, 1994; Nelson, 1959; Verian, 1988).

⁴ Cited in Martin and Sayrak (2003, p. 45).
Although merger and acquisition activity occurs in readily identifiable waves, these waves are not alike because the identity of the industries making up each merger boom varies tremendously. Evidence is shown in past studies. For example, Andrade, Mitchell, and Stafford (2001) rank industries in each decade by the market values of all acquired firms then, correlate these ranking across decades and find that the correlations are meaningless. This suggests that mergers can be due to industry-level shocks because mergers are expected to come in waves, but each wave is different in terms of industry composition (Andrade, Mitchell, & Stafford, 2001). Also, it is argued that most of the mergers and acquisitions were associated with technological or regulatory shocks (Kaplan, 2000). There has been related evidence, for example, Mitchell and Mulherun (1996) show that deregulation, oil price effects, foreign competition, and financial innovations can explain a significant portion of takeovers in the 1980s; Banking and media/telecommunications are the two of the most active industries in the 1990s, and deregulation is a key motive of mergers over the last ten years (Andrade et al., p. 108).

Firms can grow by internal and external expansion, but mergers and acquisitions, as broadly described, are an addition, not a substitution for internal improvement. It is stated that the most successful merger and acquisition activities are built on the base of a strong and efficient firm. Thus, a firm seeks to improve strategic vision, efficiency of operations, and quality of products, through both internal development and external merger and acquisition activities (Weston & Weaver, 2001, p. 7). As mentioned in former sections, diversification can be explained by the pursuit of scale and scope economies, at the same time, many diversifications are pursued for other reasons. Therefore, one can see the variety and extent of diversification by looking at periods in which the number of mergers is unusually high, which is called a merger wave.

According to historical analysis focused on diversification in the U.S., there have been five merger or takeover waves within the last century. The first four waves can be called American takeover waves, the dates of each wave, given here, follows Black (2000).
1. 1895-1903: The first merger wave began after the worldwide depression of 1883, which left many capital-intensive industries with overcapacity. Perhaps not much different when Weston and Weaver (2001, p. 7) explain that the wave was associated with the completion of the transcontinental railroad system. This merger wave involved about one-sixth of all U.S. manufacturing firms, major horizontal mergers took place in steel, oil, and basic manufacturing industries which were able to monopolise their industries. So, sometimes it is called the "merging for monopoly" wave. In relation to the gross domestic product (GDP), this merger movement in the U.S. was of greater magnitude than any others. However, compared to the U.S wave, the first European merger wave also started at a similar time and similar forces were experienced from its effort at integration, the wave was influenced by the industrialisation associated with the discovery of the steam engine, and the merger forces were very strong.

2. 1920-1929: This smaller merger wave occurred after World War I. Antitrust laws, such as the Sherman Act and the Federal Trade Commission Act, discouraged takeovers for monopoly power that failed to promote increased efficiency. As a result, many industries resembled oligopolies instead of monopolies. Several other combinations involved vertical, rather than horizontal, integration. Perhaps, vertical mergers enabled manufacturers to control distribution channels more effectively (Weston & Weaver, 2001, p. 8). These takeovers were associated with the development of the radio, which made national advertising possible, and the automobile, which permitted more effective geographic sales and distribution organisations. Sometimes, it is called "the merging for oligopoly" wave.

The reasons for the first two merger waves are very similar in that firms in the same market combined in order to reduce competition and achieve scale economies. The emerging of giant manufacturers was associated with the consideration of the make-or-buy strategy in favour of vertical integration (Besanko, Dranove, & Shanley, 2000, p. 198).

However, there are some characteristics that may be similar or different from other waves. For example, the antitrust constraint that was very strong in this wave can channel the growth of firms by means of the direction of diversification (see, for
example, Baker, 1992; Matsusaka, 1996). Leeth and Borg (2000) examine the impact of merger announcements on portfolios of target and acquiring firm’s common stock from 1919 to 1930. They find that target firm shareholders experience large gains, and acquiring firm shareholders do not lose, and the combined values are small, so profitability has remained remarkably constant over the last 70 to 80 years. Nevertheless, there is no evidence about the synergistic or monopolistic gains from consolidation. Also, unlike the more recent experience, target and acquiring firm’s abnormal returns were largely unaffected by the mode of acquisitions, the means of financing, or the degree of industrial relatedness.

3. 1960-1973: This wave featured increased levels of corporate diversification and produced large conglomerates that extended their product lines in diverse markets. The wave represented in part an adjustment to the slowdown in defence expenditures. By the late 1950s and early 1960s, managers understood that diversified combinations were legal, while horizontal and vertical mergers were more likely to involve antitrust problems. The mergers in the 1960s resulted in firms such as American Can, which sold cans, clothing, and financial services, and ITT, whose business portfolios included life insurance, car rental, hotels, and vending machines. Perhaps, this was influenced by the idea that a good manager can manage anything (Weston & Weaver, 2001, p. 8). This wave is sometimes called the “conglomerate merger” wave.

There is evidence of a trend towards diversification in American companies over the period 1950-1970. For example, Ravenscraft and Scherer (1987) report that the proportion of manufacturing industry acquisitions that was characterised as purely conglomerate in nature (in order to reduce risk of the group) by the Federal Trade Commission (FTC) rose from 5% of total assets acquired in 1950-1955, to 18% in 1956-1963, to 36% in 1964-1972, and fell to 32% in 1973-1977.

In addition, there are many discussions about this wave and each tends to give special reasons. For example, Servaes (1996) examines samples of firms in three year intervals over the 1961-1976 period, and finds no evidence that diversified companies were valued at a premium over single-segment firm during the 1960s and 1970s. Then, he concludes that the evidence in his study, combined with that of Berger and Ofek
(1995) and Lang and Stulz (1994), suggests that diversification has not been beneficial (for U.S. corporations). In contrast, Matsusaka (1993) investigates the acquirer’s stock price reaction to 199 acquisitions in 1968, 1971, and 1974. He finds that the acquirers earn significantly positive announcement-period returns. The evidence suggests that the market follows a managerial-synergy theory and not a managerial-discipline theory hence, the view that the 1980s “bust-ups” is a corrective to past managerial excess is untenable. Furthermore, the study finds no evidence that conglomerates are able to mislead investors by earnings-per-share manipulation. Similarly, Hubbard and Palia (1999) show bidder positive abnormal returns in the 1960s, but these are explained by different reasons: that is internal capital markets are expected to overcome the information deficiencies of the less-developed capital markets. The results are similar to the view that in the conglomerate mergers of the 1960s, well-managed bidders built up diversified groups by adding capital and know-how to the acquired firms (Gort, 1962; Meeks, 1977; Rumelt, 1974; Steiner, 1975). However, Shleifer and Vishny (2001) argue that the fact that the antitrust policy restricted related acquisitions was a common given reason for the existence of conglomerates in many studies (e.g., Shleifer & Vishny, 1991), but their alternative reason is that in that period related acquisitions were very expensive even if they came with higher perceived synergies. It follows that negative bidder returns are not evidence of a failure to serve shareholder interests because these values would have fallen even more without them.

4. 1978-1989: The mergers of the 1980s were different from those in former waves. Many cash-rich firms took a slumping stock market as an opportunity to buy other firms at “bargain” prices. Any company that could not perform up to its potential could be taken over. This is consistent with one principle of economics which states that when profit opportunities exist, individuals will take advantage of them (Besanko, Dranove, & Shanley, 2000, p. 210). It was the period of financial innovations, and junk bonds, that facilitated the financing of acquisitions which were influenced by technological progress in biochemistry and electronics. However, some studies indicate that the fourth merger wave was a reaction to the poor performance of the conglomerates formed during the third wave. For example, Bhagat, Shleifer, and Vishny (1990), Blair (1993) and Jensen (1986) argue that in the “bust-up” takeovers of the 1980s, buyers financed by bank debt and junk bonds acquired then split up the very
same conglomerates assembled in the 1960s, because the conglomerate organisation was no longer efficient.

There is evidence that shows the nature of this merger wave. For example, Comment and Jarrell (1995) find that the increase in focus measured across exchange-listed firms during the 1978-89 period of time is consistent with shareholder wealth maximisation, and the implication is that focus increased in the 1980s partly because of negative economies of scope during the decade (1978-1989). Also, for a counter-view, the U.S Justice Department issued new lenient antitrust guidelines for mergers in 1982. White (1988) states that the relaxation does not result in any rush of mergers amongst competitors that one would expect from the deregulations (the measures show the increase of average in focus each year from 1978 to 1989- see details in Comment and Jarrell (1995, p. 71, Table1). The size of deals is another explanation of this acquisition wave, the Council of Economic Advisors (CEA) in the 1985 Economic Report of the President states that the increase in merger and acquisition activities in the 1980s is due to a large increase in the size of the largest transactions. The supporting evidence is that in the period 1981 to 1984 the average annual reported real value of mergers and acquisitions was 48% greater than in any four year period from the late 1960s to the early 1970s. Moreover, of the 100 largest acquisition transactions recorded through 1983, 65 occurred after 1982 and only 11 took place prior to 1979.

5. 1993-present: Interestingly, this wave went hand in hand with a long economic boom period, stock exchange development and the growth in the internet and telecommunications industries. Obviously, the mergers turned to “related businesses. In the late 1990s, the U.S. and world economies had experienced a large merger wave. Most of these deals were for stocks and the acquirers that were typically in the same industry as the targets (Andrade, Mitchell, & Stafford, 2001). Therefore, this merger wave was very different from the “hostile” takeover wave of the 1980s, when many acquirers were financiers, and the medium of payment was often cash rather than stock. These acquisitions were also different from those in the “conglomerate” wave in the 1960s, when mergers typically involved firms from different industries. However, the waves of the 1960s and 1990s were similar in that the medium of payment was generally stocks and both occurred during periods of very high stock market valuations (Shleifer & Vishny, 2001). In addition, some studies conclude that the wave of related
acquisitions in the 1990s intended to consolidate major industries (Holmstrom & Kaplan, 2001; Andrade et al., 2001). This may be consistent with the results of Shleifer and Vishny (2001) which indicate that the recent wave is similar to the 1920s "mergers for oligopoly" (Stigler, 1968).

In conclusion, in the 1990s, most of the acquisitions in the U.S. involved firms in the same industry (Andrade, Mitchell, & Stafford, 2001) or it was the case that the wave was intended to consolidate major industries which would be similar to the 1920s "mergers for oligopoly" (Andrade et al., 2001; Holmstrom & Kaplan, 2001; Stigler, 1968). This wave was different from the "hostile" takeover wave in the 1980s, which the raiders financed by debt and junk bonds to find acquisitions then split them up because of the inefficiencies in the conglomerate industries (Bhagat, Shleifer, & Vishny, 1990; Jensen, 1986). The acquisition movements also were different from the "conglomerate" wave in the 1960s, when the targets and bidders were from the different industries, the bidders diversified their businesses by increasing capital and adding know-how to the targets (Gort, 1962; Meeks, 1977; Rumelt, 1974; Steiner, 1975). However, the waves of the 1960s and 1990 were similar in some areas in the medium of payment was stock and both occurred during a period of high stock market valuations. In contrast, many acquirers in the 1980s made the payments by cash rather than stock and it was a period of lower market valuations (Shleifer & Vishny, 2001). The gains for targets, bidders and combined firms have been still maintained at a similar level over 70 to 80 years.

Interestingly, the current wave is considered to be a part of the fifth U.S takeover wave that began in 1993 and has been characterised by mega-mergers. The list of top ten mergers in all history through January 2001 shows that all these mergers are greater than $50 billion and have occurred since 1998 (Weston & Weaver, 2001, p. 2). However, it can also be considered the first international takeover wave (Black, 2000). In comparison, when measured by transaction value, the merger and acquisition activities in European takeover activity soared from $0.63 trillion in announced transactions in 1998 to $1.60 trillion in 1999. Asian merger and acquisition activity rose from $0.07 trillion in 1998 to $0.22 trillion in 1999 compared with $1.77 trillion and $1.79 trillion respectively in the U.S market. Therefore, it will not be surprising if the international takeover activity will become more eminent in some time in the next wave.
When measured by number of transactions, they were 24.60%, 32.40%; 7%, 9.90%; 39.50%, 30.40% of the worldwide figure in the years 1998 and 1999 for the European market, Asian market, and the U.S market respectively.

According to the Asian stock market statistics (including at least one Asian party, either as target or bidder), the transaction values have grown from $0.004 trillion or 1% of the worldwide total in 1985 to $0.28 trillion or 6.40% in 1999; and the number of transactions has increased from 2.40% of the worldwide total to 13.60% respectively. In addition, it is interesting to look at the highly distinguishing period of high market capitalisation. During 1983-1989 the market capitalisation of the Asian stock markets rose from 22.30% to 43.24% whilst those of the European stock markets increased from 18.99% to 22.37%, compared to decrease of 49.66% to 29.02% in the U.S. market and 8.93% to 5.11% in other markets. This is similar to Chakrabarti and Roll (2002, p.19) who suggest that before the Asian financial crisis in year 1997, diversification was potent within the Asian stock markets. However, the collapse of the Tokyo Stock Exchange affected the market after 1989, and market capitalisation decreased from 43.24% in 1989 to about 27% during 1992-1993. In addition, the Asian financial crisis in year 1997 drove market capitalisation down to 14.81% in 1998. It is not really inconsistent with Chakrabarti and Roll (2002, p. 19) who state that the diversification potential was much worse in Asian stock markets and fell behind that of the European stock markets. This was because after 1997 both the U.S. and European markets experienced grower market capitalisation, but partly because the other markets were influenced by the financial crisis, and the market capitalisation decreased from 10.61% in 1997 to 9.08% in 1998. Furthermore, the evidence of the average increase of the rate over the 3-year period, comparison between Asian and European markets in terms of takeover transaction values, number of transactions, and market capitalisation, shows that in the Asian markets, the worse situation only occurred in 1997 in terms of the number of transactions not their values; and the worse situation also occurred in 1998 in terms of the values but not the number of transactions.

Obviously, the U.S and European takeover activities have dominated the worldwide totals. The relevant factors in Europe have been similar to the forces in the earlier merger wave in the U.S. that is domestic mergers which increased concentration of certain sector activities (Campa & Hernando, 2004, p. 78; Weston & Weaver, 2001,
p. 7). However, many would agree that the Asian market is more likely to continue growing rapidly. Probably, the influential factors are a rapid economic growth rate, more liberalised climate of financial and capital markets, globalisation, government deregulation trends, and timing for management transferring from original founders or family management style to professional management due to more complicated business environments (Black, 2000, p. 5 and 13; Weston & Weaver, 2001, pp. 4-5). Moreover, the existing literature has shown that periods of high merger activity are correlated with high market valuation. Specifically, more acquisitions occur when stock markets are booming than when markets are depressed because stock prices affect corporate decisions (Bouwman, Fuller, & Nain, 2003, p. 1 and 29).

Finally, most would agree that the U.S is the most merger and acquisition activity prone area but European countries closely follow and Asian markets are fast growing. There is historical data support this in terms of the percentage of the takeover transaction values and market capitalisation during 1985-1998, the average increase rate is 10.18%, 18.07%, and 34.31% for the U.S, European and Asian countries respectively. Emerging stock markets seem more fascinating for the following reasons, for example, Montgomery (1994) notes that the U.S. is not the only country where diversified companies have a significant role in economic activity. Historical and recent trends indicate that diversification is pronounced in other countries such as Canada (Caves, Porter, & Spence, 1980); the United Kingdom (Danbolt, 2002; Goudie & Meeks, 1982; Raj & Forsyth, 2002; Utton, 1977); 18 European countries (Goergen & Renneboog, 2004); France (Aktas, Bodt, & Declerck, 2002); Norway (Karceski, Ongena, & Smith, 2000); Sweden (Doukas, Holmen, & Travlos, 2002); Australia (Brown & da Silva Rosa, 1998; da Silva Rosa, Izan, Steinbeck, & Walter, 2000; Dodd & Officer, 1987); Japan (Goto, 1981; Ikeda & Doi, 1983; Kruse, Park, Park, & Suzuki, 2002); India (Khanna & Palepu, 2000); 35 countries (Fauver, Houston, & Naranjo, 2002); Asia (Claessens & Fan, 2003); East Asia (Chakrabarti & Roll, 2002); Emerging market (Lins & Servaes, 2001); other advanced economies such as OECD countries (Kuipers, Miller, & Patel, 2002). Also, large conglomerates are often controlled by family groups or governments in many developing economies. Emerging markets provide attractive portfolio diversification opportunities. There are about 150 countries which are classified as emerging markets by conventional definitions of development, but most international

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5 Cited in Campa and Hernando (2004).
investors focus their attention on some 30 countries that are in transition to higher levels of economic development. The other 120 pre-transition countries also offer interesting investment opportunities (the significance arguments presented at a conference held at the Darden Graduate Business School between 28 and 31 May 2002).

Darden Graduate Business School (2002) colloquium “Valuation in Emerging Markets”, provided evidence that emerging markets provide attractive portfolio diversification opportunities. Emerging markets are challenging because there are many difference issues between developing and developed stock markets, for example, accounting transparency, liquidity, corruption, volatility, governance, taxes, and transaction costs. These differences are quite likely to affect firm valuation (Bruner, Conroy, Estrada, Kritzman, & Li, 2002). Investment flows into emerging markets are material. According to the World Bank, during the year 2000, US$300 million flowed into some 150 countries not regarded as developed, over US$250 million of which went into the 30 or so emerging countries most widely followed by international investors. Therefore, the flows to emerging countries are large enough to impact on the stock market activities. It is expected that emerging markets will continue to draw the attention of the world’s investors, partly because the roughly 30 emerging countries widely followed by investors grow at real rates two or three times higher than those of developed countries.

However, the literature reviewed in this study will not be complete if there is no overview of the results of mergers and acquisitions. For takeover activities, event studies are typically applied. They use the estimates of the abnormal returns or stock price changes around the announcement date or the examined period as a measure of the effects of the takeovers. Most studies examine the impacts of takeovers on the returns to the stockholders of target and bidding firms around the time of the takeover announcement and many of them show similar results. The next section provides a literature review focusing on the returns to target firm shareholders, short-term and long-term returns to bidding firm shareholders, and the combined value of the event firms involved in the activity. Also, a review of the Thai literature is included.

1.1 REVIEW OF PRIOR STUDIES OF MERGERS AND ACQUISITIONS
1.1.1 The Evidence of Positive Abnormal Returns to Target Firms

In early event studies of takeovers, for example, those by Ellert (1976), Langetieg (1978) and Mandelker (1974) typically use the effective date of mergers or the date of final approval by the target firm shareholders as the event date. Mandelker's (1974) evidence shows that stockholders of bidding firms earn normal returns while the stockholders of the target firms earn abnormal gains from the mergers. Ellert (1976) uses a similar methodology but a much larger sample, and finds that stockholders of bidding firms earn significant positive abnormal returns. Later, Dodd and Ruback (1977, p. 352) suggest that precise estimation of the market reaction to corporate acquisitions requires the use of an earlier date such as the first public announcement rather than the effective date used in the earlier studies. However, their study (1977, p. 372) provides evidence that target firm stockholders earn large and significant abnormal returns from tender offers, approximately 20.58%. Bidding firm stockholders earn positive abnormal gains, around 2.83%. Since these gains are much smaller than those of the target firm stockholders, and thus, the results are similar to those of Mandelker (1974) because most of the gains from takeovers accrue to the target firm stockholders.

Jensen and Ruback (1983) review the literature (1977-1983) on the market for corporate control that is often referred to as takeover activities. A total of thirteen from eighteen studies indicate that the abnormal returns to targets of successful tender offers are uniformly positive ranging from 16.90% to 34.10%, and the weighted average abnormal return across the seven studies is 29.10%. For targets of successful mergers, the abnormal returns surrounding the announcement range from 6.20% to 13.40%, and the weighted average abnormal return is 7.70% (see details in Jensen and Ruback, 1983, pp. 599-601).

Datta, Pinches, and Narayanan (1992) compare their results with the conclusions provided in two previous reviews by Jarrell, Brickley, and Netter (1988) and Jensen and Ruback (1983). The evidence shows that the consistency amongst the three reviews is greater for targets because target firm shareholders earn significant gains and achieve larger gains in tender offers rather than in mergers. However, their results are more consistent with Jarrell et al. (1988) in terms of the gains to target firm's shareholders which are higher in the 1970s and 1980s compared to the 1960s.
Interestingly, other markets also give a similar view. For example, da Silva Rosa, Izan, Steinbeck, and Walter (2000), in an Australian study, Dumontier and Petitt (2002), in a French study, also report that target firm shareholders benefit significantly from takeover announcements. This conclusion is consistent with Bishop, Dodd and Officer (1987), Jarrell, Brickley, and Netter (1988), Jensen and Ruback (1983) and Walter (1984). Goergen and Renneboog (2002), examine large European takeovers, and also provide evidence which shows the short-term wealth effects are remarkably similar to those of the U.S. and U.K. studies. They find takeover announcement effects of 9% for target firm shareholders, but the cumulative abnormal returns that include the price run-up over the two-week period prior to the event rise to 20%.

Bruner (2002) summarises the findings of twenty-one studies and reveals that target firm’s shareholders receive significantly and materially positive abnormal returns, in spite of variations in the time period, type of acquisition (mergers vs. tender offers), and observation period. In addition, two studies report that target firm shareholders gain average abnormal returns in the range of 20-30%.

Later, Campa, and Hernando (2004) summarise the findings of thirteen studies and report that target firms shareholders obtain on average significant positive returns in almost all cases, despite variations in the time period, type of deal (mergers vs. tender offers), industry involved, investigation period and measure of cumulative abnormal returns. They conclude that their findings are consistent with those reported in previous surveys of the literature.

More recent studies provide additional evidence supporting these past results. For example, Santos, Errunza, and Miller (2003) find significant wealth gains accrue to foreign target firm shareholders regardless of the type of acquisition, and Campa and Hernando (2004) also find that target firm shareholders receive on average a statistically significant cumulative abnormal return of 9% for mergers.

Conversely, Agrawal and Jaffe (2002) summarise prior studies of the pre-acquisition performance of target firms. Eight from twelve studies show negative abnormal returns, but only two studies obtain significant negative abnormal returns, and
the remaining four studies report insignificant positive abnormal returns. Even though Agrawal and Jaffe's (2002, p. 21) results show the cumulate abnormal returns from month-100 to month-3 for the entire 1926 to 1996 period are as insignificant negative amount of -1.93%, they conclude that the conventional view that target firm perform poorly is not supported by the data which is consistent with the previous studies where there is little evidence of pre-acquisition under-performance for the entire sample of target firms. However, their results are consistent with two of the studies, Danbolt (2002) and Karceski, Ongena, and Smith (2000), cited in Campa and Hernando (2004) survey, which report negative returns (for windows smaller than ten days prior to the event date).

In conclusion, the merger and acquisition transaction delivers a premium return to target firm shareholders. The findings of most studies, nearly all are summarised in Bruner (2002), Campa and Hernando (2004), Datta, Pinches, and Narayanan (1992), Jensen and Ruback (1983) and many others, reveal target firm shareholder returns are on average significantly positive, in the range of 20-30% (see Appendix A, Table A1 for details of positive abnormal returns for target firm's shareholders). The results in the summary also show that the larger the event window the greater the increase in the amount and significance of abnormal returns. In addition, positive abnormal returns in the days prior to the announcement date also found and this suggests that the market anticipates information on the takeovers (Campa & Hernando, 2004, p. 50).

1.1.2 The Evidence of Negative Abnormal Returns to Bidding Firms

However, for bidding firms, there are some contrasting results. It is argued that significant positive performance by bidding firms is an unusual finding. Jensen and Ruback (1983) observe that the shareholders of acquiring firms do not lose from takeover activity; while on Australian study by Brown and da Silva Rosa (1998, p. 34) shows that the acquiring firms do not display significantly positive performance. However, Healy, Palepu and Ruback (1992), Mitchell and Stafford (2000), Sirower (1994) and Walker (2000) all report small negative returns for acquiring firms; Dumontier and Petitt (2002) also show low or negative returns for bidding firms and

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6 Cited in Bruner (2002).
this is consistent with Bradley, Dasai, and Kim’s (1988) study which reports that excess returns to bidding firm shareholders on the announcement of a takeover fell from about 4% in the 1960s to 1.30% in the 1970s and then to -3% in the 1980s (all statistically significant).

In the U.K., The first major study of takeovers was by Firth (1980) which used a market model with parameters estimated by using pre-event data. The study reports significant negative cumulative abnormal returns of -6.30% for the announcement month. Target firm shareholders and managers earn large gains while bidding firm shareholders suffer losses. The evidence is consistent with Morck, Shleifer, and Vishny (1990) that takeovers are motivated by managerial reasons. Limmack (1991) uses three benchmarks to compute abnormal returns: a conventional market model; a market model using London Business School (LBS) beta and alpha values; and a “zero-one” model. The results show that the announcement period returns for successful bids are an insignificant -0.20%. Sudarsanam, Holl, and Salami (1996) explore announcement period returns associated with 429 UK bidding firms over the period 1980-90. Overall, they find significant negative cumulative abnormal returns of -4.04% over the period -20 to +40 days around the bid announcement date. Campa and Hernando (2004) investigate firms in the European Union over the period 1998-2000, and the results show that the returns to bidding firm shareholders are not significantly different from zero, with almost 55% of the transactions are negative returns to bidding firm shareholders. Therefore, the results are absolutely consistent with the previous findings.

Datta, Pinches, and Narayanan (1992) show some results significantly different from those in two previous reviews. In particular, they find that bidding firm shareholders do not gain whether successful or not while Jensen and Ruback (1983) find that bidding firm shareholders gain in successful mergers and lose in unsuccessful transactions. Jarrell, Brickley, and Netter (1988) report declining returns to bidding firm shareholders in the 1970s and 1980s compared to the 1960s while Datta et al. (1992) find the decline over time is insignificant.

Bruner (2002) summarises the findings of forty-four studies, twenty studies report negative returns with thirteen of the twenty significantly negative. The negative
abnormal returns vary between -1 and -3%. Moreover, twenty-four studies report positive returns with seventeen of the twenty-four significantly positive. He concludes that one-third (13) show value destruction; one-third (14) show value conservative, and one-third (17) show value creation.

Campa and Hernando (2004) summarise the findings of seventeen studies, ten of these studies report negative abnormal returns. The negative returns vary between less than 1% and 5%, with different event windows, and most of them include periods prior to the announcement date. Also, they report that most cases are significantly different from zero. Seven more studies report zero or positive abnormal returns to bidding firm shareholders ranging from zero to 7%. The results in most cases are very small compared to the reported abnormal returns to target firm shareholders in the previous section. However, the findings are distributed rather evenly among studies that show value-decreasing and value-increasing. Thus, they conclude that the positive or negative cumulative abnormal return effects to bidding firm shareholders are inconclusive.

In conclusion, the evidence on returns to bidding firm shareholders is less conclusive. The studies are divided between those that reported negative and positive or zero returns to shareholders. The negative returns vary between less than 1 and -7%, with different windows but most of them included the periods prior to the announcement date. Most of the cases show statistically significant results. In contrast, many studies find positive or zero returns and range from zero to 7% (except for Loughran and Vijh, 1997), but are very small when compared to the returns to target firm shareholders. (See Appendix A, Table A2 (A2.1) for details of the negative abnormal returns for bidding firm’s shareholders).

Jensen and Ruback (1983, p. 608) note that measuring the gains to bidding firm shareholders is difficult because bidding firms are generally much larger than target firms. Thus, even when the dollar gains from the takeovers are divided equally between the event firms, the dollar gains to the bidding firms translate into smaller percentage gains than those to target firms. Furthermore, the precision of the estimated gains is lower for bidding firms than for target firms because the normal variation in equity

7 See Fuller, Netter, and Stegemoller (2002, p. 1767) for a more discussion.
value for the (larger) bidding firms is greater, relative to a given dollar gain, than it is for the target firms. Thus, even if the gains are split equally, the relative sizes of bidding and target firms imply that both the average abnormal return and its t-statistic will be smaller for bidding firms. Similarly, Bruner (2002, p. 56) indicates that any inferences about the typical returns to bidding firms must be faced with the difficult issue of the size difference between bidding and target firms. Asquith, Bruner, and Mullins's (1983) results are consistent with the size effect. For example, in mergers where the target market value equals 10% or more of the bidder market value, the returns to bidders are 4.10% (t=4.42). But where the target market value is less than 10%, the returns to the bidders are 1.70%.

1.1.3 The Evidence of Positive Abnormal Returns to Bidding Firms

For bidding firms, the study survey by Jensen and Ruback (1983, pp. 599-601) summarises that the bidding firm shareholders in successful tender offers realise statistically significant positive gains ranging from 2.40% to 6.70% (see Bradley, 1980; Bradley, Desai & Kim, 1982; Dodd & Ruback, 1977; Jarrell & Bradley, 1980) and the weighted average return is 3.80%. However, the gains are substantially smaller in comparison to those of the target firm stockholders, as previously mentioned. Jensen and Ruback (1983) separate the results from mergers and tender offers and the evidence on bidding firm shareholders' returns in mergers is mixed (see Asquith, Bruner, & Mullins, 1983; Dodd, 1980), therefore, they comment that it is more difficult to interpret the results than that for bidding firm shareholders in tender offers. However, on the whole, the returns to bidders in mergers are approximately zero.

Also, Bradley, Desai, and Kim (1988) and Weston and Copeland (1992) summarise the results from previous studies and show consistent conclusions that acquiring firm shareholders gain significant positive returns. In Australia, Brown and da Silva Rosa (1998) report that in the pre-bid and bid periods, the acquisitions increase bidding firm shareholders' equity value. Some other studies find zero or small positive abnormal returns such as Eckbo and Thorburn (2000), Loderer and Martin (1990) and Maquiera, Megginson, and Nail (1998). A recent study by Ghosh (2002), explores whether increasing market share might be a value-enhancing rationale for corporate acquisitions and finds that on average post-acquisition market share of acquiring firms
increase about 20% from the pre-acquisition level. The increase in market share is positively correlated with abnormal returns around acquisition announcement, an increase of 1% in market share leads to a 0.52% increase in wealth gains for acquiring firm shareholders. This suggests market expectation of future benefit from an increasing market share strategy. Goergen and Renneboog (2002) analyse the wealth effects of large (intra) European takeovers and find that the share price of the bidding firms reacts positively with a statistically significant announcement effect of 0.70%. (See Appendix A, Table A2 (A2.2) for details of zero or positive abnormal returns for bidding firm’s shareholders).

Earlier studies like Herman and Lowenstein (1988) report that ROC (Pre-tax Returns on Total Capital) for bidding firms (using tender offers) increase from 14.70% to 19.60%. Parrino and Harris (1999) find that bidding firm shareholders experience a positive and significant 2.10% operating cash flow return after mergers. Similarly, Ghosh (2001) shows that acquiring firm shareholders obtain cash flows that increase significantly for cash acquisitions, and Ghosh (2002) reveals that acquiring firm’s profitability increases with market share and the increase in profitability results from higher sales turnover rather than lower operating costs.

1.1.4 The Evidence of Long-term Post-event Abnormal Returns to Bidding Firms

Most research on the financial performance of mergers and acquisitions has focused on stock returns surrounding announcement dates, fewer of them have concentrated on long-term post-event returns, perhaps because the belief in market efficiency indicates what the results should be (Agrawal & Jaffe, 1999 p. 3). However, numerous earlier studies report negative abnormal returns in the year following the takeover announcement and this can signal that long-term abnormal return investigation should not be ignored. In the classic survey of the research in this area, Jensen and Ruback (1983) summarise the results of six studies examining the returns to bidding firm shareholders in the year following mergers and tender offers. The evidence shows that after tender offers, bidding firm shareholders earn statistically insignificant negative abnormal returns while after mergers, bidding firm shareholders gain insignificant positive abnormal returns but most receive statistically significant negative abnormal returns. Nevertheless, this evidence on long-term post-event bidder’s performance is
controversial because different studies find different results. For example, Dodd and Ruback (1977) and Malatesta (1983) show insignificant negative post-outcome abnormal returns for the entire sample; Mandelker (1974) finds insignificant positive abnormal returns; Asquith (1983), Malatesta (1983) and Langetieg (1978) (for mergers occurring after 1970) reports significant negative abnormal returns. Thus, Jensen and Ruback (1983 p. 608) comment that these negative post-outcome abnormal returns are unsettling because they are inconsistent with market efficiency and suggest that changes in stock price during takeovers overestimate the future efficiency gains from mergers.

According to the summary of Agrawal and Jaffe (1999) and Bruner (2002), this provides evidence that Bradley and Jarrell (1988), Franks, Harris, and Titman (1991), Loderer and Martin (1992) for example, do not find significant negative abnormal returns. Others, such as Agrawal, Jaffe, and Mandelker (1992) (for tender offers), Firth (1980), Hubbard and Palia (1999), Loughran and Vlijh (1997) (for tender offers) and Kruse, Park, Park, and Suzuki (2002) for example, report insignificant positive abnormal returns. Agrawal et al. (1992) (for mergers), Anderson and Mandelker (1993) (for mergers), Gregory (1997), Loughran and Vlijh (1997) (for mergers), Mitchell and Stafford (1998), Rau and Vermaelen (1998) (for mergers), and Brown and da Silva Rosa (1998) for example, report negative and significant returns. Loughran and Vlijh (1997) (for tender offers) and Rau and Vermaelen (1998) (for tender offers) for example, show significant positive abnormal returns. In short, different studies show different results with either negative or positive post-event abnormal returns, and either significant or insignificant results. However, most studies report significant negative returns for mergers and insignificant positive returns for tender offers, while some report significant positive returns.

Besides the previously mentioned results, looking at the outcomes from different markets is interesting. In the UK, Franks and Harris (1989, p. 239) show significant negative abnormal returns of -12.60% in the 24 months following the bid completion when the market model is used, but a significant positive return of 4.50% is shown when the CAPM is used as the benchmark. Limmack (1991) reports the long-term abnormal returns are a significant at -4.67% for the event month to 24 months following

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8 See Jensen and Ruback (1983, p. 609, Table 4) for details of post-outcome abnormal returns for tender offers and mergers.
the bid completion, using the London Business School beta model, and a significant 14.96% and -7.43% for the market and zero-one models respectively. Kennedy and Limmack (1996) find that long-term returns to bidding firm shareholders are significantly negative, while Higson and Elliot's (1993) results are not significant. Nevertheless, the past results are strongly confirmed by the more recent studies. For example, Gregory and McCorriston (2002) use the bootstrapping approach of Lyon, Barber, and Tsai (1999) to investigate the long-term abnormal returns of the U.K. acquiring firms. The study based on the sample of foreign acquisitions by the U.K. firms over the period 1985-1994, shows that, on average, the long-term abnormal returns to the U.K. acquiring firm shareholders are insignificant negative. However, a closer investigation reveals that there are economically and statistically significant abnormal returns for the U.K. acquiring firms which acquire U.S. target firms. These results are broadly similar to Conn, Cosh, Guest, and Hughes (2001), despite using different methodology and sample periods, Faccio, McConnell, and Stolin (2002) and Raj and Forsyth (2002).

In Australia, Brown and da Silva Rosa (1998) suggest that survival is an important issue in event studies, and they assess the long-term performance of acquiring firms by controlling for survival, firm size, and measurement biases in return cumulation, yet still report similar results.

The more recent studies in the U.S. also confirm past results. For example, Rosen (2003) explains the source of merger momentum by looking at the long-term abnormal returns for bidding firms. He finds evidence that the short-term reaction to the merger announcement is fully reversed over the next three years. The study provides evidence that there are managerial reasons in addition to investor sentiment which explain the positive short-term response to the announcement in hot merger markets as well as the negative long-term performance of the same mergers. Similarly, Bouwman, Fuller, and Nain (2003) report that acquiring firms that acquire target firms in high-valuation markets significantly under-perform in the three years following the acquisition. They argue that these reversals are due to a combination of market irrationality and managerial hubris, which is strongly consistent with Rosen (2003).

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Obviously, this overview shows that the same pattern of long-term negative post-event abnormal returns to bidding firm shareholders has been identified in the U.S., the U.K., and Australian takeovers. The conclusion is similar to that of the summary of twenty-two and eleven studies reporting long-term abnormal returns for acquiring firm's shareholders of Agrawal and Jaffe (1999) and Bruner (2002) respectively, which are broadly consistent with the previous survey of Jensen and Ruback (1983). (See Appendix A, Table A2 (A2.3) for details of long-term negative abnormal returns for bidding firm's shareholders). In short, the literature concludes that long-term performance of bidding firms is significantly negative following mergers while the performance is either significantly or insignificantly positive following tender offers. However, takeovers in more recent years have produced significant negative abnormal returns for acquiring firm shareholders. Perhaps, these results make the studies of later acquisitions especially challenging. As a result, clearly, a number of the recent studies have been sufficiently devoted to bidding firm's long-term performance investigation and also many of them have searched for explanations of the phenomenon and have adopted more sophisticated methodologies.

Overtime, several reasons have been used to explain the conflicting conclusions evident in past results. For example, in earlier periods, one hypothesis is that the studies impose ex post selection bias by using information that is not available at the announcement date to the selected samples; alternatively, the negative abnormal returns caused by non-stationary parameters or other forms of model misspecification. However, Langetieg (1978) finds these factors do not explain the negative post-outcome returns in his sample. Schipper and Thompson (1983) argue that regulatory changes that reduced the profitability of mergers explain the negative abnormal returns, but Malatesta (1983) finds significant negative post-outcome abnormal returns of -13.70% ($t=2.88$) for mergers occurring after the regulatory changes. So, the evidence confirms Jensen and Ruback (1983 p. 610) comment that the explanation of the post-event negative abnormal returns is an unsettled issue.

Other interpretations are relevant. For example, the post-event negative returns represent a delayed market reaction to overpriced acquisitions, however, Agrawal and Jaffe's (1999, p. 51) evidence does not support the conjecture that under-performance is specifically due to a slow adjustment to merger news.
Many studies indicate that long-term event studies are sensitive to the model selected for computing normal returns therefore, methodological errors and their relation to incorrect choice of control model may explain the different results (Baker & Limmack, 2001, p. 4; Rau & Vermaelen, 1998, p. 224). However, Limmack (1991, p. 247) notes that the choice of models has little impact on the results. At the same time, many papers have attempted to propose what is the more appropriate model. For example, Dimson and Marsh (1986, p. 137) state that the size effect is time-varying, so that the normal market-model estimate of alpha cannot be relied upon to adequately capture size effects. Agrawal, Jafee, and Mandelker (1992) also realise that an adjustment for firm size is important in studies of long-term performance and mergers and acquisitions because bidding firms are usually large firms, as well as beta risk, because the resulting bias can be significant when abnormal returns are cumulated over a long period. Size effects have been taken into account in studies in a variety of ways. For instance, Franks, Harris, and Titman (1991) use a multifactor benchmark, while Agrawal et al. (1992), Loderer and Martin (1992) and Loughran and Vijh (1997) use methodologies adjusting for firm size. Nevertheless, they find no relationship between post-acquisition performance and the relative size of the acquisitions. Similar to the U.K. studies, Higson and Elliott (1993) show insignificant negative abnormal returns while Kennedy and Limmack (1996) report significant negative abnormal returns after adjustment for size effects. Except for consideration of the size effect, Agrawal et al. and Loderer and Martin (1992) control for beta risk, but their results do not show any evidence that changes in beta are the causes. On the contrary, Kim (1995) and Kothari, Shanken, and Sloan (1995) argue that both beta and size have a role in explaining returns. Thus, Agrawal et al. (p. 41) do not identify what is the cause of the negative performance but conclude that the results do not support the hypothesis that negative post-merger abnormal returns are due to slow adjustment to the merger announcement.

Further, Fama and French (1992) suggest adjustment for both firm size and book-to-market equity ratios to explain the variation in average stock returns. At the same time, Fama and French (1996) report that many efficient markets "anomalies" can be explained by taking into account size and book-to-market effects through the use of a three factor benchmark. However, Rau and Vermaelen (1998) find their results are in contrast to Fama and French's (1993) conjecture positing that a methodology which controlled for the below-average returns of low book-to-market firms would reveal no
persistent negative abnormal returns. Their study shows that bidding firm shareholders earn a statistically significant negative abnormal return of 4% over a period of three years after the merger completion date, whilst bidding firms shareholders in tender offers gain a statistically significant positive abnormal return of 9%. Gregory (1997, p. 998) confirms that a “good” benchmark must control for the size effect, but notes that allowing for “book-to-market” effects by using a Fama and French (1996) three-factor benchmark does not explain the results of negative abnormal returns.

That pre or post event data should be used to estimate the model parameters is another issue associated with the choice of benchmark or model. In the U.K., Gregory (1997, p. 999) mentions that the use of pre-event estimates may bias the results from models which use the standard cumulative average abnormal return (CAAR) method. He also refers to the evidence that “size effects” are time-varying, as noted in Dimson and Marsh (1995) and Reinganum (1992), amongst others. This suggests that it would be dangerous to rely on a market model, so his study follows Agrawal, Jafee, and Mandelker (1992) by using post-event data to estimate the model parameters. The main conclusion from his analysis is that the long-term post-acquisition performance of U.K. acquiring firms is significantly negative. However, Baker and Limmack (2001, p. 6) argue that a number of papers identify model parameters by using an estimation period that either overlaps with or follows the event period, but their results show a similar pattern of post-outcome negative abnormal returns.

A number of recent studies suggest that the aggregation process used in the calculation of long-term returns is itself often biased because of the adoption of inappropriate rebalancing procedures (Baker & Limmack, 2001, p. 4). In this case, Kothari and Warner (1997, p. 337) suggest that the bootstrap method seems like a promising framework which can potentially reduce misspecification. It could be used to address biases in both the measure of abnormal returns and the standard deviation. This recommendation is related to Barber and Lyon (1997). They suggest that a more appropriate approach should be a comparison of buy-and-hold returns either with an appropriate benchmark or firms matched on some predetermined characteristics. In addition, Chopra, Lakonishok, and Ritter (1992), Ikenberry, Lakonishok, and Vermaelen (1995) and Lyon, Barber, and Tsai (1999), amongst others, suggest that the skewed nature of distributions of long-term returns leads to the miss-specification of
standard statistical testing methods. Lyon, Barber, and Tsai (1999) and Sutton (1993) also prove that the bootstrap method yields well-specified test statistics and is more powerful than the control firm approach. Hence, they recommend the use of a bootstrapped version of skewness-adjusted t-statistics or empirical p values calculated from the simulated distribution of mean long-term abnormal returns estimated from pseudo portfolios.

In Australia, Brown and da Silva Rosa (1998, p. 28 and 37) confirm that survival related biases are an important issue in event studies and suggest matching the sample firms with control firms on the basis of survival (but how long a period should be used is an open question). However, Baker and Limmack (2001), in a U.K. study, examine the possible sources of bias on the post-event acquiring firm’s returns and provide evidence that the post-outcome negative abnormal returns to acquiring firm’s shareholders are not a function of survivorship.

Another issue is related to the excessive extrapolation of prior performance which has interesting implications for negative abnormal returns. Since analysis of returns to takeover firms is likely to involve some forms of selection bias, another source of selection bias may arise as a function of the performance of sample firms prior to the takeover investigation. Agrawal and Jaffe (2000) conclude that two explanations of under-performance (speed of price-adjustment and EPS myopia) are not supported by his data. This is similar to Rau and Vermaelen (1998) who reject the EPS myopia hypothesis that the market initially overvalues acquiring firms if the acquisition increases EPS, ultimately leading to long-term under-performance. While Agrawal and Jaffe’s (2000) two other explanations (method of payment and performance extrapolation) receive greater support. A similar argument about performance extrapolation is made by Loughran and Ritter (1997) and Rau and Vermaelen (1998). However, a different view is taken by Baker and Limmack (2001) who indicate that the post-outcome negative returns to acquiring firm shareholders are not a function of prior performance. Agrawal and Jaffe’s (2000) results are related to payment methods which are consistent with recent papers that report greater under-performance following stock-financed acquisitions than cash-financed acquisitions. See, for example, Loughran and Vijh (1997) and earlier studies such as Myers and Majluf (1984), but there are contrary
to Rau and Vermaelen's (1998, p. 251) finding which shows that their results are independent of the method of payment.

Even though most studies have given priority to short-term performance investigation, a number of more recent studies have been totally devoted to long-term return examination. Many of them have looked for explanations of the phenomenon and have adopted more sophisticated methodologies. In addition to the U.S. studies, there is support for the importance of post-event performance examination. For example, an Australian study by Brown and da Silva Rosa (1998, p. 35) notes that the long-term performance examination of the post-event returns for bidding firm's shareholders is important because the share market tends to display "speculative bubbles" that result in bidding firm's shares being overvalued for investigation periods. It is often associated with the view that a correction to the unjustified market and over-valuation will be observed only in the long-term. This is consistent with the studies by Rosen (2003) and Bouwman, Fuller, and Naın (2003). That is, the market does not act quickly to eliminate systematic bias in estimates of firm potentials. A U.K. study by Gregory (1997, p. 971) states that mergers and acquisitions in more recent years have produced significant negative abnormal returns for bidding firm's shareholders. Gregory and McCorriston (2002, p. 10) note that their study concentrates on long-term returns for acquiring firm's shareholders because short-term event studies may not fully reflect the value-increasing or value-decreasing impact of an acquisition.

Therefore, it is worth noting that a significant number of studies using different methodologies and different sample periods in the U.S., the U.K. and Australia, report similar results. Moreover, this summary of findings is definitely consistent with the earlier survey of Jensen and Ruback (1983). Recent surveys of Agrawal and Jaffe (1999), Bruner (2002) and Campa and Hernando (2004, p. 58) conclude that studies that analyse long-term performance of bidding firms tend to find significant negative cumulative abnormal returns. However, Caves (1989) infers that these findings are due to "second thoughts"\(^\text{10}\) by bidding firm shareholders, and/or the release of new information about the deal. Interpretation of long-term returns following the transaction is complicated by possibly confounding events that have nothing to do with the transaction. Additionally, Bruner (2002, p. 55) notes that his review of the studies

\(^{10}\) See Bruner (2002, p. 55).
shows a slight tendency for declining returns over time. The returns seem to be more positive in the 1960s and 1970s than in the 1980s and 1990s, except for mergers and acquisitions in technology and banking in which returns to bidding firm's shareholders increase in the 1990s. It is consistent with an earlier study of Bradley, Desai, and Kim (1988) who reported that average announcement returns to bidding firm's shareholders fall from 4.10% in the 1963-1968 period, to -2.90% in the 1981-1984 period. Also, Jarrell, Brickley, and Netter (1988) show significantly positive abnormal returns of 5% during the 1960s, then lower values of 2.20% over the 1970s, and insignificantly negative ones of -0.04% in 1980s. A more recent study by Loderer and Martin (1992) finds that the negative abnormal returns progressively diminish through the 1960s and the 1970s and disappear in the 1980s. Finally, the previously mentioned long-term investigation results and their explanations make the study of later acquisitions particularly interesting.

1.1.5 The Evidence of Abnormal Returns to Unsuccessful Target Firms

The first paper that assesses the market reaction to unsuccessful takeovers is by Dodd and Ruback (1977). Their study investigates the impact of successful and unsuccessful tender offers on the returns to stockholders of bidding and target firms, and reports that unsuccessful target firm's shareholders earn large significant positive abnormal returns of 18.96% in the offer month. The cumulative abnormal returns do not fall back to their pre-offer level. Therefore, these returns are permanent because they earn normal returns for five years after the offer. Then, they conclude that the results support the internal efficiency hypothesis, however the positive returns in the event month can be explained on the grounds that they are the expectations of future monopoly or synergistic gains from mergers.

Firth (1980), examines the impact of the U.K. takeovers on shareholder returns and management benefits, showing evidence that the gains to unsuccessful target firm's shareholders at the takeover announcement time (and any subsequent revised bids) are maintained up to three years later. It is argued that the gains reflect improved profitability of the target firms and/or the possibility of future bids. The results are similar to Dodd and Ruback's (1977), U.S. study, and Dodd's (1976), Australian study.
Asquith (1983) is the first paper that examines abnormal stock returns throughout the entire merger process for both successful and unsuccessful bids. His study reports that at the press date, unsuccessful target firm’s shareholders earn significant positive abnormal returns of 7%, then experience significant negative abnormal returns of 8.10% and continue to have (insignificant) negative abnormal returns of 6.40% at the outcome date when the bid is abandoned. Target firm’s shareholders further gain insignificant negative abnormal returns of 8.70% during the post-outcome period. It is explained that the result changes because new information is released, the market is uncertain as to whether a bid will be successful before the outcome date, and the resolution of that uncertainty accompanies no subsequent bid.

Bradley, Desai, and Kim (1983) investigate the rationale behind inter-firm tender offers by examining the returns realised by the stockholders of unsuccessful firms. Their results suggest that target firm’s stockholders, on average, gain significant positive abnormal returns and these returns do not dissipate subsequent to the rejection of the offers. In contrast, the entire abnormal returns to the shareholders of the target firms that are not subsequently taken over within five years of an unsuccessful offer dissipate within two years of the initial unsuccessful bid. It is argued that the gains to the target firm’s shareholders stem from a synergy effect, not the revelation of new information. The results are similar to Bradley (1980) and Dodd and Ruback (1977) in the sense that the permanent positive revaluation of the unsuccessful target firms is due to the occurrence of and/or the anticipation of another bid that would result in the transfer of control of the target firm’s resources.

Dodd and Officer (1987), in an Australian study, report that unsuccessful target firm’s shareholders do not suffer negative returns. It is explained that the market expects these target firms would be successful offerees later. Furthermore, there is evidence of a downward revision in the market’s value that is abnormal returns decline slightly, but not significantly in the months following a withdrawn bid. This possibly reflects a change in the expectation that such target firms are going to be involved in another bid. This is consistent with the conclusion of Asquith (1983, p. 75) that the reduced probability of merger elicits the same reaction as the termination announcement that is one of negative excess returns.
In a more recent study, Loughran and Vijh (1997) find a relationship between the post-acquisition returns and mode of acquisition and form of payment by using a sample taken from 1970-1989. However, part of the results (p. 1789) reported are that the target firm shareholders’ gains following the acquisition announcement not only disappear in cases where there is an unsuccessful bid and no significant subsequent bid (as shown in Asquith, 1983; Bradley, Desai, & Kim, 1983), but also in cases where there is a successful bid and the target firm is large compared to the bidding firm.

Obviously, all these results are similar to the earlier survey findings of Jensen and Ruback (1983) who observe that unsuccessful target firm’s shareholders for tender offers earn significantly positive abnormal returns on the offer announcement and through the realisation of failure. Those target firms that do not receive additional offers in the next two years lose all previous announcement gains, and those that receive new offers earn higher returns. In addition, unsuccessful target firm’s shareholders for mergers lose all positive returns earned in the offer announcement period by the time failure of the offer is known.

1.1.6 The Evidence of Abnormal Returns to Unsuccessful Bidding Firms

Dodd and Ruback (1977) report that unsuccessful bidding firm’s shareholders neither gain nor loss because they earn normal returns (0.58%) in the offer period. However, these returns drop over time after the event month which is similar to the results of Asquith (1983).

Asquith’s (1983) evidence shows that unsuccessful bidding firm’s shareholders experience consistently negative abnormal returns for the whole period from the outcome day until approximately one year later, and especially that the returns are significantly negative for the entire post-outcome period. It is argued that they represent a continuation of the negative stock price reaction first seen during the interim period and also represent abnormal returns for subsequent events: 37% of the unsuccessful bidding firms engage in another merger bid within one year after the outcome of an unsuccessful bid. Thus, for over one third of the firms, the post-outcome period involves both post-bid abnormal returns and abnormal returns attributed to subsequent merger
bids. In short, unsuccessful bidding firm's shareholders receive significant negative excess returns immediately after the outcome date and through the first year.

Bradley, Desai, and Kim (1983) find that there is no significant change in the returns to unsuccessful bidding firm's shareholders. However, when target firm's stockholders reject one bid and accept another one made by a rival bidder, the stockholders of the unsuccessful bidder realises a significant negative return subsequent to the rejection of the bid, most of the losses occur on the days surrounding the tender offer announcement made by the successful rival bidders. They conclude that bidding firm attempts to exploit potential synergies, not superior information.

Firth (1980) reports that in the tender offer month, bidding firm shareholders experience statistically significant negative returns; from month +12 the cumulative average abnormal returns, calculated from month -48, is -0.002 and tends to be more negative in month +24 (-0.009) and +36 (-0.010).

Dodd and Officer's (1987) evidence shows that unsuccessful bidding firm's shareholders do not experience abnormal losses (as expected). Furthermore, the returns continue to increase after the announcement month and tend to rise upwards after about six months time. The explanation is that the unsuccessful bidders are bought out of their holding at a higher price than their offer price, resulting in successful "greenmailers". In the case of persistent increasing post-offer abnormal returns, it is argued that these results from the averaging effect across bidding firms, whereby abnormal returns from greenmail occur at different points in time relative to the initial takeover announcement. It is noted that the significant positive abnormal returns, and good performance, prior to the takeovers reflect that these bidding firms will make a succession of takeovers and be bought out at considerable profit to them.

Again, all the summarised evidence is consistent with the survey findings of Jensen and Ruback (1983, p. 610) which conclude that unsuccessful bidding firm shareholders in both mergers and tender offers earn negative returns. The results are consistent with the hypothesis that mergers are positive net present value projects.
1.1.7 The Evidence of Total Gains and Combined Values of Target and Bidding Firms

Typically, bidding firms are much bigger than target firms and there is an argument that the sum of the returns to bidder and target do not measure the total gains to the merging firms because the dollar value of small percentage losses for bidders could exceed the dollar value of large percentage gains to targets, for example, Dodd and Officer (1987, p. 375) and Jensen and Ruback (1983, p. 610) suggest the use of value weighted methods to account for the size discrepancy and to ensure the results are not overstated. A recent study by Goergen and Renneboog (2002, p. 3) concludes that considering the average target is much smaller than the average bidder, the combined net economic gains at the announcement are positive, even very small. Another related view is that looking at the two entities, separately, gives a partial and perhaps distorted interpretation of the market reaction to the merger announcement (such as Cybo-Ottone and Murgia, 2000, p. 841). Thus, a number of studies measure the combined weighted returns of the target and bidding firms by forming a portfolio of the target and bidding firms and examining either their weighted average returns (weighted by the relative sizes of the two firms) or by examining the absolute dollar value of returns (value weighted returns).

For these reasons, Malatesta (1983) measures the changes in total dollar value for completed takeovers by investigating a matched sample of targets and their bidders. He finds a significant positive combined value of $32.40 million ($t=2.07$) for the merging firms. Bradley, Dasai, and Kim (1982) report positive but statistically insignificant total gains of $17.20 million ($t=1.26$) for tender offers. Thus, the survey of Jensen and Ruback (1983, p. 610) concludes that changes in corporate control increase the combined value of assets of the target and bidding firms.

Dodd and Officer (1987) use the abnormal returns for all target and all bidding firms' shareholders then, weight them by their relative market capitalisation and then aggregate them. They conclude that the evidence on takeovers in Australia is clear: takeovers are value-creating investments. The same method is used in Malatesta (1983), Lang, Stulz, and Walkling (1989), even though the results have not been shown in dollar gains in their studies, Berkovitch and Narayanan (1993), Bhagat, Hirshleifer, and
Noah (2001), Bradley, Desai, and Kim (1988), Gupta, LeCompte, and Misra (1997) and Hou, Olsson, and Robinson (2000). All of them show similar results which are consistent with other previously mentioned studies, except for Gondhalekar and Bhagwat (2000) who show a different result in that the average total gain for the entire sample is insignificantly different from zero ($-0.46 million). The weighted average is used in many other studies such as Cybo-Ottone and Murgia (2000) who are the first to analyse the stock market valuation of the largest mergers and acquisitions between banks and financial institutions announced from 1988 to 1997 in 14 European markets. They calculate the weighted average abnormal return of acquirers and targets, adopting an approach similar to that used by Houston and Ryngaert (1994). The results show a positive and significant increase in value for the mergers, but different results from those of the U.S. banking industry. This might be explained by the existence of different structures and regulations in different markets. Other studies such as Campa and Hernando (2004) and Goergen and Renneboog (2002), both European studies, report a combined cumulative abnormal return for the whole sample range, depending on the window, from 0.90% to 3.60%.

Jensen and Ruback (1983) summarise the findings of total gains from the earlier studies, use a simple average method, and conclude that shareholders of target firms gain large positive abnormal returns in successful takeovers, successful bidding firm’s shareholders earn zero returns in mergers and statistically significant small positive abnormal returns are realised by bidding firm’s shareholders in successful tender offers. Therefore, takeovers create value.

Bruner's (2002) survey suggesting the findings of twenty studies show that most of the studies report positive combined returns, with eleven of the twenty being significantly positive. He concludes that mergers and acquisitions pay the investors in the combined firms. Similarly, the survey of Campa and Hernando (2004) summarises the findings of six studies and shows that nearly all the studies report positive combined returns. Nevertheless the magnitude of the cumulative abnormal returns is relatively low, particularly in Aktas, Bodt, and Declerck (2002). This is one of the studies included in this survey, which focuses on a sample of mergers conducted in the second half of the nineties, finding half the deals having negative returns. However, overall, the
findings coincide with the previous evidence and suggest that mergers and acquisitions result in a total increase in the combined value of target and bidding firms.

Clearly, there have been hundreds of studies of mergers and acquisitions but most of them have focused on those activities in developed markets such as the U. S. stock market (see for example, Andrade, Mitchell, & Stafford, 2001; Bradley, 1980; Bradley, Desai & Kim, 1983; Chang, 1998; Datta, Pinches, & Narayanan, 1992; Dodd & Ruback, 1977; Field & Mulherin, 1999; Fuller, Netter, & Stegemolier, 2002; Hietala, Kaplan, & Robinson, 2000; Jarrel & Bradley, 1980; Jarrell & Poulsen, 1989; Martin & Sayrak, 2003), the U.K. or European stock markets (see for example, Campa & Hernando, 2004; Dumontier & Petitt, 2002; Firth, 1980; Franks & Harris, 1989; Goergen & Renneboog, 2002; Gregory, 1997; Karceski, Ongena, & Smith, 2000; Kennedy & Limmack, 1996; Limmack, 1991) and the Australian stock exchange (see for example, Brown & da Silva Rosa, 1997 and 1998; da Silva Rosa, 1991; da Silva Rosa, Izan, Steinbeck, & Walter, 2000; Dodd, 1976; Dodd & Officer, 1987).

In comparison, only a small number of studies have examined developing or emerging stock markets. A more recent study is Lins and Servaes (2001) which examines the value of corporate diversification in seven emerging markets, including the Thai stock market, and finds that diversified firms experience a discount of approximately 7% compared with single-segment firms. Moreover, the results seem to show that greater information asymmetry and market imperfections found in emerging markets provide an opportunity to expropriate small shareholders in a diversified firm structure, leading to a reduction in value.

One of the motivations of this study is my personal interest in whether or not different samples, markets, and methodologies from the earlier mentioned studies would result in different outcomes in a study of mergers and acquisitions on an emerging stock market like the Stock Exchange of Thailand (SET). Whether or not there is similar or different rationale behind takeovers. I intend to enhance the Thai financial literature especially in the corporation diversification area. Therefore, it is very interesting and it was timely to investigate these activities on the SET. The results of this study may or may not be similar to those of developed markets, but can enrich the existing financial
literature. This has encouraged me to carry out an international comparison of the
merger and acquisition effects on the Thai stock market. However, it is useful to know
in the first instance how the SET is unique and the nature of its own characteristics
when compared with other stock markets, particularly developed markets. These unique
characteristics are given below.

1. The SET consists of local individual investors participating in the market with
an approximate share of more than 50%. The remainder is taken up by institutions and
foreign investors.

2. The SET is a speculative stock market and could potentially be influenced by
private information and insider trading.

3. The market for corporate control is most likely to be less active than in other
developed markets. There is evidence about this perspective. For example, it is assumed
that an emerging market, generally has a different environment and weaker corporate
governance institutions, perhaps most financial markets tend to price assets at a discount
compared with developed markets. Since controlling shareholders in emerging markets
can expect to receive more private benefits from control at the expense of non-
controlling shareholders, they will in general value the benefits of control more than
controlling shareholders in developed markets. Dyck and Zingales (2002) attempt to
quantify the private benefits of control and analyse its determinants. They use data
based on 412 control transactions between 1990 and 2000, and construct a measure of
the private benefits of control in 39 countries, and find that the private values of control
range between -4% in Japan and 65% in Brazil, with an average of 14%. They conclude
that in those countries in which the private benefits of control are larger, are
characterised by capital markets that are less developed, ownership is more
concentrated, and privatisations are less likely to take place as public offerings.

In addition, according to Manne's theory (Manne, 1965), the main purpose of a
merger and acquisition is to replace the current management team with another. Jensen
and Ruback (1983) also argue that a takeover is the arena in which alternative
management teams compete for the rights to manage corporate resources. Therefore,
much lower takeover activities on the SET, compared with those in developed markets
is additional evidence that indicates that its market for corporate control is less active. This is partly consistent with the reasons given by Khanna and Palepu (1997): emerging markets suffer from a weakness of institution context, which drives strategy in all or most of capital markets, labour markets, product markets, government regulation, and contract enforcement.

4. Individual investors have a significant role in merger and acquisition activities on the SET with an estimated portion of more than 10%.

5. The major bidding firms are non-listed companies that constitute more than 40% of holdings.

6. After a tender offer, most target firms are still listed companies and operate separately from the bidding firms. Only a few become merged firms.

7. There are not many cases of competitive bids and unsuccessful bids on the SET.

8. Most mergers and acquisitions are friendly takeovers. Hostile takeovers are never successful on the SET. This is because of the fact that groups, which bring together several affiliated companies, are the form of organisation in Thailand. If the board of the target firms are unwilling participants in the combination of the firms, the tender offer will be unsuccessful.

9. It is expected that emerging markets have their own basic nature of volatility and risk-return opportunity (Bruner et al., 2002).

1.2 THAI LITERATURE REVIEW

There have been a very small number of studies that focus on merger and acquisition activities on the SET. For example, the studies of Leemakdej (1998), Anuchitworawong (2001), Jarusomridhi (2002) and Varaboonweesuk (2003).

1.2.1 The Evidence from Studies of Target and Bidding Firms
Partly similar to this study, the study by Varaboontweesuk (2003) suggests that on the announcement date, the AARs and the CAARs for the target firm's shareholders are insignificant positive at 0.12% and significant positive at 12.72% respectively. Meanwhile, the AARs and the CAARs for the bidding firm's shareholders are insignificant negative at -0.35% and significant negative at -5.59% consecutively. Similarly, Leemakdej (1998) also finds that the positive CAARs over the period (-2,0) for the target firm's shareholders are about 20%. In addition, both suggest that there is evidence that takeover information leaks into the market about 40 days (approximately 2 months) before the announcement date, generating positive abnormal returns for the target firm's shareholders. Meanwhile, only Varaboontweesuk (2003) reports that the news is available to the market approximately 10 days before the event date, resulting in negative abnormal returns for the bidding firm's shareholders.

1.2.2 The Evidence from Studies of Successful and Unsuccessful Target Firms

Anuchitworawong (2001) finds that abnormal returns occur before the announcement date and are rising until the announcement date. There are positive CAARs around 15% over the period (-2,0) for successful target firm's shareholders. The abnormal returns are increasing for another 25 days from the announcement date before starting to decrease gradually. Meanwhile, on the event date, the CAARs for the unsuccessful target firm's shareholders are positive at 14.60%. The abnormal returns drop gradually but later reverse upward to achieve a peak level of about 20% during the 60-day range.

1.2.3 The Evidence from Studies of Successful Bidding Firms

Also, Anuchitworawong (2001) suggests that on average, the successful bidding firm's shareholders realise positive CAARs of about 2-12% during the offer period, but these returns decline gradually afterwards. In addition, they realise significantly positive abnormal returns 15 days prior to the event date but negative abnormal returns 5 days prior to the event date. It is explained by the expectation among the investors

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11 Once the SEC has approved the bid, the tender offer has to take place during the tender offer period of at least of 25 to 45 trading days.
Thus, it is clear that the results are consistent and it is concluded that on average, the takeover effect is positive resulting in substantial positive abnormal returns for target firm’s shareholders, but small negative abnormal returns for bidding firm’s shareholders. Meanwhile, both successful target and bidding firms’ shareholders gain positive abnormal returns. Also, the market reacts to the takeover news before the announcement date. The results give robustness to past studies of developed stock markets.

However, nearly all Thai studies have studied only a target or bidding firm’s effects rather than those of combined event firms, but many more studies have concentrated on target firms’ investigation rather than bidding firms. So, we know much less about the effects of takeovers on the shareholders of bidding firms as well as the total and combined values. Importantly, most of them have investigated only the performance during the bid announcement period, used only the market model, and limited ranges of statistical tests. Thus, a more comprehensive examination of merger and acquisition performance on the SET was encouraged. Also, the performance analysis of this study included more sample data by covering a longer period from year 1992 to 2002. An in-depth investigation was my intention: 27 alternatives for target firm examinations, 80 alternatives for bidding firm investigations, successful and unsuccessful tender offer effects were included in this study. For bidding firm performance investigation, the event periods were divided into a Pre-bid period, a Bid period, and a Post-bid period or a long-horizon event study. To gain the benefits of the results as much as possible, both the quantity and quality of the analysis was taken into account. In addition to a number of alternatives for target and bidder investigations, 3 models and 4 t-statistic tests were applied in this research: these are the market model, market-adjusted model, and matched reference portfolio method; standardised-residual test, standardised cross-sectional test, conventional t-tests, and bootstrapped skewness-adjusted t-statistic tests. Additionally, the combined values were measured by looking at pair event firms’ performance. Also, the motives for takeovers were not excluded from the study by analysis the abnormal returns on unsuccessful targets, successful and unsuccessful bidders, and total gains. Thus, I investigated more issues than those
suggested by Agrawal, Jaffe, and Mandelker (1992), and by Franks, Harris, and Titman (1991) that the highlight of two issues in the study of takeover events are the measurement of shareholder wealth effects and the assessment of their significance. Therefore, this study enhances the findings, particularly by offering more variety in the results and the comparison results with the outcomes of studies of other stock markets. Finally, the results enrich the extant financial literature especially on Thai and emerging markets.

In conclusion, in this thesis, I used a different methodology compared with those of the existing Thai studies by using a matched reference portfolio as the benchmark. A control group of firms was constructed first by using the listed companies on the SET then, the size and book-to-market ratio was matched with the event firms. The 1992-2002 periods of data were collected from three main sources: the SET, SEC and Datastream. The data were cross-checked and some missing data was filled in from another source, The Brooker Group Public Company Limited, a research and consulting company. As a result, I received more complete and comprehensive data for conducting this research. Moreover, essential criteria were predetermined for construction of a matched reference portfolio such as the new listed companies, delisted companies, and the companies classified under the rehabilitation sector or "REHABCO" in order to reduce the potential biases and build up the appropriate benchmark. Particularly, "REHABCO" (see terminology in Chapter 2 for details) was never mentioned in any study partly due to the different nature of the stock markets of the studies involved, also this sector only was established in 1998 for the Thai stock market. As a result, I provided another perspective on the performance analysis of Thai merger studies. Furthermore, I applied several more statistical significance test methods in terms of numbers and sophistication used in the study, including both parametric and non-parametric tests, to strengthen the results. Also, to ensure the consistency of the results, the different models were replicated within the same examination period; also the same models were repeated with different event-windows. Thus, I believe the findings of this study can enrich the Thai financial literature especially in the mergers and acquisitions area.

The remainder of the thesis is organised as follows. The next chapter describes the Thai stock market and its regulations. Chapter 3 explains the data examined and provides a
breakdown of details for each period of investigation, also the methodology especially the models, benchmarks, and tests of performance measures that were used in answering the research questions. Chapter 4 details the motives for takeovers, the results and the methodology of related studies. The results of target and bidder firms from the market and market-adjusted (zero-one) model analyses, those of successful and unsuccessful target and bidder firms, and the comparisons of these are presented in Chapters 5. Meanwhile, those of characteristic target and bidder, those of target and bidder from the matched reference portfolio method analyses, total gains, combined values, and motives for takeover investigations are presented in Chapters 6. Chapter 7 provides the conclusion for the thesis.
CHAPTER 2
THE THAI STOCK MARKET

2.1 BACKGROUND INFORMATION ON THE STOCK EXCHANGE OF THAILAND (SET)

The establishment of the first official securities market in Thailand was initially proposed as a part of the Second National Economic and Social Development Plan (1967-1971). It is considered that the market's most important role is to mobilise funds to support Thailand's industrialisation and economic development. The Thai capital market can essentially be divided into two phases, beginning with "The Bangkok Stock Exchange" which was privately owned, followed by the establishment of "The Securities Exchange of Thailand".

The inception of the Thai stock market began in July 1962, when a private group established an organised stock exchange as a limited partnership. The group later became a limited company and changed its name to the "Bangkok Stock Exchange Co., Ltd." (BSE) in 1963. Despite its well-intended foundation the BSE was rather inactive. Annual turnover value consisted of only 160 million baht in 1968, and 114 million baht in 1969. Trading volumes continued to fall sharply thereafter to 46 million baht in 1970, and then 28 million baht in 1971. The turnover in debentures reached 87 million baht in 1972, but stocks continued to perform poorly, with turnover hitting an all time low of only 26 million baht. The BSE finally ceased operations in the early 1970s. Therefore, it is generally accepted that the BSE failed to succeed because of a lack of official government support and a limited investor understanding of the equity market.

Thus, the Second National Economic and Social Development Plan (1967-1971) proposed a plan for the establishment of such a capital market, with appropriate facilities and procedures for securities trading. In addition, in 1969, as recommended by the World Bank, the government acquired the services of Professor Sidney M. Robbins, who had previously served as Chief Economist at the United States Securities and Exchange Commission, to study the development channels of the Thai capital market.
The same year proved an eventful one for the Thai capital market, as the Bank of Thailand also formed a Working Group on Capital Market Development, which was assigned the task of establishing the stock market. A year later, in 1970, Professor Robbins produced a comprehensive report entitled "A Capital Market in Thailand". This report became the master plan for the future development of the Thai capital market.

In 1972, the Government took a further step in this direction by amending the "Announcement of the Executive Council No. 58 on the Control of Commercial Undertakings Affecting Public Safety and Welfare". The changes extended Government control and regulation over the operations of finance and securities companies, which until then had operated fairly freely. Following these amendments, in May 1974, long-awaited legislation establishing "The Securities Exchange of Thailand" (SET) was enacted. This was followed by revisions to the Revenue Code at the end of the year, allowing the investment of savings in the capital market. By 1975 the basic legislative framework was in place and on April 30, 1975, "The Securities Exchange of Thailand" officially began trading. On 1 January 1991, its name was formally changed to "The Stock Exchange of Thailand" (SET).

The SET offers trading through five different boards. The majority of share trading occurs on the main board, used for common and preferred stocks, warrants and unit trusts. The foreign board is used for stocks registered in the name of foreign entities or individuals. The big lot board is used for trade of common or preferred stocks, warrants or unit trusts in quantities of more than three million baht or one million shares. The odd lot board is used for trade of common or preferred stocks, warrants and unit trusts in quantities less than one board lot. The special board is used for trading in government and state enterprise securities.

Although Thailand had a stock market since 1962, the size of capital raised from the public offerings and investment in capital shares and other equity instruments, such as warrants and convertible debentures, had not been large when compared to the size of lending and deposits in the commercial banking system. Public engagement in the capital market remains small, with approximately 300,000 accounts open with local securities companies (even though almost 1 million Thais are estimated to invest in...
local mutual funds) compared with 56 million bank deposit accounts and the country’s overall population of 63 million (The SET Investment Guide 2004). Thailand’s financial system has historically been weighted towards the banking sector. Outstanding bank assets at the end of 2003 stood at 6.82 trillion baht (US$165 billion) compared with the country’s 2003 Gross Domestic Product of 5.90 trillion baht (US$143 billion). In contrast, outstanding debt registered with the Thai Bond Dealing Center (TBDC), the country’s over-the-counter market, was just 1.89 trillion baht (US$46 billion) at the end of 2003, while the market capitalization of the SET stood at nearly 4.80 trillion baht (US$116 billion) (Bank of Thailand, The National Economic and Social Development Board, The Stock Exchange of Thailand and The Thai Bond Dealing Center). Since the financial structure of the private sector relies mostly on lending from financial institutions, the debt-to-equity ratios of most Thai companies are relatively higher than those in the countries with strong capital markets. Consequently, when the banking system faced a crisis, the majority of businesses suffered and this led to widespread economic problems. The Thai government eventually had to absorb the losses of the financial system at great cost. Thus, it is vital for the country to have a strong capital market as an alternative for business fund raising and public investment to help it become less dependent on and vulnerable to the banking sector. Specifically, Thailand needs to achieve a balance amongst the equity, debt, and credit market.

The 1992 Securities and Exchange Act stipulated that the Securities and Exchange Commission (SEC), a single unified supervisory agency, will serve as the regulator of the Thai capital market. The Bank of Thailand (BOT), the country’s central bank, in turn introduced regulatory duties over the money market and financial sector.

*As defined in the Securities and Exchange Act, B.E. 2535 (1992) ("the SEA") (1992), the SET’s primary roles are:*

1. To serve as a centre for the trading of listed securities and provide the essential systems needed to facilitate securities trading,

2. To undertake any business relating to the Securities Exchange, such as a clearing house, a securities depository centre, a securities registrar, or similar activities, and
(3) To undertake any other businesses approved by the SEC.

*For the SET’s vision and mission, the SET is a liquid secondary market for securities to raise funds and win confidence from all stakeholders. This will be achieved by:*

1. Expanding its investor base, emphasizing all types of investors, and cultivating an investment culture;
2. Providing diverse securities of high quality to raise funds;
3. Providing safe and reliable securities trading and support systems that meet international standards by using efficient technology;
4. Offering timely, accurate and complete information disclosure and widespread investment-related education;
5. Operating efficiently in terms of speed, quality, cost and prudent risk management for the organization as a whole, its affiliates and related parties; and
6. Supervising activities with justice, in line with the spirit of the regulations governing it and with high ethical principles.

*Figure 1. The SET’s Board of Governors.*

The SET’s Board of Governors is comprised of a maximum of eleven people, five of whom are appointed by the SEC, and the remainder is elected by the SET members. The SET President, appointed by the Board, is an ex-officio member of the Board. The Board is responsible for formulating the SET policies, and supervising the Exchange’s operations. However, certain rules and regulations prescribed by the board must be approved by the SEC.
Only member companies of the SET are authorized to buy or sell securities on the Exchange. Firms which have obtained a securities license from the Ministry of Finance (following recommendation by the SEC) to engage in the securities business as stock brokers may apply for membership at the SET. Membership status is obtained once approval is granted by the SET Board of Governors. At present (July, 2004), the SET has 49 member firms. The various types of securities that are issued and traded on the SET are: Ordinary Shares, Preferred Shares, Debentures, Convertible Debentures, Warrants, Short-term Warrants (SW), Derivative Warrants (DW), and Unit Trusts.

Investors in the SET can be broadly divided into three groups: retail investors, Thai institutional investors, and foreign investors. Like many other Asian stock markets, retail investors predominantly drive trade on the SET. On average up to 75% of daily turnover comes from retail investors, with foreign investors representing another 15% to 20% and the remainder from Thai institutional investors. For example, as of March 2004, local non-institutional investors were main players in the market accounting for 72.40% of total turnover value, while foreign investors and local institutional investor accounted for 19.80% and 7.80% respectively. Thus, the SET is expected to consider that it is crucial to achieve a greater balance between retail investors who mostly focus on short-term profits and institutional investors who looked more towards long-term gains.

For decades, the Thai economy has undergone a remarkable transformation into one of the most diverse economies in Southeast Asia. Industry developed rapidly in the 1970s with the support of foreign investment. From 1985 to 1994, a boom in export-oriented manufacturing helped Thailand post annual economic growth that averaged 8%, among the highest growth rates in the world. At the same time, it had been a period of rapid growth of the stock market, the Thai capital market played a prominently significant role as a fund-raising source for the economic system. There was a large increase in the number of listed companies on the SET, from 270 in 1991 the number rose to 389 at the end of 1994. Similarly, the funds raised from the issuance of new shares which was only 6 billion baht during the second half of 1992 rose to 195 billion baht in 1994. Also, the Office of the SEC expanded its organisation according to the expansion of activities in all areas in line with the growth trend of the capital market. As well the new developments, many new regulations were introduced and accepted.
internationally. For example, the net capital rules for securities companies, the requirement for the separation of finance and securities businesses, the regulations on share acquisition for business takeovers, the opening of applications for private fund management licenses, and the increased reliance of a large number of listed companies on offshore capital raising through issuance of Euro-convertible debentures (ECD).

However, it is considered that the emerging countries in Asia have long been the major recipients of capital from the Western markets. Foreign banks which lent funds to the Thai banks before the 1997 crisis tended to over lend. The bank channel tended to bring in too much capital and thus there was the problem of allocation of resources. It was found that the bank channel was too weak to handle very large rapid flows. For example, the bank lending machinery was not able to assess the risks of projects properly (Mr. Thirachai Phuvanatnaranubala, the Secretary-General, The Securities Exchange Commission, Thailand, at the Bond Market Conference, Kuaia Lumpur, 29 March 2004). Like many Asian countries, the role of Thai banks as a source of capital has long out-weighted that of the equity and bond markets. The reliance on short-term bank loans for long-term investment represents a mismatch and is risky. This view was evident in the minds of economic policy makers during the Asian economic crisis (Dr. Visit Supinit, the Chairman, The Stock Exchange of Thailand, The SET Investor Guide 2004). At the same time, many companies turned to issue ECD for offshore capital mobilising, due to the big difference in interest rate between onshore and offshore markets, perhaps 13% and 1.75% (First Decade of the Thai SEC and Capital Market in Thailand 1992-2002, pp. 20-21). This partly contributed to the creation of over-supply conditions in the country’s basic industries such as petrochemical, steel, and pulp and paper. It was a factor that put pressure on the Baht value’s before leading to its devaluation in July 1997, that resulted in the exchange rate that was approximately 25 Baht per US$ moving to around 40-45 Baht per US$.

In 1997, the Thai financial market was severely affected by the economic and financial turmoil, especially after the announcement of the change of currency exchange system to a managed float system on 2 July 1997. Inevitably, the capital market was badly impacted by this. On 5th November 1996, the SET index was at 919.01 and the total stock market capitalisation of 455 listed securities was around US$ 110 million. But, on 28th October 1997, the SET index was at 460.80 representing a decline of nearly
50% with 46 listed stocks being suspended from trading. The total stock market capitalisation was lowered to approximately US$ 36.80 million. Also, on 5th November 1996, Thailand’s International Reserves amounted to around US$ 39.90 billion and the exchange rate was 25.84 Baht per US$. As of 15th October 1997, the International Reserves stood at US$ 30.7 billion (inclusive of a partial loan under the International Monetary Fund (IMF) package) and the exchange rate was around 38.50 Baht per US$ ("Asian Financial Center in the 21st Century", speech by Mr. Pakorn Malakul Na Ayudhya, the Secretary-General, The Securities and Exchange Commission, Thailand, at the XXIInd Annual Conference of the International Organisation of Securities Commissions, 5 November, 1997).

Many finance and securities companies were ordered to close while others discontinued operation. This left only 23 companies out of 62 prior to the crisis. Investor confidence in the capital market changed. Mutual funds, both equity and fixed-income, were extensively affected, especially fixed-income mutual funds. Many of these could not be cashed to accommodate redemption by investors because the financial institutions were ordered to suspend their operations. The banking sector had serious problems with non-performing loans (NPLs). Most listed companies suffered exchange rate losses or a decline in demand for their goods and services. Morgan Stanley Capital International Inc., the provider of the MSCI index, which is accepted by institutional investors worldwide, reduced the weighting of the Thai stock market in the MSCI Asian index from 5% to only 2% in 2000. The office of the SEC had remarkably changed its thinking with regard to the supervision of activities and organisations in the capital market. For example, the supervision on non-essential issues was more relaxed, the activities which did not directly affect the integrity of securities companies were accommodated as requested by securities companies. In addition, to increase efficiency in the operation, a memorandum of understanding (MOU) was signed to clearly delineate areas of responsibility of the SET and the Office of the SEC. Under this MOU, the SET would enhance its marketing role attracting more companies to be listed and expanding the investor base while the Office of the SEC would be the sole agency to perform a regulatory role contributing to market development in the long-term.

The Thai economy has gradually recovered since 1998. There were strong signs of this in the years 1999-2000 with a GDP growth rate of 4.20% and 4.40%
respectively. Even though the growth rate decelerated in 2001, it continued to bounce back in year 2002 with a rate of 5.40%. Furthermore, in 2003 the Thai economy pleasantly surprised most pundits with a GDP growth of 6.70%, among the top performances in the region, and the second highest in Asia after China. Thai listed companies posted an amazing 46% increase in net profits in 2003 over the previous year. The SET index soared by 117%, the highest growth rate in the world (The Thai Capital Market in 2003 and Outlook in 2004, Annual report 2003, The Stock Exchange of Thailand). The daily average turnover reached 19 billion baht (US$456 million) compared with just 8.4 billion baht (US$202 million) in the previous year. Low interest rates, higher commodities prices and soaring consumer and business confidence helped push up both domestic demand and exports to an 18.60% increase from the previous year.

For the year 2004, the GDP growth has been estimated at 6% to 7% with export growth targeted by the government at 15% (The National Economics and Social Development Board), exports, domestic demand, and private investment are expected to be key factors. Particularly, private investment is anticipated to be the main driver for the growth. This is partly because industrial capacity utilisation is nearing 86% across the manufacturing sector and reaching full utilisation in some sectors such as petrochemicals, textiles, and automobiles (M.R. Pridiyathorn Devakula, the Governor, The Bank of Thailand, The SET Investor Guild 2004, p. 14). Private investment over the past several years has been 12% of GDP which is well below the pre-crisis level of 35% of GDP. As the economy grows, demand for capital will increase. Thailand will face huge demands for new investment in infrastructure in the year ahead (Dr. Vijit Supinit, the Chairman, The Stock Exchange of Thailand, The SET Investor Guild 2004, p. 20). Equity remains the lowest cost funding source available. Therefore, the SET is a crucial element of the Thai economy and will increasingly be an important source of funds for the private sector in the future.

At the same time, stock market growth will help lead to greater economic stability. The SET is expected to bring into the market more new companies as well as a number of large state enterprises, under the government’s privatization policy. In addition, the government is projecting a balanced budget for the year 2005. The budget calls for an expenditure of US$ 28 billion, with spending increases earmarked for new
infrastructure investment, competitiveness initiatives, and community development programs (Dr. Somkid Jatusripitak, the Finance Minister, The SET Investor Guide 2004, p. 10). This would be a factor amongst those that enhance confidence that the SET remains one of the most interesting markets in Asia. As of June, 2004, a total of 418 companies were listed on the SET with a market capitalisation of 4.17 trillion baht (US$ 102 billion) compared with 405 companies and 4.79 trillion baht (US$ 120 billion) in December 2003.

In addition, the Asian Development Bank (ADB) forecasts the combined GDP of the East Asian countries will continue to grow at 6.50% or 5.10%, excluding China, in 2005. Also, exports and robust domestic demand are key factors that will contribute to GDP growth rate of Thailand to 6% in 2005. The outlook is subject to three main downside risks: oil prices, U.S. interest rates, and the Chinese economy, but the view is broadly similar to that of the previously mentioned forecast.

Interestingly, the Institute of International Finance (IIF) estimates that net private capital flows to the five crisis-affected countries in East Asia (Indonesia, Korea, Malaysia, Philippines, and Thailand) almost tripled from US$9.79 billion in 2002 to US$25.51 billion in 2003. This was driven almost entirely by a sharp reversal in portfolio equity investment, from US$-0.41 billion in 2002 to US$15.08 billion in 2003. The investors moved cash out of low-yielding assets into higher-yielding securities in emerging markets, including the five crisis-affected countries. The IIF further forecasts a similar pattern of inflows for year 2004, with the estimated net private flows of US$30.23 billion and estimated net portfolio equity investment of US$22.60 billion. Again, the rise is likely to be driven by net portfolio equity inflows, despite concerns over global interest rate increases.

Furthermore, Malaysia and Thailand have been revised upwards recently by at least one of the three major global ratings agencies: Moody’s, Standard & Poor’s, and Fitch IBCA.

According to the forecasts of strong economic growth in this region; as well as in the Thai economy, the activities on the SET are expected to continue to grow.
Mergers and acquisitions are always active in line with the growth of the market as proven in many studies. For example, Nelson (1959) finds that merger waves starting in the late 1800s are associated with stock market booms while Jovanovic and Rousseau (2001) show that this correlation continues through 2000. Both studies suggest that many merger waves were caused by changes in the business environment that both increased overall stock prices and resulted in more profitable merger chances. Furthermore, Rosen (2003, p. 6) argues that hot stock markets should be better for bidding firm’s shareholders than mergers at other times. This infers that firms are more likely to make acquisitions when their stock prices are overvalued (see details in Dong, Hirshleifer, Richardson, & Teoh, 2003; Rhodes-Kropf, Robinson, & Viswanathan, forthcoming). Also, this can lead to a correlation between hot markets and mergers (Rosen, 2003, p. 7). Therefore, the Thai takeover businesses will be much more active than before especially when compared with those in the past several years’ statistics.

2.2 THE SECURITIES AND EXCHANGE COMMISSION (SEC)\textsuperscript{12}

In the early phase, the capital market only focused on the secondary market for securities without a concurrent focus on the primary market. This reduced the effectiveness of the important role of the secondary market for supporting the primary market. Thus, a unified law and single agency was considered necessary.

The SEC was established to supervise and develop the primary and secondary markets of the country’s capital market system and financial or securities related participants and institutions. The SEC’s important roles are to formulate policies, rules, and regulations regarding the supervision, promotion, and development of securities businesses as well as other activities pertaining to the securities businesses. For example, issuance and offer of securities for sale to the public, securities exchange, the Over-the-Counter Centre, and entities related to securities businesses such as acquisition of securities for business takeovers and prevention of unfair securities trading practices.

\textsuperscript{12} Prior to the reading, "the SEC" refers to the entire organisation of the SEC, while "the Office of the SEC" is used when specifically referring to the Office that implements those policies. However, "the SEC" is generally used in other chapters.
The policy objectives of the SEC in supervising and developing the capital market are as follows:

(1) To maintain fairness in capital market and financial market,
(2) To develop and enhance efficiency of the capital market and financial market,
(3) To maintain long-term stability of the financial system, and
(4) To strengthen international competitiveness of the Thai capital market.

The SEC's mission is as follows:

1. Public issuing and offering of securities. The SEC Act allows the business sector to issue and offer various kinds of securities, namely equities, debt instruments or hybrid instruments for sale to mobilise funds from the public. Under the SEC Act, eligible equities or hybrid instruments issuers are restricted to public limited companies while issuers of debt instruments can either be public limited companies or limited companies. Any issuers who wish to make a public offering of securities must first obtain approval from the Office of the SEC. The issuers must file the registration statement and draft prospectus which must disclose and contain accurate, reliable, and sufficient information necessary for investors to make investment decisions. Furthermore, issuers must report updated information for public disclosure. If the issuance is defined as a private placement (not offered to the public), an approval will automatically be granted and regulations on public disclosure are also exempted.

2. Securities business. Under the SEC Act, securities businesses mean securities brokerage, securities dealing, securities underwriting, investment advisory service, mutual fund management, and private fund management. The private sector is allowed to take part in securities businesses by applying for licenses from the Minister of Finance upon the recommendation of the SEC. For mutual funds, under the SEC Act, prior to the launch of each fund, a mutual fund management company must obtain an approval from the Office of the SEC. In addition, the SEC has set out policies to encourage and increase greater numbers of institutional investors to strengthen stability in the capital market. The activities are raising the number of operators in mutual fund management, setting up various funds, and issuing licenses to operate new securities businesses such as private fund management.
3. The securities exchange. The SET is considered to be an important secondary market for trading securities which were initially issued and offered for sale to the public in the primary market. The SEC Act empowered the SEC to supervise securities exchanges which include the SET and the Bangkok Stock Dealing Center (BSDC), the trading centre for securities which have been offered to the public but not listed on the SET, and securities sold under private placement among institutional investors. In addition, the SEC Act stipulates that securities listed on the SET are not allowed to be traded in any other exchanges. To add liquidity to securities which are offered for sale to the public but are not listed on the SET, in September 1995, the SEC approved the establishment of the BSDC and officially began its operation on 14 November 1995.

In terms of the relationship between the SEC and the SET's Board of Governors, the SEC plays an important role in setting out policies and approving main regulations for the SET. For example, listing and delisting rules, and commission fee structure. As for its day-to-day operation, the SET is empowered by the SEC to work independently towards the supervision of related personnel and institutions. Furthermore, as the SET is the immediate monitor of the securities trading information, whenever any suspicious practices in securities trading occur, the SET holds the primary responsibility for inspection and gathering all related evidence and facts for further action and for coordination with the Office of the SEC.

4. Acquisition of securities for business takeovers. The SEC Act protects the interests of shareholders or holders of any convertible securities of listed companies on the SET or traded in the BSDC or public limited company regarding the acquisition of securities for business takeovers as follows:

4.1 Disclosure of information: A person acquiring or disposing such securities including shares, share warrants, convertible securities which can be converted into shares of companies having their securities listed on the SET, trade in the BSDC, or of public limited company, must file an acquisition or disposition report to the Office of the SEC, within the next business day. This is in case such acquisition or disposition causes the aggregate holding of the same type of securities to reach or pass a multiple of 5% of the total number of the securities of a business sold.

4.2 Tender offer: A person who acquires or holds the securities of a business up to the point at which the change in control of a business has taken place must make a
tender offer to provide all securities holders with an equal opportunity to sell their securities to the offeror at the same price. Furthermore, the securities holders must receive adequate information and advice to assist them in making the decision. The trigger points which are regarded as changes in the control of a business and require making a tender offer to purchase all securities are as follows:

- an increase of the number of securities held by a person from less than 25 % up to 25 % or more
- an increase of the number of securities held by a person from less than 50 % up to 50 % or more
- an increase of the number of securities held by a person from less than 75 % up to 75 % or more
- any acquisition of more than 5 percent within any 12-month period while holding securities between 25-50 %

The offered price for the tender offer must be the same for all shareholders or securities holders and must not be less than the highest price at which the acquirers had acquired such securities within 90 days prior to the tender offer.

Apart from the mentioned mandatory offer, a person may also make a voluntary offer in order to purchase and hold 25% or more of securities of a business under the provision of the Take-over Codes of the SEC Act (more details in next section).

5. Unfair securities trading practices. The SEC Act states that unfair securities trading practices include dissemination of misleading information relating to the facts of securities to the public, dissemination of any false news to become rumour, trading of securities by using inside information and causing unusual price movement by the continual practices of price manipulation that howsoever tempt investors. Unfair securities trading practices are criminal offences with severe penalties under the SEC Act. The SET and the BSDC are the primary responsible agencies to monitor securities trading prior to submitting the cases to the Office of the SEC which is empowered to examine the report and gather all related evidence prior to taking further legal proceedings.
In short, the SEC has the mission of developing and supervising the capital market to ensure its efficiency, fairness, transparency and integrity, and to be an important part in the nation’s economic development and stability. However, the Office of the SEC has initiated and played important roles in many activities in two main areas, capital raising and securities trading, that contributed to the development of a strong and credible capital market. For example, The Office of the SEC has facilitated fund raising of private sector, built up investors’ confidence, supervised securities companies, and maintained fairness and integrity in securities trading.

The SEC is comprised of the Minister of Finance as the Chairman, the Governor of the BOT, the Permanent-Secretary of the Ministry of Finance, the Permanent-Secretary of the Ministry of Commerce, four to six well-qualified persons, appointed by the Cabinet upon the recommendation of the Minister of Finance, and who must include experts from each of the following fields: law, accounting, and finance, and the Secretary-General of the Office of the Securities and Exchange Commission.

Even though the Office of the SEC was legally established on 17 March 1992, it was not in full operation at the time. For example, there were no contacts with, or admission of applications from the private sector, as it was in the preparatory stage as allowed under the law. The Office of the SEC began operation on 19 May 1992. Mostly, the initial operation was about maintaining continuity of supervisory duties along the lines of previous responsible agencies before the work became centralised under the Office of the SEC under the new law. The operation had a reputation for strictness and requiring detailed information. Also, its emphasis was on supervising to ensure the stability and solvency of companies that were making public offerings of their securities and those of intermediary institutions such as securities companies. Thus, the main task was to screen the companies applying for initial public offerings (IPO) with the intention to be listed on the SET.

To ensure fulfillment of its duties, the SEC was designed to have sufficient independence as well as flexibility in its operation. The organisation’s independence is reflected in the governance structure of the Board of the SEC and the office of the SEC while the flexibility is evidenced through the SEC’s power to issue additional
regulations in matters specified under the SEA framework. In addition, the SEC was sufficiently endowed with initial funding and power to impose various fees in the capital market to cover its operation costs. This allows it to have financial independence and not having to rely on the government’s budget. In terms of human resources, the staff of the Office of the SEC are not civil servants and are not subject to the government payroll and bureaucracy. This enables the organisation to compete with the industry in recruiting competent personnel.

For a newly established supervisory agency like the Thai SEC, an opportunity to learn from other experienced agencies, particularly those in the more developed capital markets, was considered very useful and necessary for the operation of the organisation in the early stage. As such, in October 1992, the Office of the SEC became an ordinary member of the International Organisation of Securities Commissions (IOSCO), an international body with worldwide capital market supervisory agencies as members. As a result, the Office of the SEC has been able to establish a good relationship with many of the foreign supervisory agencies. Having learned from the more developed markets, the Office of the SEC, in turn, has shared the experience gained with representatives of other countries by arranging for them training courses and seminars such as China, Singapore, Sri Lanka and Vietnam. In addition, the Office of the SET had an opportunity to receive a group of academic institutions from Canada and the U.S., who sought to acquire knowledge regarding the legal framework and supervision structure of the Thai capital market, as well as the role, duties, and operation of the Board of the SEC and of the Office of the SEC.

However, one basic problem, which has prevailed since the establishment of the SET in 1975, still remains, that is the number of investors in the SET and the proportion of investment in the capital market are relatively small compared with the country’s aggregate savings. Thai people, in general, choose to put their savings in financial institutions rather than in other investment alternatives, probably because the Thai economy has been traditionally bank-based. The fact that the authorities try to protect depositors from the impact of financial institution crises, has also created a culture of saving without regard to associated risks. Moreover, in the past, Thailand implemented a high interest rate policy to attract foreign capital that contributed to such a very favourable risk versus return profile on deposits that savers had no need to consider
other investment alternatives aside from saving with financial institutions. This has been an important obstacle for the expansion of the investor base in the Thai capital market ("Looking into the Future", First Decade of the Thai SEC and Capital Market in Thailand 1992-2002, pp. 172-173).

Nevertheless, between 2001 and 2002, when deposit rates started to decline successively and the authorities were considering the setting up of a deposit insurance institution which would provide only partial protection to depositors, savers became aware of the necessity to take into account the risk level of each financial institution and to look for other investment alternatives. At the same time, the capital market had been developed to the extent that the corporate governance of listed companies was strengthened which helped enhance public confidence in the market which then became an important alternative for savers. In addition, global competition put pressure on the SET to adapt and respond to the requirements of all participants, with commercial focus and flexible management. Looking for business alliances is also another pressure. However, the Thai stock market is a relatively small market in size which makes it less attractive to potential allies compared with larger markets. Besides, Thailand still has control on capital flows which is an obstacle to international investment.

Currently, businesses are developing very rapidly into more varied models. Operations in one business want to expand into another. For instance, securities companies that have been undertaking brokerage business are keen to become exchanges or trading platforms. Commercial banks are interested to expand into other businesses, whether it is securities or insurance. These changes in business model previously described are a consequence of the changing economic environment which necessitates horizontal integration to reduce business costs by achieving economies of scale. Moreover, the changing behaviour and demands of clients have required the provision of a more comprehensive range of products and services for clients. However, whichever way business models change, it is expected that the important mission of the Office of the SEC is to avoid unreasonable constraints on initiatives and developments in the business models that are changing. Supervision must be flexible and take into account the advantages and disadvantages in leading or directing the form of business, especially with issues that would create difficulties or unnecessary costs to the private
sector. Meanwhile, consumers of services must also be assured of good and fair treatment under efficient supervision.

Under the present supervision structure, the Bank of Thailand (BOT) supervises commercial banks, finance companies, and credit financiers, while the Department of Insurance in the Ministry of Commerce looks after insurance companies, and the Office of the SEC oversees securities companies. Even though the structure was appropriate for business conditions in the past, a review may be necessary to evaluate whether such a structure still accommodates developments in the business sector. In some countries, such as Australia, there has been a restructuring of the authorities' supervision structure along functional lines. It has separated supervisory agencies according to the type of potential market failure. For example, an agency to supervise monetary policy and payment system for stability and efficiency of the financial system, an agency for the prudential supervision of financial firms, and an agency to supervise the conduct of market operators and intermediaries to provide consumer protection and maintain market integrity. In other countries, such as the U.K., Japan, and South Korea, supervision is centralised with a single regulator (First Decade of the Thai SEC and Capital Market in Thailand 1992-2002, pp. 178-197). Thailand may follow these developments and thoroughly analyses the advantages and disadvantages of different supervision structures. However, while a decision has not been made on a new model, emphasis is expected to be placed on cooperation among supervisory agencies to ensure consistency in the regulations to be observed by operators.

In this regard, it might be argued that the Thai stock market has been weak and that corporate governance in Thailand has not been acceptable in all aspects. The SEC argues that each country has its own strengths and weaknesses. However, on the regulation side, they have done well compared with other markets. Many of the innovations under the recent U.S. Sarbanes-Oxley Act have long existed in Thai regulations. For example, the Thai SEC already has the oversight and enforcement authority over auditors of listed companies in a similar fashion to the U.S. recently established Public Company Accounting Oversight Board, auditors of listed companies have to be registered or recognised by the SEC, public companies are prohibited from lending to their directors and management, and underwriters are prohibited from issuing analyst reports to support their underwriting activities during the offering period.
Since the strengthening of the corporate governance of listed companies is imperative for creating a strong capital market, the government designated the year 2002 as a year of good corporate governance. The Cabinet set up the National Corporate Governance Committee chaired by the Prime Minister or the assigned Deputy Prime Minister. Therefore, it clearly shows that corporate governance has become established on the national agenda and the government is serious in enhancing the corporate governance of Thai companies to a level comparable with the standard in developed countries.

Since 2000, all listed companies have had to comply with the SET’s corporate governance regulations. These regulations require a listed company to have at least two outside directors on its Board and to set up an internal audit system. More recently, listed companies have needed to outline in annual reports their Corporate Governance (CG) policies based on the fifteen core principles announced in early 2002 by the National Committee on Corporate Governance. The main concept of good CG is the accurate, timely and complete disclosure by companies of information essential to investors. In short, companies listed on the SET must comply with a range of stringent requirements in terms of information disclosure and the preparation and reporting of financial statements and reports. Also, all listed firms must have audit committees, which comprised of at least three outside independent directors, to help review the
accuracy of financial reports, internal controls, and compliance with the SET's regulations and the principles of good CG by the firms.

At the same time, the SEC has been trying to enhance the CG of the listed companies. The short-term goal is to differentiate those companies from the others through promotion of Corporate Governance Rating (CG Rating) by working closely with TRIS (Thai Rating and Information Services Co., Ltd.). CG Rating is a tool that helps investors to clearly distinguish the levels of corporate governance of each listed company. In supporting this project, the SEC has entrusted TRIS to conduct a governance rating service. Any listed companies that receive a rating score at 7 or above out of 10 points are considered to have high levels of corporate governance. TRIS's assessments are based on four key areas: shareholders' right, the roles and responsibilities of the Board of Directors and senior management, transparency and disclosure, and corporate culture. On the SEC's part, a three-year incentive scheme will be provided to companies with a good rating and the SET will provide listing fee discounts to those companies. The project for the promoting of good corporate governance in the Thai capital market first mooted in 2002. There were 115 and 123 companies who joined the project, 40 and 60 listed companies have qualified for the award as companies with good quality of information disclosure in the annual registration statements and financial statements in years 2002 and 2003 respectively.

A study by the SET's Corporate Governance Centre in October 2003 showed that 90% of all listed companies had implemented the fifteen principles. However, companies with large market capitalisation were more successful in implementing the principles than smaller firms. Particularly, companies in the energy, mining, communications, and finance and securities sectors ranked most successful. Moreover, the SEC has been assigned to participate in an assessment project under "Corporate Governance - Report on the Observance of Standards and Codes" (CG-ROSCs) which conducted by the IMF and the World Bank. This can enable foreign investors to obtain more clear and accurate information on Thailand's good corporate governance, subsequently enhancing the image of the country as a whole.
The structures of companies in Thailand are similar to those in other East Asian countries, i.e. family members are the majority shareholders. Business expansions are usually done by having family members and existing companies hold shares in the new companies (as opposed to having the existing companies directly hold shares in the new relevant businesses). This practice results in cross and complicated shareholding structure of many companies or causes companies to have common major shareholders (First Decade of the Thai SEC and Capital Market in Thailand 1992-2002). These groups of companies usually have several intra-group transactions include the supply of goods, financial assistance, or management charges. Besides, some companies are only the production arms of their foreign parent companies which control all the policies and business operations of the local companies. However, even though they cause some damage in listed companies and there have been significant woes for investors’ confidence, the SEC considers that, in many cases, these connected transactions are actually done in the best interests of the listed companies and are part of normal business operations. Thus, they should be allowed providing that there are sufficient mechanisms to ensure that they are fair to the companies and to all the shareholders.

Furthermore, according to shareholders’ rights in takeovers, the competence and integrity of management and major shareholders are important factors in investment decisions. Also, the change of major shareholders has a strong impact on the company and the remaining shareholders. If investors do not believe in the new major shareholders, share prices may drop and all shareholders are affected. On the other hand, the possibility that a company can be taken over by a new group is a market mechanism that forces management to always perform well or for the highest value otherwise, they can be removed by the takeover by new shareholders. Thus, the SEA requires the SEC to oversee these transactions by providing two important tools as follows:

(1) The requirement for disclosure of every 5% change of shareholding of shareholders of a public company. Such disclosure will be a warning of control changes for investors.

(2) The power of the Board of the SEC to impose rules that a takeover party has to follow. The rules may include the requirement for the takeover party to make a tender offer for all the remaining shares as a fair exit for all shareholders.
The acquisition and disposal of assets

The SET has issued rules and procedures for the disclosure of information concerning the acquisition and disposal of assets. The purposes of these rules and procedures are as follows:

1. Provide individual investors with information necessary for making investment decisions as well as to allow them to participate in the major business decisions of a listed company.

2. Prescribe methods for a listed company to provide material information to the public which may affect the companies’ financial status, and so enable investors to properly evaluate the performance of the company.

3. Assure investors that the principles governing the listing of securities on the SET are being upheld.

The SET defines the following terms as follows:

“Acquisition” means agreeing to the purchase, transfer, or exchange of assets for payment.

“Disposition” means agreeing to the sale, transfer, or exchange of assets for payment.

“Assets” means tangible or intangible possessions such as land, property, equipment, or securities in other companies, including the rights of disposition, distribution, or transfer of assets.

Transaction classes
All listed companies must be prepared to comply with the specific disclosure requirements of the SET when they, or their subsidiary, have made a “decision to enter into a transaction” if such a transaction falls into any of the classes of transactions prescribed by the SET’s notifications.

A “decision to enter into a transaction” is defined as the entering into or proposing to enter into any contract, negotiations, agreement or understanding, regardless of whether direct or indirect, in order to cause an acquisition or disposition of assets and/or rights to acquire or dispose of assets.

Class 1 transactions are any transactions involving the acquisition or disposition of assets between a listed company, or any of its subsidiaries, and a non-listed company, the value of which, is equal to 50 percent or more but less than 100 percent of that company’s assets.

Class 2 transactions are any transactions involving the acquisition or disposition of assets between a listed company, or any of its subsidiaries, and a non-listed company, the value of which, is equal to 15 percent or more, but less than 50 percent of that company’s assets.

Class 3 transactions are any transactions involving the acquisition or disposition of assets between a listed company, or any of its subsidiaries, and a non-listed company, the value of which, is less than 15 percent together with any payment by the issuance of new shares.

Class 4 transactions are any backdoor listing transactions involving the acquisition of assets between a listed company and a non-listed company, the value of which is one hundred percent, or more, and results in the transfer of controlling power from the shareholders of the listed company to the shareholders of the non-listed company. The consolidation of businesses must also result in the shareholders of the listed company owning shares comprising less than fifty percent of the paid-up capital of the company.
A Class 4 transaction is generally known as a "backdoor listing". In this type of transaction, the company must seek approval from the SET for entering into the contemplated transaction and immediately file a new listing application with the SET. The SET will consider the company's listing application as if it were not a listed company.

The SET's base for transaction classifications are as follows. However, after calculations, the highest value shall be applied.

1. Value of the assets acquired or disposed of.
2. Net profits.
3. Total value of payments or receipts.
4. Value of securities that are issued by the listed company as payment.

Asset valuation

The evaluation of the assets acquired, or disposed of, by a listed company, or its subsidiaries, depends on the type of assets, as follows:

1. In the case where the assets acquired, or disposed of, are securities, the value of the securities is the book value of the net tangible assets of the company issuing such securities (total assets, liabilities, intangible assets), in proportion to the acquisition or disposition of the listed company's, or its subsidiaries', assets.

   In a case where listed securities are used as the means of evaluation, the market value of those listed securities, or the book value of the net tangible assets, whichever is higher, shall be applied.

2. In a case where the assets acquired, or disposed of, are assets other than securities, the value of such assets shall be evaluated by the total value of the considerations. In the case of a disposition where the total book value of such assets is higher, the book value method shall be applied.
For the purpose of evaluating the assets for calculating the volume of a transaction, the figures presented in a company’s financial statements, or the most recent consolidated financial statements, as examined by an auditor and adjusted to reflect transactions occurring after the date specified in the financial statements until the date of the transactions, shall be applied.

**Company procedures for each transaction**

<table>
<thead>
<tr>
<th>Procedures</th>
<th>Class 3 15%+ shares issuing</th>
<th>Class 2 15% ≤ X &lt; 50%</th>
<th>Class 1 50% ≤ X &lt; 100%</th>
<th>Class 4 X ≥ 100%</th>
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<tr>
<td>1. Report to the SET</td>
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<td>2. Give written notice to shareholders</td>
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<td>3. Get approval from shareholders</td>
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<td>4. Seek approval for new listing</td>
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1/ In case the volume calculation of the transaction on a net profit basis, and the transaction is above 50 percent but below 50 percent for other criteria, the SET may consider the transaction to be a Class 2 or 3 transaction, if the listed company can prove that it has been affected by special circumstances.

2/ Convene a shareholders' meeting to seek approval to enter into the transaction and a resolution approving the same, which shall be passed by a vote of not less than three quarters of the total number of votes of the shareholders. Appoint a financial advisor to participate in evaluating fair prices and to report these results to the company's independent directors, the SET, and shareholders.

Source: The SET

**Connected transactions**

According to the principles guiding listed companies, no transactions by listed companies lead to any conflicts of interest between the majority of shareholders, the management, and a listed company. The SET has ruled that all possible conflicts of interest must be eliminated before a company is listed and a company must maintain this requirement from then on. The characteristics of connected transactions can be categorised as follows:
1. When a listed company, or its subsidiaries, decides to enter into a transaction between:

1.1 Management, including directors, executive directors, managers, employees at the level of department manager or above.
1.2 Major shareholders.
1.3 Related persons.

2. When a listed company, or its subsidiaries, decides to enter into a transaction with another company in which the major shareholders:

2.1 Are, or are proposed to be, the management of the listed company or its subsidiary.
2.2 Are controlling shareholders of the listed company or its subsidiary.

Any connected transaction must be disclosed with related information. Approval of the decision to enter into a connected transaction must be passed by no less than three-fourths of the total number of votes of the shareholders, or proxies if any, who are present at the meeting and have the right to vote. Shareholders with a vested interest in the transaction are excluded from the vote.

2.3 TERMINOLOGY

A “Merger” is one form of corporate acquisitions. Fox and Fox (1976) define a merger as an agreement to combine two or more firms under procedures set by the state of incorporation of each of the event firms. These state regulations typically require a favourable vote of the shareholders in general meetings and all shareholders are bound if the required vote is obtained. An alternative form of corporate acquisitions is a tender offer. A tender offer is a cash or stock bid by one firm, called the bidder, for a block of another, called the target, firm’s outstanding common stocks. The target firm’s shareholders accept the offer by tendering their shares, and those not tendering retain their ownership claims to the target firm (Dodd & Ruback, 1977, pp. 351-352).
Following Penrose (1959), a merger is any method of combining existing firms and the larger firm is regarded as acquiring the smaller even if a new joint firm is established. In other words, "Acquisition" is used for any transaction occurring between willing parties, in which the buyer acquires all or part of the assets of the seller. "Takeover" is used when the management of the selling firm is an unwilling participant in the combination of the firms. Specific forms of acquisitions include asset or stock acquisitions and mergers. However, no distinction is made between mergers and acquisitions because the effects of the two are virtually indistinguishable (Singh, 1971). So, the terms "Merger", "Acquisition", and "Takeover" will be used interchangeably.

Jensen and Ruback (1983) suggest that takeovers can occur through merger, tender offer, or proxy contest, and sometimes all three elements are involved. In mergers or tender offers, the bidding firm offers to buy the common stocks of the target at a price in excess of the target's previous market value. Mergers are negotiated directly with the target's manager and approved by the target's board of directors before going to a vote of target shareholders for approval. Tender offers are offers to buy shares made directly to target firm's shareholders who decide individually whether to tender their shares for sale to the bidding firm. Proxy contests occur when an insurgent group, often led by a dissatisfied former manager or large stockholder, attempts to gain controlling seats on the board of directors.

According to the SEC, once a firm, called the acquirer, makes a decision to takeover another firm, called the target, by being the major shareholder, the acquirer needs to tender an offer to the target firm's shareholders. Thai security legislation defines a proportion from 25% of share holdings as being a strategic shareholder. The most important reason for this significantly determined proportion is that it enables the shareholders to vote and manipulate meeting resolutions for their own purpose. The public company legislation determines that the shareholder meeting must have no less than 25 shareholders or no less than 50% of total shareholders. There must be shareholder participants with their shareholding no less than 33.33% (one-third) of total outstanding shares. Moreover, the meeting resolution requires the majority vote and 75% (three-fourths) of total shareholder participants for a significant issue.
There are 2 types of tender offers:

**A Mandatory Offer** requires that once one holds the shares at the determined level (25, 50, 75% of total outstanding shares and these shares have not come from a tender offering), one needs to tender an offer for the total remaining outstanding shares.

When acquiring more than 5% of total outstanding shares of the target firm within the past 12 months results in one holding of shares between more than 25% and less than 50% of total outstanding shares, one is required to tender an offer for the total remaining outstanding shares.

**A Voluntary Offer** determines that when one tenders an offer and will be able to hold 25% of total outstanding shares. In this case, one must tender an offer to the target firm’s shareholders for no less than 10% of the total outstanding shares (unless at the time one already holds more than 90% of total outstanding shares and one just needs to tender an offer for the remaining shares).

"Event study" was first introduced by Fama, Fisher, Jensen, and Roll (1969). The event study methodology has been widely used in many disciplines: accounting, economics and finance, to examine security price behaviour around events such as accounting rule changes, merger and acquisition announcements, earnings announcements, changes in the severity of regulation and money supply announcements (Binder, 1998, p. 111).

"Target" and "Bidder", there are two parties, at least, for a corporation takeover. Basically, a firm makes a decision to takeover another firm. The first party is called a bidding firm or bidder, the other party is called a target firm or target.

"Consortium" is a group of bidders that is any type of the following bidders: a group of investors, a group of investors and a non-listed company, an individual and a non-listed company, or a group of investors and non-listed companies.
"Successful tender offer", various definitions of a successful tender offer are used by authors such as Bradley, Desai, and Kim (1983, p. 187), Brown and da Silva Rosa (1998, p. 25), Dodd and Ruback (1977, p. 352), Dumontier and Petitt (2002, p. 1 and 4), Goergen and Renneboog (2002, P. 6 and 14), Gugle, Mueller, Yurtoglu, and Zulehner (2002, p. 7) and Schwert (1996, p. 181). Generally, an offer is considered successful if the bidder acquires a substantial fraction of the number of shares initially sought (Dodd & Ruback, 1977, p. 357; Jensen & Ruback, 1983, p. 598). For Thai companies, effective control of a firm can be achieved with less than 100% ownership, and importantly, a bidding firm attempting a corporate takeover is the acceptance or the rejection of the offer of the target firm's shareholders. Also, it should be considered that the control of a company lies along a continuum from none for those who own no shares to complete for those who own 100% of the firm's voting shares. In addition, Dodd and Ruback (1977, p. 357) suggest that a successful tender offer is one when there is other information that indicates that the bidder has acquired control of the target via the tender offer. Therefore, in this study, a successful tender offer or successful target or bidder is defined as a tender offer where the bidding firm buys some of the target shares. Also, a target share holding of up to 25% is defined as a strategic shareholder and required to tender an offer to the target firm's shareholders. This is similar to Dodd and Ruback (1977, p. 352) and Bradley, Desai, and Kim (1988, pp. 5-6). On the contrary, if it did not follow the previously mentioned offer, it was classified as "Unsuccessful tender offer" or "Unsuccessful target or bidder".

"Repeated target or bidder" means any target or bidder that has been involved in takeovers by being a target or bidder more than one time, and it could be the same target and bidder or a different target but the same bidder or the same target but a different bidder in any of those tender offers.

"Competitive bidder" means in any bid where there is more than one bidder for the same target, and either bidder is called a competitive bidder.

"Delisted company" means that a company or its security was removed from the listing status. Consequently, the security will not be allowed to trade on the stock exchange. For the SET's listed companies, delisting may arise from the issuer's
voluntary application for delisting, which must be approved by shareholders with a vote of at least 75% of the issued shares and not more than 10% of the issued shares voting against. The SET may issue a delisting order if the company seriously violates the Listing Agreement, has a poor financial standing, or operates with a performance which may adversely affect investors. When a company has financial or operating difficulties, the SET, however, does not issue a delisting order immediately. The security will be placed in the potential delisting category and the investors are notified. The company must submit a rehabilitation plan at a shareholders' meeting for their approval before its disclosure to the SET. The company's security will be withdrawn from the delisting list if the rehabilitation is successful. If not, and the SET deems that it may cause serious damage to investors, the security will be delisted.

"Companies under Rehabilitation Sector" or "REHABCO" is a sector established by the SET in March 1998 to clearly separate listed companies requiring major restructuring due to substantial losses over time. Initially, 33 companies were under REHABCO. The transfer to the "REHABCO" sector allows companies to focus on restructuring and improving their financial standing. In brief, companies are presently listed in the "REHABCO" sector when 1) Shareholders' equity is less than zero. The SET bases its assessment on the auditor's report on the companies' financial statements. 2) The company fails to submit any of the required financial statements from a period for longer than 180 days.

As of 4/10/2004 there have been 40 firms listed under the rehabilitation sector. This means these companies have experienced financial difficulties, have failed to meet the minimum requirements for general listed companies, or have been under a restructuring procedure. Although the companies are not non-trading stocks, their approval depends on the SET's consideration. These companies are required to report their progress to the SET every six months and the SET will review the companies' status on the basis of progress and intention for problem solving.

The rehabilitation plan period is two years but the companies may submit a long-term plan by showing substantial measurable quantitative and qualitative objectives. However, to apply for a transfer from REHABCO to their former sectors, the
companies must demonstrate a profit from core business in three consecutive quarters or one year prior to the submission of application.

"Backdoor listing" can be explained as a situation where a listed company acquires a non-listed company's assets or shares and the value of the acquired assets, based on the criteria set by each Exchange, is larger than the acquirer's original assets, resulting in a change in the control of the listed company to major shareholders of the non-listed company. The acquisition then results in the acquirer becoming a listed company without going through the listing procedures.

"Insiders" are any persons who gain possession of "non-public material information" prior to its public release. Insiders, under the disclosure guidelines of the SET, include controlling shareholders, directors, officers and employees as well as outside attorneys, investment bankers, public relations advisors, advertising agencies, consultants, and other independent contractors. Also, insiders include relatives of following individuals such as husbands, wives, siblings, and persons controlled by the insiders as well as persons induced or acting as nominees for controlled persons and any persons who in any way have gained access to "non-public material information".

"Non-public material information", under the guidelines of the SET, means any material information which has not been publicly released, is intended for use solely for corporate purposes and is temporarily withheld by the company. Such information may impact on the price of the company's securities.

"Insider trading" is when directors, managers, operational personnel and corporate controllers of listed companies possess non-public material information and engage in any form of trading of securities in either the SET or OTC (Over-the-Counter) based on that information. Such trading is strictly prohibited and any benefit that has been derived from insider trading may have to be forfeited to the Office of the SEC. At the same time, any insider trader may be subject to criminal prosecution and/or to a fine.
All listed companies must require their directors, management and other insiders to report their holding and any purchase or sale of the company’s securities on a continual basis. This is to prevent insider trading and undermining investor confidence stemming from public suspicion regarding the propriety of any purchase or sale of securities by corporate insiders. Also, after the release of material information, an insider should refrain from trading until the general investing public has had sufficient time to evaluate the previously confidential information thoroughly. Where the information is uncomplicated, the required waiting period will be shorter than where the information is complex. The SET recommends that corporate insiders should abstain from trading for at least twenty-four hours following the adequately disseminated publication of the information to the general public. Where publication is less widespread, a minimum waiting period of forty-eight hours is recommended by the SET.

However, actions are required if insider trading occurs when material information is temporarily withheld. Immediate public disclosure of the information in question must be made if the company learns that insider trading has taken or is taking place. In unusual cases, measures sufficient to halt the insider trading and prevent its recurrence will be taken, however, exceptions might be made by discussion with the SET. Besides, the SET’s Listing Department will be able to provide current information regarding market activity with respect to a company’s securities to help assess the significance of such trading.

“Form 56-1” or Annual Information Disclosure Form 56-1 is a mandatory report annually submitted to the SET. It provides additional company information such as the history of companies, the nature of businesses, future plans, percentage of investment in subsidiaries, percentage of managerial equity ownership, and others such as connected transaction, supplemental information on business activities, and directors’ changes in number of shares holding.

“Form 247-2, 247-3, 247-4, 247-5, 247-6” or Tender Offer Reported Forms are mandatory reports submitted to the SEC. They provide information associated with a tender offer such as the names of takeover parties, financial advisor, filing date,
number of required target shares, offer price, tender offer period, tender offer condition, objective, sources of funds, nature of businesses and background information about target and bidding firms, relationship between target and bidding firms, number and proportion of target shares offered for selling, target share holding of bidders before and after a tender offer, advisor opinions, etc.

Although there are many forms, they are different in purpose. For example, Form 247-2 is used for a tender offer document, Form 247-3 is used for a statement of an intention for a tender offer, Form 247-4 is used for a tender offer that is finalised for the terms of the offer document, Form 247-5 is used for a statement of declining to tender an offer, and Form 247-6 is used for amendable and additional information for a tender offer. Thus, Form 247-4 is used for submission of an offer document and it is a primary source of data for this study.

"Form 256-1, 256-2" or Target Share Purchased Result Reported Forms are mandatory reports submitted to the SEC. They provide the number and proportion of target shares sought by bidding firms, the number and proportion of target shares offered by target firm's shareholders, the number and proportion of target shares purchased by bidding firms and the number and proportion of target shares held by bidding firms before and after a tender offer. Currently, Form 256-2 is used and it is a primary source of data for this study.

"SET Index"

A composite index is calculated on the basis of stock prices on the Main Board of the SET. It is a market capitalisation weighted index which compares the current market value of all listed common stocks with the value on a base date of April 30, 1975, when the SET Index was first calculated and set at 100 points. Its calculation is adjusted in line with new listings, delistings, and capitalisation changes. The basic formula is as follows:

\[
\text{SET Index} = (\text{CMV}/\text{BMV}) \times 100
\]

CMV is current market value of all common stocks
BMV is base market value of all common stocks

*Market capitalisation is calculated as follows:*

\[
\sum_{i=1}^{n} M_i Q_i
\]

Where:
- \( i \) is each issue of securities
- \( n \) is number of listed securities
- \( M_i \) is market price of each securities
- \( Q_i \) is number of listed shares of each security

The "NP" sign stands for NOTICE PENDING. The SET posts the NP sign on the stock to inform investors that at this particular time, the SET is awaiting clarification or additional information from the company which issued the stock or the SET is awaiting disclosure of the company's financial statements or other reports which must be filed at specified intervals.

The "SP" sign stands for SUSPENSION. The SET posts the SP sign to stop trading in a listed stock temporarily for one or more trading sessions for the following reasons:

- If a listed company does not comply with the SET's regulations on information disclosure, the "SP" sign will be replaced the "NP" sign.
- If a listed company's share price changes for unknown reasons and the firm fails to provide an adequate explanation.
- If a listed company fails to submit the required financial statements within five business days of the posting of the NP sign.
- If a listed company fails to submit the required financial statements promptly on two consecutive occasions and still does not do so on the third occasion, trading will be suspended in that stock.
• If a listed company is in a process of delisting or operation resumption and does not submit the required rehabilitation plan within the specified period of time.

Specifically, the SET posts the SP sign on a security to suspend trading of that security for more than one trading session, due to:

• Replacement of the SP sign for the NP sign following the failure of the issuer to adhere to the SET’s disclosure regulations,
• Failure of the issuer to provide adequate explanation in the event that its share prices change without legitimate reason, or
• The issuer's request for a trading suspension because of material news or activity in the process of implementation which may affect its share prices.

2.4 REGULATIONS

2.4.1 Rules and Guidelines Regarding the Takeovers of Listed Companies

The main procedures for listed companies in respect of takeover by another company are as follows:

1. A listed company is required to appoint an independent financial adviser to advise and recommend its shareholders whether to accept or reject a takeover offer based on fairness and reason. The financial adviser shall send all shareholders a written recommendation including the resolution of the Board of Directors regarding the acceptance or rejection of a takeover offer.

2. The listed company must get approval from three-fourths of the shareholders with voting rights for a decision to enter into a significant contract or agreement or the granting of financial assistance to any persons to purchase company securities.

13 Source: The SET and The SEC.
3. The listed company is required to submit to the SEC the takeover offer and amended information on any takeover offer.

2.4.1.1 Tender Offer Procedures on the SET\(^{14}\), are as follows:

1. Any person (offeror) who is required to tender an offer shall make a public announcement for a business takeover as follows:
   1.1 Announce or advertise widely through the press, electronic means, or any other telecommunication network.
   1.2 Notify the directors or managers of the business.
   1.3 Notify one or more shareholder(s) with combined voting rights 10 percent or more of the total voting rights of the business.
   1.4 Notify the SET.
   1.5 Notify the Office of the SEC.

2. The offeror submits a statement of an intention in Form 247-3 to the Office of the SEC within three business days from the public announcement date unless the offeror has already submitted an offer document in Form 247-4.

3. The offeror submits an offer document in Form 247-4 to the Office of the SEC within seven business days after submission the statement of intention in Form 247-3. If the offeror is unable to take any of the previously mentioned actions, the offeror shall instead submit a statement declining to tender an offer in Form 247-5 to the Office of the SEC. A copy of the documents in Form 247-3 or 247-5 shall be required for the SET. Consequently, the offeror shall be prohibited from making a tender offer for securities, or taking any other action which results in the requirement to tender an offer for all securities of that business, for the period of one year following the date on which the statement declining to make a tender offer has been submitted.

\(^{14}\) Partly Re: Rules, Conditions, and Procedures for the Acquisition of Securities for Business Takeovers (Notification of the SEC, No.GorJor.53/2545).
4. The offer document in Form 247-4 prepared by a financial adviser with a
tender offer acceptance form\footnote{There is no specific form for a tender offer acceptance. It is usually submitted together with the Form 247-4 (a tender offer form).} and the fees shall be submitted to the Office of the SEC. Then, the documents shall be delivered to all target firms' shareholders (offerees), the
target firm, and the SET. Also, the tender offer shall be advertised in newspapers.

5. The offeror shall commence the purchase of securities pursuant to the offer
document within three business days after submission of the offer document to the
Office. The offer period shall be between 25 and 45 business days. The offeror may
extend the offer period provided such offeror has neither previously stated that the
offeror would not extend the offer period nor announced a final offer period. However,
the offer period initially specified in the offer document combined with the extended
offer period shall not be more than 45 consecutive business days.

6. The offeror who wishes to extend the offer period shall take the following
actions:

6.1 Submit an announcement of the extension of the offer period in Form 247-6-
Gor\footnote{A type of tender offer reported forms used for amendable and additional information for a tender offer.} to the Office of the SEC prior to the closing date of the previous offer period.

6.2 Advertise such announcement in newspapers for a period of not less than one
business day following the date of submission of such announcement to the Office of
the SEC. It shall be clearly stated in the announcement whether or not such offer period
is final.

7. The offeror may amend the terms of the offer document in any of the
following events:

7.1 The offeror has not announced his final offer and there would be at least 15
consecutive business days remaining in the offer period after the announcement of
amendment to the offer terms, or

7.2 Where there is a competing offer for the same class of securities issued by the
same business. An amendment to the offer document shall be made in accordance with
the following provisions:
7.2.1 The offeror shall submit the announcement of the amendment to the offer terms within five business days from the date on which such other person has submitted his offer document to the Office of the SEC or before the end of the final offer period, whichever comes earlier.

7.2.2 The offeror shall submit the final offer terms no later than the last business day on which such other person may announce the final offer terms.

7.2.3 The offeror has clearly stated in the offer document and on each Form 247-6-G or the events which may lead to the exercise of rights to amend the offer terms pursuant to this clause.

8. The offeror shall allow the acceptors to cancel their tender of securities pursuant to the offer document at any time during the period specified in the offer document. The period shall not be less than 20 business days during the offer period. The offeror shall include a clear statement to that effect in the offer document.

9. The tender offer price may be specified in more than one alternative, however, at least one of those shall be specified in monetary form. The price for shares shall not be less than the highest price paid for shares acquired by the offeror during the period of 90 days prior to the date on which the offer document is submitted to the Office of the SEC.

10. The offeror may cancel the tender offer pursuant to any of the following events. However, the cancellation may only be made if the offeror has clearly stated such events in the offer document.

10.1 An occurrence of any event or action after submission of the offer document to the Office of the SEC, but during the offer period, causes or may cause serious damage to the status or assets of the offeree business. However, such events or actions do not result from the acts of the offeror or any act for which the offeror is responsible, or

10.2 The taking of any action by the offeree business after the offer document has been submitted to the Office of the SEC, but during the offer period which results in a significant decrease in the share value.
11. As for a voluntary tender offer, it may be cancelled if the number of shares tendered by offerees is less than that of shares specified as a condition for the offer. However, the offeror must clearly state the mentioned conditions and the cancellation events in the offer document.

12. The offeror shall report the result of the tender offer to the Office of the SEC in Form 256-2 with a copy to the SET within five business days from the closing date of the offer period.

13. After the tender offer, the offeror whose share holding in the business reaches or exceeds any trigger point as previously mentioned, shall be prohibited, for the period of six months from the closing date of the offer period, from purchasing or taking any other action which results in his acquisition of or his becoming holder of securities of such business at a price which is higher than that specified in the offer document, unless it is an acquisition of newly issued securities.

Also, the offeror shall be prohibited, for a period of one year from the closing date of the offer period, from taking any actions which are significantly different from those specified in the offer document. However, there is an exemption for the case where a shareholders’ meeting adopts a resolution with a vote of not less than three-fourths of total shareholders’ votes present at the meeting and the Office of the SEC has been notified.

2.4.1.2 Information Disclosure

As earlier mentioned, one of the most important functions of the SET is to ensure secure, liquid, fair and orderly securities trading on the Exchange. Also, guaranteeing equal and timely access to price sensitive information for all investors is also a crucial role. Thus, the SET requires listed companies to disclose information with accuracy, sufficiency, and timeliness.
According to the SET's guidelines, information regarding the operations of a listed company, activities of the firm, and the conditions of its securities trading must be promptly disclosed, if such information meets any of the following standards:

1. Where the information is likely to have a significant impact on the market price of the firm's securities.

2. Where the information is likely to be important for investors' investment decisions.

3. Where the information is likely to affect the interests of the firm's shareholders.

It is the responsibility of the listed company to determine which information is material and shall be promptly disclosed according to the above-mentioned standards. Certain types of information, for example, an acquisition or disposal of assets, a capital increase, etc., are required to be disclosed in accordance with minimum standards specified by the SET.

2.4.1.3 The Public Disclosure of Material Information

The following methods shall be used to disclose material information through the SET:

1. Electronic Company Information Disclosure System (ELCID). The same information must also be sent via facsimile.

2. Submission of an original written report (in some cases).

3. Any other systems specified by the SET.
After receiving the information, the SET's Listing Department will promptly release it to the general investing public through the SET information systems (SIMS).

In all circumstances, the information must be submitted at least one hour prior to the start of trading session (there are two trading sessions: 10.00 a.m.-12.30 p.m. and 2.30 p.m.-5.00 p.m.) or after the close of the day's trading. If this is not possible, the listed company must submit the information to the SET at least one hour prior to the start of trading in the following day. The disclosure of the material information that listed companies are required to provide to the SET can be classified into two categories as follows:

**Periodic reports**

A listed company is required to prepare and submit certain material information within a specific period under the Securities and Exchange Act (1992), Section 56, as follows:

<table>
<thead>
<tr>
<th>Filing period after the accounting period ends</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Audited annual financial statements\textsuperscript{17}</td>
</tr>
<tr>
<td>2) Reviewed quarterly financial statements</td>
</tr>
<tr>
<td>3) Annual report</td>
</tr>
<tr>
<td>4) Disclosure report on additional information (Form 56-1)</td>
</tr>
</tbody>
</table>

What action will the SET take if a listed company is unable to file a financial statement within the specified period?

\textsuperscript{17} A listed company may elect to file a financial statement for every accounting period of six months or one year instead of filing the 2\textsuperscript{nd} or 4\textsuperscript{th} quarterly financial statements, if the listed company can file the mentioned financial statement within 60 days from the end of such accounting period.
1. A “NP” (Notice Pending) sign will be posted on the company’s securities from the expiration date until the firm submits a complete and accurate financial statement to the SET. However, the NP sign will only be posted for a maximum of five business days.

2. If a listed company fails to submit a financial statement within this five-day period, on the sixth business day after the expiration date, the firm will have a “SP” (Suspension) sign posted on its securities until the SET receives the company’s financial statement.

3. In cases where a listed company fails to submit its financial statement three consecutive times, the SET will post a “SP” sign against its securities on the first business day of the third delay.

4. If a listed company fails to submit any of the required financial statements from a period for longer than 180 days, the SET will announce the possible delisting of that company’s securities and will transfer its securities to the REHABCO sector until it has submitted the required financial statements. And, if the listed company involved delays the submission of the required financial statements for more than 180 days from the date the SET announced its possible delisting, the SET will delist its listed securities.

However, a listed company can eliminate the causes of possible delisting by submitting the required financial statements within 180 days of the date the SET announced its possible delisting. Also, it must submit a written letter to the SET requesting that the SET re-consider the company’s listing status, after the required financial statements are submitted within the specified period on two consecutive occasions and the auditor’s report does not qualify or reserve his opinion.

Non-periodic reports

The immediate public disclosure of material information
A listed company must disclose all necessary and relevant information concerning its affairs that may affect the rights of shareholders and their investment decisions or that may lead to a significant change in the price of its securities. A written notice must be submitted on the date on which any such incidents occur, at least one hour before each securities trading session or at the end of the day’s trading at the SET. Some examples of incidents requiring immediate disclosure are:

1. A listed company or its parent experiences any change of major shareholders that affects control over the listed company.

2. A listed company is granted or loses a significant commercial contract.

3. A listed company or its subsidiary is engaged in a transaction involving the acquisition or disposition of assets under the terms of the relevant SET notification.

4. A listed company or its subsidiary is engaged in a connected transaction under the terms of the relevant SET notification.

5. A listed company or its subsidiary acquires or disposes of an investment in another company which makes the other company become or cease to be a subsidiary of the listed company or a subsidiary of the subsidiary of the listed company.

6. Something occurs that impacts or may impact on the interests of securities holders, their investment decisions, or the price of the securities of a listed company.

2.4.1.4 Guidelines on the Disclosure of Information on Listed Companies in Respect of Takeover by another Company

The listed company, which can assume from facts that it is going to be acquired by another company, must perform as follows:
1. Any parties concerned with a takeover offer such as an offeror company, major shareholders of a listed company shall do everything possible to maintain secrecy until the resolution has been approved. Then it shall be reported to the SET so that it can be disclosed to the public. In addition, a representative of the shareholders, a financial advisor, anyone concerned must be responsible for continuing to perform their functions and keep the information secret.

2. If the information is disclosed before a takeover offer can be concluded, listed companies shall disclose the following information immediately:

2.1 If the information concerning a takeover is disclosed while they are in the process of negotiation, the listed companies shall disclose:

   2.1.1 Current process.

   2.1.2 Time period which a takeover offer can be concluded initially.

   2.1.3 Name of the offeror’s financial advisor or shareholders’ financial advisor (if any).

2.2 If the information concerning the takeover is disclosed after the memorandum of understanding or any other contract or agreement is signed, the listed companies shall disclose:

   2.2.1 List of sellers and the amount of shares to be sold.

   2.2.2 Name and other initial information of an offeror including:

       2.2.2.1 In the case of individuals, all the names, addresses, and present careers shall be identified.

       2.2.2.2 In the case of a corporation, the name, address, historical data, kind of businesses, Board of Director details, and major shareholders of an offeror shall be identified.

       2.2.2.3 The relationship between offerors if there is more than one offeror.

   2.2.3 Number of shares required by an offeror.

   2.2.4 Acceptable price and/or desired price to purchase securities with conditions (if any).

   2.2.5 Process, the time period for each step is taken in the takeover offer and the present step which is being taken.

   2.2.6 Names of the financial advisor of the offeror, offeree, and general shareholders.
2.2.7 Material information of the memorandum of understanding or any contract or agreement identifying:

2.2.7.1 Conditions of the negotiations, pricing, and price adjustment concerning the takeover offer.

2.2.7.2 Conditions under which a memorandum of understanding may be cancelled.

2.2.7.3 Conditions of any contract which is an important factor for decision-making.

2.2.8 Any issues and material conditions requiring approval such as approval from a relevant governmental agency, approval from the shareholders’ meeting of an offeror.

2.2.9 Any other information that is deemed necessary for making an investment decision.

2.4.2 Mergers of Listed Companies

2.4.2.1 Listed Company Mergers with another Listed Company

1. Any new company resulting from such a merger shall retain listing status because the firms that merged together have already passed through the listing procedure. However, the SET’s Board may prescribe other conditions to ensure the new company has the full qualifications of a listed company and meets the criteria for maintaining listing status.

2. Where one or both of the listed companies in the process of merging, may face delisting under the Regulations of the SET (Re: Rules, Conditions, and Procedures Governing the Listing and Delisting of Securities), the new firm resulting from the merger shall be deemed to still face possible delisting unless the SET’s Board considers otherwise.

2.4.2.2 Listed Company Mergers with a Non-listed Company
The new company resulting from such a merger is required to file an application with the SET for the listing of its securities. The SET will consider its qualifications under its regulations regarding the Regulations of the SET (Re: Rules, Conditions, and Procedures Governing the Listing and Delisting of Securities). However, the SET may not consider the following when assessing the qualifications of this new company:

- Market capitalisation for ordinary shares.
- Basis to determine the market capitalisation for ordinary shares.
- Distribution of shares to small shareholders.
- Profit from operations after tax, if the SET’s Board considers that the merger will improve the listed company’s operations.

2.4.3 Delisting Rules

According to the SET’s regulations, a company’s securities can be delisted in either of two ways: voluntary delisting or mandatory delisting.

2.4.3.1 Voluntary Delisting

The shares of a listed company can be delisted from the SET at the company’s request. In this case, the SET will treat the voluntary delisting as a co-operative decision made by that company’s shareholders.

Procedures for voluntary delisting are as follows:

1. A listed company which wishes to delist its shares must proceed as follows:

   1.1 Appoint a financial advisor, with the approval of the independent directors, to advise and to recommend that general shareholders consider the delisting of the listed company’s shares.

   1.2 Notify the SET about the resolutions of the company’s Board of directors concerning the delisting of its shares within the date that the Board adopts such a resolution, or at least one hour before the first session of the securities trading session of the following business day.
1.3 At least seven days before the date of the shareholders’ meeting, a presentation shall be held to make recommendations concerning the delisting of the shares and the offer proposed by the offeror. The financial advisor of the offeror may attend the meeting to give explanations.

1.4 A shareholders’ meeting shall be held to seek a resolution for the delisting of the shares. A listed company must send out a notice of the meeting, together with a written explanation, not less than fourteen days prior to the date of the meeting.

2. Any resolution on the delisting of the shares of a listed company must be voted by the shareholders or proxies of not less than three-fourths of the total issued shares of the listed company. However, shares held by the shareholders of the listed company who object to the delisting shall not be more than ten percent of the total issued shares of the listed company.

3. The SET’s Board will consider the application and notify the listed company of its decision within thirty days after receiving the completed documents from the listed company.

4. A listed company shall set the offer period to purchase shares and other securities convertible into shares of the listed company.

5. The SET’s Board will designate the date the delisting of shares of a listed company should take effect and a company’s shares be terminated from the listed security status.

2.4.3.2 Mandatory Delisting

1. The SET considers that the delisting of a listed company has an impact on small shareholders. It causes shortage of trading liquidity and deprives shareholders of appropriate information necessary for keeping track of a company’s operation. Therefore, the SET prefers to reinforce and support the company to expedite the rehabilitation plans and to enable quick solution to the financial and operational
problems rather than delisted readily. The SET also requires the rehabilitated companies to disclose their rehabilitation guidelines to help the shareholders keep abreast of progress until they are able to avoid being delisted.

2. The SET requires a listed company's management and its independent advisors to jointly prepare a rehabilitation plan and proposed to the shareholders for approval. Also, the company's management and its advisors are expected to present regular reports on how the rehabilitation plan is progressing. This process must continue until all the problems that caused the possible delisting have been resolved.

However, in a case where a company under the REHABCO sector fails to satisfy the SET, with either significant progress in debt restructuring leading to solving company's problems or rehabilitated capability of quickly turning the company to a strong financial and operational position, the SET may propose to the Board for the company to be delisted.

2.4.4 Guidelines on Announcing Names of Listed Companies that are Subject to Preparing a Rehabilitation Plan

1. The criteria for considering a possible delisting are as follows:

1.1 Shareholders' equity in a listed company, as shown in its audited financial statements, is less than zero.

1.2 Shareholders' equity in a listed company, as shown in its audited financial statements, is more than zero, but the auditors report a qualified opinion, a disclaimer of opinion, or an adverse opinion. If so, the company's financial statements must be adjusted in accordance with the auditors' opinion. If the adjustment causes its shareholders' equity to decrease to less than zero, the SET will announce that the company may be subject to having to prepare a rehabilitation plan.

2. Once a listed company is included under the criteria for necessarily preparing a rehabilitation plan, the SET will publicly announce that the listed company has been

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18 Companies to be under rehabilitation or known as "REHABCO".

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subjected to preparing a rehabilitation plan and improve the company qualifications for
being a listed company. Also, the SET will post an “SP” (Suspension) sign to prohibit
trading and transfer the company to a sector called “Companies under Rehabilitation” or
REHABCO. The company’s securities will retain an “SP” sign for a further 30-day
period from the date of the SET’s announcement. This gives the company’s
management time to make prudent decisions that benefit all parties concerned. The
listed company must inform the SET that:

2.1 It has decided to prepare a rehabilitation plan to propose to the company’s
shareholders, or that it would like to ask for a voluntary delisting, or that it would like to
attempt rehabilitation under the Bankruptcy Act, or that it wants to try another option
which will benefit all involved in the listed company.

2.2 It has determined a time schedule to implement one of the above decisions.
The SET will publicly disclose the management’s decision to the shareholders and
general investors.

3. When the 30-day period is over and the management has clearly informed the
SET of its decision and reported the company’s progress on rehabilitation, the SET will
lift the “SP” sign and allow trading of these securities under the REHABCO sector. If
the management chooses to prepare a rehabilitation plan, the SET will allow the
securities to be traded for a 30-day period. Then, they will be posted an “SP” sign again
until the company has made progress in resolving the problem and disclose information
completely. On the other hand, if the management does not inform the SET of its
decision as of the end of 30-day period, the SET will still post an “SP” sign on the
company securities until it publicly informs the SET and general investors of its
decision.

4. The rehabilitation plan period’s length is two years, however, if a listed
cOMPANY needs more than two years to rehabilitate, it may submit a long-term plan by
clearly showing measurable quantitative and qualitative objectives.

5. If a listed company that is already subject to preparing a rehabilitation plan
would like to petition under the Bankruptcy Act, it could proceed as follows:
5.1 Appoint a so-called planner, as agreed to in court, to be the person responsible for preparing the required rehabilitation plan and for acting as the company’s financial advisor.

5.2 Implement the rehabilitation plan approved by its creditors and the court, in place of the plan approved by the company’s shareholders.

5.3 Continue to disclose all the material and information required under the SET’s rules and regulations. Those responsible for the implementation of the rehabilitation plan must report to the SET every three months on the company’s progress and actual operations compared with the rehabilitation plan. In addition, the SET will revise the listed company’s qualifications and status once a company has been under rehabilitation for two years.

6. The listed company must submit the rehabilitation plan to the SET and all shareholders before the meeting. Also, the opinions of an independent financial advisor and independent directors concerning the rehabilitation of the company will be submitted for consideration and approval of the plan.

7. The SET will suspend trading of securities of any companies in the REHABCO sector with recessive operating results that cause shareholders’ equity to be minus or to become more negative in the audited annual financial statements.

8. The SET will review the company’s status on the basis of progress and intention for problem solving. These companies under the REHABCO sector are required to report their progress of problems solving to the SET every six months. However, the SET may tender a proposal to the Board for delisting in case of any company falling under one of the following categories.

8.1 The company no longer own core assets necessary for continuing its business or if it fails to demonstrate its position as a going concern in its core business, or

8.2 The debt restructuring plan fails to incorporate small shareholders’ rights or reduces the wealth of the existing shareholders to zero, or

8.3 The management or the company’s creditors are not serious about debt restructuring to enable resumption of businesses, or
8.4 The company fails to clearly achieve reasonable progress in debt restructuring or has an enormous burden of debt and obligations after debt restructuring hindering its business.

Nevertheless, the SET will propose to the Board to de-list any company that has negative equity or that fails to achieve a net profit from its core business within a period of three years from the effective date of this guideline.

9. Any listed company that resolves its financial and operational problems completely may apply for a transfer from REHABCO to its former sector. The SET will consider the listed company’s status from the quarterly financial statements reviewed by the auditors or the audited annual financial with the following criteria:

9.1 A company must show a positive shareholders’ equity (after the adjustments in accordance with the auditor’s opinion).

9.2 A net profit from core business in three consecutive quarters or one year prior to the submission of application.

9.3 Successful restructuring of over 75 percent of the company’s total debt and its ability to settle debt with creditors in a timely manner during the period specified in 9.2 above.

9.4 Cash flow from operating activities after having booked interest expense > 0.

9.5 Ability to demonstrate the company’s strong financial position and performance on continuous basis.

2.4.5 Rules, Conditions, and Procedures for Tender Offer for Delisting of Securities, are as follows:

1. The offeror shall specify at least one alternative of the tender offer price in monetary form.

2. The tender offer price shall not be less than the maximum price calculated in accordance with the following procedures:
2.1 The highest price paid for the securities which have been acquired by the offeror during the period of 90 days prior to the date on which the offer document is submitted to the Office of the SEC.

2.2 The weighted average market price of the shares during the period of five business days prior to the date on which the Board of directors of the business resolves to propose for consideration by the shareholders' meeting the delisting of shares, or the date on which the shareholders' meeting resolves to delist the shares from the SET, whichever comes earlier.

2.3 The net asset value of the business calculated based on the book value which has been adjusted to reflect the latest market value of the assets and liabilities of the business.

2.4 The fair value of the securities of the business which appraised by a financial advisor.

3. The offeror who wishes to reduce the tender offer price because an occurrence of any event or action after submission the offer document to the Office of the SEC, but during the offer period, causes or may cause serious damage to the status or assets of the offeree business. However, such events or actions do not result from the acts of the offeror or any act for which the offeror is responsible. A reduction of the tender offer price can only be made upon the receipt of an approval from the Takeover Panel. Also, the offeror financial advisor's opinion on the new render offer price shall be submitted to the Takeover Panel for further consideration.

4. The offeror may cancel his tender offer in any of the following events:

4.1 An occurrence of any event or action after submission the offer document to the Office of the SEC, but during the offer period, causes or may cause serious damage to the status or assets of the offeree business. However, such events or actions do not result from the acts of the offeror or any act for which the offeror is responsible. A cancellation of the tender offer may only be made if the offeror has clearly stated such event in the offer document.

4.2 An occurrence of any other event resulting in the cessation of the delisting of the shares from the SET.
5. The offeror may make another tender offer within one year following the closing date of the offer period specified in the previous tender offer. Such subsequent tender offer is made in compliance with the SET’s regulations regarding the delisting of securities from the SET. However, it is only for the offeror who has clearly stated his intention to delist the shares from the SET in the offer document of the previous tender offer.
CHAPTER 3
METHODOLOGY

In the undertaking of research in the social sciences there are basically two main types of data: primary data and secondary data. In circumstances where original primary data has to be gathered, executive surveys and field interviews are generally considered to be practical ways of gathering the data. If secondary data is to be used, there are multiple sources of data, but in studies of merger activities: two main types of secondary data are frequently used: stock price data and accounting data. Although, accounting data is the second most popular data source for research applications of the scientific method as applied to merger activity. It has a few inherent weaknesses (Bruner, 2002, p. 50). For example, reporting principles and regulations change over time and firms may change their reporting practices. These changes result in possibly non-comparable data sets for different years. Some other possible problems also lead to potential disadvantages. For example, the reported financial statements are backward-looking, the value of intangible assets is ignored and values are sensitive to inflation and deflation because they involve a historical cost approach. Differences in accounting policies amongst firms can add noise, and differences in accounting principles from one country to another one mean it can be difficult to compare effectively across-borders.

The early studies generally adopt a framework based on neo-classical theory. Analysis is undertaken using accounting data to determine whether takeovers perform as a disciplinary mechanism on inefficient management or firms (Newboald, 1970; Singh, 1971). However, the problems with the use of accounting data are coincident with the development of new methodologies and data sets. Thus, researchers changed their focus to an examination of returns to the event firms’ shareholders through the use of event studies (Baker & Limmack, 2001, p. 30).

3.1 DATA
For this thesis, stock price data rather than accounting data is used for the takeover performance measurement partly due to the previously mentioned difficulties. There are four significant sources of data for this study set out as follows:

1. The list of delisted companies including their approval and effective dates. The list of companies traded under the rehabilitation sector or “REHABCO” including their effective dates, original trading sectors, and the effective allowable dates permitting them to be traded in their original sectors. The list of total companies listed on the SET at any point of time during the period 1991-2003. The list of listed companies that have their names changed. All these previously mentioned data sets were collected from the SET. Also, the SET’s rules and guidelines regarding takeovers and delisting were obtained from the SET. In addition, supplementary information about listed companies was found in Form 56-1 from the SET.

2. Data on the Thai takeover activities involved both Thai target and bidding firms: all tender-offer statistics between August 1992 and October 2002 were obtained from the SEC. This period of tender-offers was selected to be the sample time-frame for this study because it provides a ten-year period of time for all takeover activities occurring on the SET up to the point when this thesis commenced. The data source gave the names of the firms involved in the takeovers, the submission of tender offer date (or the proposal filing date at the SEC), the tender offer period of time, the number of target shares sought by bidding firms, the number of target shares purchased by bidding firms, the percentage of target shares held by bidding firms after tender offers, the tender offer price per share, and the value of the transaction. There are total 151 tender offers that occurred during the previously mentioned period of time. However, only those tender offers in which either the target or the bidding firms (or both) were listed on the SET at the time of the takeovers and that met the sample criteria were included in the study. In addition, other information such as the rules, conditions, and procedures to be followed in tender offers were gathered from the SEC. Any other additional information associated with tender offers, offerors (bidding firms), and tender offerees (target firms) was gained from tender offer report forms (Form 247-2, 247-3, 247-4, 247-5 and 247-6) and target share purchase result report forms (Form 256-1 and 256-2).
3. Datastream was another main source of data for this study. The Datastream set of databases could be accessed in real time via a live internet link to the host database in London. This database covers stock markets for most countries including the Thai stock market. The Datastream database provided information on stock prices, market values (MV) or market capitalisations, and book values (BV) or net tangible assets (NTA) of the sample firms.

Monthly stock price data over more than a five-year period of time varying by the event dates of the event firms, either target or bidding firms or both, was directly retrieved from the Datastream database. Specifically, stock price data in the period of (-48,+16) in terms of each event date (month) which effectively is between 1988 and 2003 was extracted from the Datastream. The time series of stock prices have been already adjusted for dividend, split and right effects by the Datastream. Subsequently, those stock prices were used for calculations of the monthly stock returns according to the examination periods.

Also, market values, calculated from stock prices and the outstanding number of shares, from years 1993 to 2002 were collected from the Datastream database. For book values, net tangible assets (NTA)\(^{19}\) were used, for the years 1992 to 2001 and were also obtained from the Datastream database. In fact, the study needed the book values of firms from the years 1989 to 2001 but neither the Datastream database nor the SET could provide the data before the year 1992. This resulted in the dropping of sub-groups of reference portfolios that required the book values of firms before the year 1992 (in other words, it meant that sub-groups of reference portfolios that requires the market values before the year 1993, even when available, were dropped because of the lacking of their book values before the year 1992) (see the details in the following section-Construction of reference portfolios). However, most of the book values for firms from the years 1992 to 2001 were retrieved from the Datastream database whilst the missing data was filled in by data taken from the Brooker Group Public Co., Limited.

\(^{19}\) According to the Datastream’s definition, net tangible assets (also referred to as the net book value) are defined as total assets, excluding intangible assets less total liabilities, minority interests and preference stock. However, for the Thai stock market which follows the reduced formats or as sourced from Worldscope, total intangible assets are not deducted. The value is calculated using Datastream’s company account items 305 (ordinary shareholder’s equity and intangible assets) and 344 (total intangible assets) in the following expression: NTA=305-344.
In addition, to make sure that the book-to-market (BTMV) ratios obtained from the Datastream were accurate, the NTA that were provided by the Datastream were checked to see whether or not they are in accordance with the determined criteria of this study (see details in the next section—Methodology). I double-checked each NTA collected from reported financial statements from the Datastream database that has a financial year different from the norm (January-December). Then, the BTMV ratios were computed. This resulted in more accurate and consistency in the BTMV ratios used for this study.

4. The Brooker Group Public Co., Limited was another source of data. It is a customer-focused, research, and consulting company based in Bangkok, Thailand. However, it was only a minor source of data for this study. I used the book values provided by the Brooker Group to cross-check those obtained from the Datastream to make sure of the data quality in the sense of accordance of definitions for Thai companies, data accuracy, and to fill in the missing firms' book values.

The limitations of data

It is noted that neither the Datastream database nor the SET can provide all of the required book values for sample firms. This reduced a segment of the sub-groups of reference portfolios for their use in a matched reference portfolio control method for the bid and post-bid period investigations. According to the statistics, there are some tender offers in which the tender offerors were non-listed companies which resulted in the non-availability of stock prices for bidder takeover performance examination. Also, some are tender offers in which the bidders are a consortia that consists of a variety of bidders. This limited the study to an investigation of the bidder's entire stock reaction to takeover announcements in cases where the bidder was listed due to the intractable nature of the results for all bidders. In many cases bidders were non-listed and no stock prices were available, or only some members of the consortia were listed. Moreover, there have been fewer cases of corporate takeovers on the SET compared

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20 Even though the previously mentioned limitations of the investigation of the bidder's entire stock reaction to takeover announcements, clearly there are no findings that are different or controversial when compared to those of past studies. In other words, it is suggested that the reported results in Chapters 5 and 6 are consistent with previous studies reporting that on average, the takeovers result in positive and negative abnormal returns for bidding firm's shareholders.
with experience on developed stock markets such as the U.S., U.K or other Asian country stock markets such as Japan, Hong Kong, Singapore, or Malaysia. The smaller size of the sample serves both to reduce the interest of the study, and to restrict methodological applications. For example, there will be too small a number of firms in each sub-group of reference portfolios if this study applies three control factors for the matched reference portfolio method. Furthermore, this possibly reduces the credibility or accuracy of outcomes of the study. Except for stock price data, the Datastream database cannot provide other data or information for Thai dead stocks or delisted companies. This limitation also influenced the study in terms of the data completion. In addition, there are other restrictions: different sources of data use different codes or symbols for even the same stocks, company names and code changes during the time of the study, and mixed up common stocks with non-common stocks, these issues caused data collection problems and affected the study in terms of being unnecessarily time-consuming, and led to problems with data completion and quality.

In conclusion, the overall data used in this study consists of several types of data and information types. They include tender offer statistics, stock price data, market values or market capitalisations, book values, and other associated information relating to the event firms. All the previously mentioned data and information types were obtained from four primary sources of data: the SET, the SEC, the Datastream database, and the Brooker Group Public Co., Ltd. Finally, this data selection approach yielded an exhaustive sample of takeovers in which either target or bidder, and a sub-sample of takeovers in which both target and bidder, were listed firms on the SET.

3.2 RESEARCH METHODOLOGY

Bruner (2002) suggests that there are four approaches to the measurement of merger and acquisition performance that are as follows:

Event study: This examines the abnormal returns\(^{21}\) to shareholders in the period surrounding the announcement of an event. The event study is forward-looking on the

\(^{21}\) The abnormal return is the difference between the observed return and the predicted return (Brown & Warner, 1980; Campbell, Lo, & MacKinlay, 1997); or is the difference between the return conditional on the event and the expected return unconditional on the event (Kothari & Warner, 2004, p. 10).
assumption that stock prices are the present value of expected future cash flows to shareholders.

Accounting study: This estimates the reported financial results of bidding firms before and after acquisitions in order to see financial performance changes.

A survey of executives: This presents a sample of executives with a standardised questionnaire, and aggregates across the results in order to yield generalisations from the sample.

Clinical study: This focuses on a small sample and derives insights from field interviews with executives and knowledgeable observers.

According to the above descriptions, despite the fact that event and accounting based studies are regarded as involving scientific method as applied to social events, Bruner (2002) states that there is no fault-free research approach to these issues. However, Caves (1989, p. 151) indicates that the event study technique is genuine innovation-theoretical, well grounded, cheap to execute, and able to avoid the problem of holding constant other factors that plague ex post study of the effects of mergers. A further advantage is that the event study method can be used to examine return performance for sample firms that experience events which occur at different points in time or are clustered at a particular date. Also, the event study serves a purpose in capital market research as a principle means of market efficiency testing (Kothari & Warner, 2004, p. 4). The magnitude of abnormal returns at an event time provides a measure of the impact of the event on the wealth of the firm's shareholders. In addition, the event study\textsuperscript{22} first used in Fama, Fisher, Jensen, and Roll (1969) has subsequently dominated work in empirical financial economics since the 1970s (Kothari & Warner, 2004, p. 8).

\textsuperscript{22} Brown and Warner (1980 and 1985) present a detailed discussion of this technique and various methodological issues that concern their uses and interpretations.
Similarly, Datta, Pinches, and Narayanan (1992, p. 73) suggest that, typically, value creation in mergers and acquisitions has been estimated by means of event studies. The event study methodology has become the standard method of measuring stock price reaction to a corporate announcement. Most of the empirical evidence in corporate finance is gathered from event studies (Akbulut & Matsusaka, 2003, p. 3; Fama, 1991, p. 1600). The number of published event studies exceeds 500 and continues to grow (Kothari & Warner, 2004, p. 5). In practice, the event study method has been used for two major reasons: 1) to test the null hypothesis that the market efficiently incorporates information (see Fama, 1991, for a summary of this evidence; Kothari & Warner, 1997; Fama, 1998, for a recent summary of long-term tests), and 2) under the maintained hypothesis of market efficiency, at least with respect to publicly available information, to examine the impact of corporate events on the wealth of the firm’s shareholders (Binder, 1998, pp. 111-112).

Although the event study has been used for over 30 years, the main focus is still on measuring the sample firms’ average abnormal returns and cumulative average abnormal returns around the announcements. This can be explained by past study evidence, for example, Fama (1991, p. 1602) states that short-term tests represent the “cleanest evidence we have on efficiency”; Kothari and Warner (2004) suggest that short-term methods are comparatively straightforward and trouble-free thus, the results can be more certain than those from long-term methods; Brown and Warner (1985) conclude that simple risk-adjustment approaches to conducting short-term event studies are effective in investigating abnormal performance; Cross-correlation in abnormal returns is irrelevant in short-term event studies when the event is not clustered in calendar time (Brav, 2000; Jegadeesh & Karceski, 2004; Mitchell & Stafford, 2000). However, the methods used to estimate abnormal returns and to standardise their statistical significance have become more sophisticated. This change has improved long-term measurement methods but the serious problems, such as the difficulties associated with long-term results and will be discussed later, still have been unresolved. This also indicates that Brown and Warner’s (1980) warnings about being careful in inference using the results from long-term tests are definitely confirmed by recent developments in work by Kothari and Warner (1997) and Lyon, Barber, and Tsai (1999), including Kothari and Warner’s (2004) suggestion long-term tests having a high susceptibility to error. Thus, Kothari and Warner (2004) conclude that in long-term
tests, appropriate adjustment for risk is critical in calculating the abnormal return which
is in sharp contrast to short-term tests in which risk adjustment is straightforward and
typically unimportant.

As previously reviewed, most studies focus on returns in a short window (a few
days, or months) around a cleanly dated event. However, there have been an increased
number of recent studies that concentrate more on long-term post-event performance
examination. In addition to the earlier discussion in chapter 1, there is further support in
recent studies. For example, Fama (1998) notes that there is a developing literature that
argues that stock prices adjust slowly to information and thus, one must examine returns
over the long-term to obtain a full view of market inefficiency. Loughran and Vijh
(1997) argue that the effect of restructuring decisions related to the appointment of new
managers, combining operations of both companies, and pursuing new investment
opportunities should take a few years. This is similar to positions taken by Brown and
da Silva Rosa (1998), Hou, Olsson, and Robinson (2000) and Rosen (2003), particularly
in the latter study that argues that examining a three-year horizon is necessary to include
enough time to allow the results of the mergers to become known. These issues are also

For short-term event studies, Armitage (1995, p. 34) suggests that choice of the
surrounding event period very much depends on what is being studied. Two-day event
windows are common if the event date can be determined with precision, supplemented
by cumulative abnormal returns for longer periods before and after the event. Similarly,
Akbulut and Matsusaka (2003, p. 8) note that theory does not prescribe a particular
window size but (-2,+1) and (-5,+5) days seem to be the most popular. As for long-term
event studies, Kothari and Warner (2004, p. 7) state that the exact definition of “long
horizon” (or referred as long-term or long-term post-event period or post-bid period in
this study) is arbitrary. However, generally, it applies to event windows of 1 year or
more. From their Table 1, approximately 200 of the 565 event studies on the list use a
maximum window length of 12 months or more. This is consistent with recent research
into takeovers that has extended the concentration to an analysis of longer event
windows or long-term post-event returns to the shareholders, such as the studies by
Brown and da Silva Rosa (1998), Hou, Olsson, and Robinson (2000), Loughran and
use periods between 3-5 years after the event for analysis. Long-term event studies have a long history because some of their evidence is inconsistent with the efficient market hypothesis which started to accumulate in the late seventies and early eighties, and interest in long-term studies continued to be stimulated. Many studies document abnormal returns spread over the long-term post-event period of time, such as those by Fama (1998), Kothari (2001); Kothari and Warner (1997) and Schwert (2002), amongst many others. Some of this work was reviewed and summarised in chapter 1. In short, whether the obvious abnormal returns are due to miss-pricing or simply the result of measurement problems is a controversial and unsettled issue amongst financial economists.

Furthermore, in a more recent study, Kothari and Warner's (2004) findings show that horizon length has a big impact on event study test properties. Moreover, long-term results are more problematic. Similarly, Lyon, Barber, and Tsai (1999) assert that even using the best method, the analysis of long-term abnormal returns is unreliable. This is consistent with the reports of past studies that there are two main problems in multi-year long-term tests. Firstly, the precision of the risk adjustment is very important in long-term event studies. It is explained that small errors in risk measurement can make a big difference when calculating abnormal returns over a long-term period. The evidence on this is provided by Ball and Kothari (1989), Ball, Kothari, and Shanken (1995), Chan (1988) and Chopra, Lakonishok, and Ritter (1992). Secondly, it is unclear which expected return model is correct, and estimates of abnormal returns over long-term periods are highly sensitive to model choice.

A consequence of the above argument is that errors in risk adjustment can make a difference in measured abnormal performance over long-term periods, and so a search for better improved and developed models began after the discredit of CAPM (Basu, 1977 and 1983; and also Kothari & Warner, 2004, p. 25). Thus, two main methods for assessing and calibrating post-event risk-adjusted abnormal performance are used. The first is the characteristic-based matching approach (also known as the buy-and-hold abnormal returns, BHAR\(^{23}\) or the buy-and-hold benchmark approach) which uses a matched-firm approach to adjust for risk. This approach is used in studies such as

\(^{23}\) Mitchell and Stafford (2000, p. 296) describe BHAR returns as the average multiyear return from a strategy of investing in all firms that complete an event and selling at the end of a pre-specified holding period versus a comparable strategy using otherwise similar non-event firms.
Barber and Lyon (1997), Ikenberry, Lakonishok, and Vermaelen (1995) and Lyon, Barber, and Tsai (1999), and more in studies in recent years. The second is the calendar-time portfolio approach (also known as the Jensen’s alpha approach) which estimates risk-adjusted abnormal performance (see Fama, 1998; Mitchell & Stafford, 2000). This approach was first introduced in financial-economics research by Jaffe (1974) and Mandelker (1974), and it has been advocated in studies such as Fama (1998) and Mitchell and Stafford (2000) (for a variation of this method, see Ibbotson, 1975, and it is used in Ball & Kothari, 1989). This approach is implemented in recent work by Baker and Limmack (2001), Brav, Geczy, and Gompers (2000), Brav and Gompers (1997), Kohers and Ang (2000) and Loughran and Ritter (1995), amongst others. However, the findings of recent studies that use the calendar-time portfolio approach are mixed. For example, Brav and Gompers (1997) and Mitchell and Stafford (2000) support the calendar-time portfolio approach but Loughran and Ritter (2000) do not. Nevertheless, the characteristic-based matching approach is suggested to be a method with more appealing features. This is due to buy-and-hold returns better resembling investors’ actual investment experience than the periodic (monthly) rebalancing entailed in other approaches to measuring risk-adjusted abnormal performance (Ang & Zhang, 2002, p. 4; Ikenberry et al., 1995, p. 195; Kothari & Warner, 2004, p. 27). Also, the characteristic-based matching approach avoids biases that arise from security microstructure issues when portfolio performance is measured with frequent rebalancing (Ball, Kothari, & Shanken, 1995; Blume & Stambaugh, 1983; Roll, 1983).

As for the significance tests for these two methods, while skewness in portfolio returns is a by-product of cross-correlated data rather than a direct consequence of skewed firm-level buy-and-hold abnormal or raw returns, cross-correlation in abnormal returns in long-term event studies, even though the event is not clustered in calendar time, is essential (Brav, 2000; Jegadeesh & Karceski, 2004; Mitchell & Stafford, 2000). Although the calendar-time portfolio approach is referred to as a solution to the potential bias due to cross-correlation, it is miss-specified in a non-random sample, in that event samples are clearly different from random samples (Kothari & Warner, 2004, p. 35; Lyon, Barber, & Tsai, 1999, Table 10; Mitchell & Stafford, 2000, p. 307). At the same time, Bernard (1987) and Kothari and Warner (2004, p. 36) argue that using the characteristic-based matching approach to estimate standard errors that account for the cross-correlation in long-term abnormal returns is not straightforward.
Then, Lyon, Barber, and Tsai (1999) develop a bootstrapped skewness-adjusted t-statistic to address the cross-correlation and skewness biases. The first step in the calculation is the skewness-adjusted t-statistic (see Johnson, 1978). This statistic adjusts the usual t-statistic by two terms that are a function of the skewness of the distribution of abnormal returns (see eq.5 in Lyon et al., 1999, p. 174). The second step is to construct a bootstrapped distribution of skewness-adjusted t-statistic (see Lyon et al.; Sutton, 1993). Kothari and Warner (2004) suggest that to bootstrap the distribution, a researcher must draw a large number of drawings, as many as a 1000 times, of re­samples from the original sample of abnormal returns and calculate the skewness-adjusted t-statistic by using each resample. The resulting empirical distribution of the test statistics is used to determine whether the skewness-adjusted t-statistic for the original event sample falls in the α % tails of the distribution to reject the null hypothesis of zero abnormal performance.

At the same time, the pseudo-portfolio-based statistical tests infer statistical significance of the event sample’s abnormal performance by calibrating against an empirical distribution of average abnormal performance. This is constructed by using repeatedly-sampled pseudo-portfolios (see, for example, Brock, Lakonishok, & LeBaron, 1992; Byun & Rozeff, 2003; Ikenberry, Lakonishok, & Vermaelen, 1995; Ikenberry, Rankine, & Stice, 1996; Lee, 1997; Lyon, Barber, & Tsai, 1999; Mitchell & Stafford, 2000). The empirical distribution of average abnormal returns on the pseudo-portfolios is under the null hypothesis of zero abnormal performance. The empirical distribution is generated by repeatedly constructing matched-firm samples with replacement. The matching is on the basis of characteristics thought to be correlated with the expected rate of returns. Previous studies use the Fama and French (1993) three-factor model as well as methods based on matching on size and book-to-market as expected return determinants, such as Byun and Rozeff (2003), Gompers and Lerner (2003) and Lyon et al. (1999). For each matched-sample portfolio (it is referred as a matched reference portfolio of firms in this thesis), an average buy-and-hold abnormal performance is calculated as the raw return minus the benchmark portfolio return. Kothari and Warner (2004) suggested that it is common to use 1,000 to 5,000 resampled portfolios to construct the empirical distribution of the average abnormal returns on the matched-firm samples. This distribution yields empirically 5 and 95% cut-off probabilities against which the event-firm sample’s performance is calibrated to
infer whether or not the event-firm portfolio’s buy-and-hold abnormal return is statistically significant.

However, there is evidence concerning these two approaches described above; the bootstrapped skewness-adjusted t-statistic test, and the pseudo-portfolio-based statistical test. For example, Lyon, Barber, and Tsai (1999) find test miss-specification in non-random samples; Mitchell and Stafford (2000, p. 307) point out that the typical bootstrapping approach does not even capture the cross-sectional correlation structure related to industry effects; Jegadeesh and Karceski (2004, pp. 1-2) note that the Lyon et al. (1999) approach is miss-specified because it assumes that the observations are cross-sectionally uncorrelated. This assumption holds in random samples of event firms but is violated in non-random samples. Then, Jegadeesh and Karceski (2004) propose a correlation and heteroskedasticity-consistent test to overcome the weaknesses in previous tests. The key innovation in their approach is to estimate the cross-correlations by using a monthly time-series of portfolio long-term returns. This approach is supported by Kothari and Warner (2004, p. 39) who suggest that it might be the most appropriate to reduce miss-specification in tests of long-term event studies.

On the whole, it is confirmed that there have been positive developments in the characteristic-based matching approach. However, two general long-term problems still remain. The first issue is power: the test of Jegadeesh and Karceski (2004) shows no increase in power compared with that of the test employed in previous research which already has low power. The second issue is variance increases, which are equivalent to abnormal returns varying across sample firms, leading to miss-specification and causing the null hypothesis to be rejected too often. Finally, Kothari and Warner (2004, p. 40) conclude that methods which best address long-term concerns continue to be an open question.

For this thesis, the event study was selected to be the research approach. This study primarily investigated takeover effects on the SET by measuring the abnormal returns of target and bidding firms around the takeover announcements. Past studies, for example, Brown and Warner (1980 and 1985), Campbell and Wasley (1993), Dumontier and Petitt (2002), Dyckman, Philbrick, Stephan, and Ricks (1984), and
Goergen and Renneboog (2002), among others, all examine abnormal stock returns by focusing on the characteristics of abnormal returns measured on a particular day or cumulated over several months. However, the literature provides evidence that event studies have been applied with both short-term and long-term corporate event examinations. As a result, it is clearly inferred that event studies that concentrate on announcement effects for a short-term surrounding an event provide evidence relevant for understanding corporate policy decisions, and also, that the event studies focusing on long-term effects following an event provide evidence on market efficiency (Brown & Warner, 1980; Fama, 1991; Kothari & Warner, 2004; and see details in Baker & Limmack, 2001, pp. 3-4; Loughran & Vish, 1997, p. 1776).

Ikenberry, Lakonishok, and Vermaelen (1995) suggest that market reaction to news is not always completed over short-time periods. The full impact of corporate announcements can extend over several years. This is in accordance with Bouwman, Fuuler, and Nain (2003), Gregory and McCorriston (2002) and Hayward and Hambrick (1997), especially the former study that argues that short-term event studies may not fully reflect the wealth creating or destroying impact of an acquisition. Kothari and Warner (1997) suggest that the possibility exists of delayed stock price reaction to at least a dozen events with abnormal performance apparently persisting for some years following the event. Brown and da Silva Rosa (1998, p. 35) note that the long-term performance examination of the post-event returns to bidding firm shareholders is important because the bidding firm's shares being overvalued in a "speculative bubbles" market is associated with the view that a correction to the unjustified market and overvaluation will be observed only in the long-term. This view is strongly supported by the findings of Bouwman et al. (2003) and Rosen (2003). This evidence obviously shows that more recent research views the significance of long-term post-event abnormal returns as worthy of investigation. In accordance with the above-mentioned literature, many recent studies in financial economics analyse the long-term performance of stock returns following major corporate events or decisions, such as dividend initiation, stock splits, and acquisitions, as earlier discussed in chapter 1.-The evidence of long-term post-event abnormal returns to bidders. As in the earlier discussion, several report large abnormal returns subsequent to the events, but the interpretation of such findings is contentious.
Therefore, it is interesting to examine abnormal return performances that can be measured by focusing on both a particular takeover announcement time and over a long-time period. Furthermore, Bouwman, Fuller, and Nair (2003) indicate that the bidder returns in takeovers are hard to measure: target firms are relatively small in relation to bidding firms. Thus, takeovers can have little impact on the bidder’s stock price; if a bidder is known to be engaging in a takeover, the reaction to any takeover will only represent how different market perceptions view the anticipated takeover. Furthermore, the resistance of the target will make the takeover process take a longer time. Also, the previous Thai literature review shows that there has been much less in the way of research studies either on long-term return performance or bidding firm performance in a Thai context. Thus, another interest of this thesis is in examining abnormal return behaviour as measured by using a long-term post-bid period, especially for bidding firms. This is similar to other studies that include all three stages: pre-bid, bid and post-bid or post-event period investigation in their studies, such as Brown and da Silva Rosa (1998) and Hou, Olsson, and Robinson (2000); or that include both a short-term and a long-term period of examination in their studies such as Bouwman et al. (2003), Hayward and Hambrick (1997) and Rosen (2003). The latter study, in particular, examines two time horizons: one includes the announcement period, and the other one focuses on the post-announcement period only.

This study is mainly based on a sample of successful tender offers. However, unsuccessful tender offers that occurred on the SET also studied. The analysis emphasises abnormal performance measurement by using monthly stock price data. The firm’s stock price reaction to the takeover announcement was estimated as the rate of abnormal return to the shareholders of both the target and bidding firms. The abnormal returns were generated from a particular stock that responded to the event study as previously mentioned. The total wealth created around the takeover announcement date (month) was defined as the combined value of the abnormal returns to the target and bidding firms’ shareholders. The raw return for one month was simply the change in stock price and any dividends paid, divided by the closing stock price the month before. The abnormal return was defined as the difference between the realised return observed from the market and the benchmark return over the period around the takeover announcements. Also, it was defined “at the announcement of takeovers” or “around the takeover announcements” as the event-window of the examination.
Specifically, in this thesis, the event period was divided into bid (-12,0,+12), pre-bid (-12,-1) and post-bid (+1,+16) periods, month ‘0’ was defined as the event month, and the event date (month) was defined as the submission date (month) of the tender offer by the bidder to the SEC or the date (month) that the proposal was filed at the SEC.

**Bid period investigations**

1. Measured both the target and bidder abnormal performances.

2. Used the market model, market-adjusted model (zero-one model), and a matched reference portfolio method.

3. Applied both Cumulative abnormal return (CAR) and Buy-and-Hold abnormal return (BHAR) methods. Also, the simple average method was used with the abnormal returns estimated from the matched reference portfolio method for the monthly average abnormal return calculation.

4. Total gains of target and bidder were estimated and examined by means of the market model and market-adjusted model (zero-one model). Then, a simple average method was used for measurement and comparisons.

5. Also, the combined values to the target and bidder were investigated by means of the market model and market-adjusted model (zero-one model), and measured by the weighted average abnormal return method. The simple average, CAR, and BHAR methods were then used for the excess return calculations.

6. Tests applied
   6.1 Standardised-residual test
   6.2 Standardised cross-sectional test
   6.3 Conventional t-tests
   6.4 Bootstrapped skewness-adjusted t-statistic tests

**Pre-bid period investigations**
1. Investigated the bidder abnormal returns.

2. Used the market model and market-adjusted model (zero-one model).

3. Employed both CAR and BHAR methods for abnormal return calculation.

4. Tests applied.
   4.1 Standardised-residual test.
   4.2 Standardised cross-sectional test.
   4.3 Conventional t-tests.

Post-bid or Long-term period investigations

1. Estimated the bidder excess returns.

2. Used a matched reference portfolio as the benchmark.

3. Applied the simple average (or monthly average long-term abnormal return), CAR, and BHAR methods for excess return calculation.

4. Tests applied.
   4.1 Bootstrapped skewness-adjusted t-statistic tests

The analysis in this study is based on the tender offer statistics obtained from the SEC between 1992 and 2002. The sample period was selected because these statistics are records of total corporate takeovers on the SET when the study was commenced. To be a comprehensive Thai study, required having a very few cases of unsuccessful tender offers, but they were not ignored in the study, as was earlier mentioned. The sample firms were classified according to whether they were involved in target, bidder, and tender offer characteristics which grouped them nicely into sub-sets as discussed later. In addition, where there were any tender offer that involved repeated targets or bidders, either the same target, the same bidder or the same target and a different bidder or a different target and the same bidder, the latest tender offer was first selected, then, the second, and then the third latest one, were selected respectively in this sequence. It may
seems somewhat arbitrary, but the reason being that the latter tender offer selection means that the more recent data for both stock prices and related financial data are required and there therefore can be more utilised data from the limited available sources of data. This is in line with Baker and Limmack (2001, pp. 9-10) but their interesting reason is that the restriction is imposed to prevent the bidder returns being contaminated by the results of any subsequent takeover, or the introduction of cross-sectional interdependence in returns. However, these selected tender offers as mentioned above were considered with respect to no less than one year’s length between each tender offer. This is in line with the data selection criteria used in Asquith (1983, p. 75). Similarly, Baker and Limmack (2001, p.11, p. 15 and 28) exclude those acquisitions that occur within two years after the first bid with the appeal to the argument of reducing the potential impact of cross-sectional interdependence in returns and avoiding the introduction of new sources of bias through the exclusion of multiple takeovers.

Thus, for the target (bid period) investigation, there are 27 alternatives for performance examinations, and for the bidder (bid and pre-bid periods), there are 80 alternatives for each period performance examinations.

During the time selected, the takeovers on the SET involved 151 tender offers (151 firms or 108 targets, when any repeated target firm was not counted). From this database, a sample was set up according to the following criteria:

1. In this study, a tender offer was classified as being successful if the bidder increased its holding of the target shares or purchased at least some of the outstanding target shares that were tendered for. Although I have not imposed an arbitrary cut-off point for the definition of a successful tender offer, the control of a firm can increase continuously from none for those who own no shares to complete for those who own 100% of the target’s shares or voting rights. Therefore, the takeover of even a small percentage may significantly change the power of voting coalitions and influence the target firm’s operations (Bradley, Desai, & Kim, 1988, p. 5). In other words, since effective control of a firm can be achieved with less than 100 % ownership, many corporate takeovers and transfers of control are ignored by evaluating only mergers. Besides, an important decision variable for firms attempting takeovers is the probability
of the rejection of the offer by the target firm's shareholders (Dodd & Ruback, 1977, p. 352). Moreover, for the SET, once a firm makes a decision to take over a target by being the majority shareholder, it needs to tender an offer to the target firm's shareholders. The Thai security legislation also defines a proportion from 25% of the target shares' holdings as a strategic shareholder and the bidder is required to tender an offer for the total remaining outstanding shares of the target.

According to the available statistics of tender offers between 1992 and 2002 on the SET, the bidder sought, on average, 43.79% to 52.11% of target shares, or 48.74% to 59.49% (excluding tender offers for delisted purposes), or 49.21% to 59.82% (excluding tender offers for delisted purposes and unsuccessful tender offers) of total outstanding shares of target firms. The target shares which are purchased by the bidder, on average, 25.60%, or 28.99% (excluding tender offers for delisted purposes), or 30.83% (excluding tender offers for delisted purposes and unsuccessful tender offers). The biggest percentage of target shares purchased is 99.39% and the smallest percentage is 0.0002%. After the purchase, the amount of target shares held by the bidder is 62.83%, on average, or 57.18% (excluding tender offers for delisted purposes), or 58.32% (excluding tender offers for delisted purposes and unsuccessful tender offers). The biggest and smallest percentages are 99.91% and 1.57%, or 99.89% and 3.46% (they are the same proportions, either excluding tender offers for delisted purposes or excluding tender offers for delisted purposes and unsuccessful tender offers). Thus, the shown percentages strongly support the notion of a scale of control of a target firm, as earlier mentioned: the tender offer for target shares varies from 43.79% to 52.11%, the purchased target shares vary from 25.60% to 28.99%, after shares are purchased, the holding of target shares of 62.83%, on average, whilst the biggest target share holding is 99.91%. This is consistent with Bradley, Desai, and Kim (1988) and Dodd and Ruback (1977). This means that the bidders in this study hold interest in the target shares of approximately 28.19% before they tender an offer and/or offers, then they typically purchase target shares of about 28.99% finally resulting in their target share holdings of 57.18%, on average.

2. Regarding the tender offer statistics, any tender offer was excluded from the sample when it occurred with the purpose of a de-listing. There are about 22.52% of the total tender offers are engaged with delisted purposes. Furthermore, approximately
60.78% of the total delisted companies are caused by mandatory delisting. Besides, these delisted companies have no available stock price data for the determined period of time in this study. Those cases were also deleted when the tender offer was cancelled later or the target firm was in the process of listing. These selection criteria reduced the initial sample from 151 tender offers to 109 tender offers. However, it has to be kept in mind that the much bigger size sample is, the much better the statistical outcome it will result in. Thus, when the first choice, the latest tender offer, was not successful given the criteria, the second latest and the earlier one was considered and selected. Specifically, there are cases where the companies are tendered for more than an offer in different takeover announcement dates. In this case, if it meets the selection criteria, the target from the latest tender offer was selected first. However, if the first is unsuccessful, the target from the second latest or the earlier tender offer is considered and the target is selected and included in the sample.

3. Even though the target was a company listed on the SET at that time, more 57 targets were excluded from the sample because they have no available stock price data, especially for the survivorship period of time in this study (-48,+16). Due to the limitation of available stock price data, this is the reason for determining +16 months for the length of the time period of survivorship for long-term investigation, the longest post-bid period was merely able to be extended to +16 months from the event date (month). The time period end was limited by the available stock price data of the bidding firms in this study because, as was earlier mentioned, the post-bid period for bidder investigation was included in this study. Otherwise, extension of this requirement to a longer post-bid period will result in a further reduction in the sample size. Coincidently, Healy and Palepu (1995) suggest that long-term excess returns should be measured over at least 16 months (and possibly more). This further reduced the sample from 109 to 52 tender offers (52 firms or 46 target firms, no repeated target). Moreover, this restriction is consistent with Baker and Limmack (2001, p. 9) who require return data for each bidder for a minimum of 49 months (-24,+24), or at least 43 months. This is imposed to provide the sample firms with the same survivorship characteristics as the control firms.
To investigate the target performance, 27\(^{24}\) alternatives were included for target abnormal return examination in this research. They are as follows:

1. Examination of the total targets (the sample size = 52 targets).

2. Estimate the target abnormal returns of the samples that meet the specifically determined criteria, separately. The total target sample was partitioned into the sub-sets of the targets by the target, itself, and/or the tender offer characteristics, that are as follows:

   2.1) unsuccessful targets (2 targets)
   2.2) targets that come from competitive tender offers (2 targets)
   2.3.1) prior selected (repeated) targets (6 targets)
   2.3.2) later selected (repeated) targets (6 targets)
   2.3.3) total repeated targets (12 targets)
   2.4) later "REHABCO" targets (8 targets)
   2.5) later delisted targets (15 targets)

3. Investigation of the target abnormal returns of the samples derived from partitioning the total target sample into the sub-sets by each criterion as previously mentioned (case 2.1-2.5), are as follows:

   3.1) the targets excluded unsuccessful targets (50 targets)
   3.2) the targets excluded targets that come from competitive tender offers (50 targets)
   3.3) the targets excluded 6 prior selected (repeated) targets (46 targets)
   3.4) the targets excluded 6 later selected (repeated) targets (46 targets)
   3.5) the targets excluded 12 repeated targets (40 targets)
   3.6) the targets excluded later "REHABCO" targets (44 targets)
   3.7) the targets excluded later delisted targets (37 targets)

\(^{24}\) See Appendix B, Table B1, for details of target firm investigation alternatives.
Measurement of the target abnormal returns of the samples derived from the partitioning of the total target sample into the sub-sets by a combination of the previously mentioned characteristics of the targets and/or tender offers: unsuccessful targets, targets that come from competitive tender offers, repeated targets, later "REHABCO" targets, and later delisted targets, these are as follows:

excluded on the basis of 5 characteristics of the targets and/or tender offers:

4.1) the targets excluded 2.1, 2.2, 2.3.1, 2.4, 2.5 (25 targets)
4.2) the targets excluded 2.1, 2.2, 2.3.2, 2.4, 2.5 (25 targets)
4.3) the targets excluded 2.1, 2.2, 2.3.3, 2.4, 2.5 (21 targets)

excluded on the basis of 4 characteristics of the targets and/or tender offers, except for 2.4:

4.4) the targets excluded 2.1, 2.2, 2.3.3, 2.5 (28 targets)
4.5) the targets excluded 2.1, 2.2, 2.3.3, 2.5 (28 targets)
4.6) the targets excluded 2.1, 2.2, 2.3.3, 2.5 (23 targets)

excluded on the basis of 4 characteristics of the targets and/or tender offers, except for 2.5:

4.7) the targets excluded 2.1, 2.2, 2.3.1, 2.4 (35 targets)
4.8) the targets excluded 2.1, 2.2, 2.3.2, 2.4 (35 targets)
4.9) the targets excluded 2.1, 2.2, 2.3.3, 2.4 (30 targets)

excluded on the basis of 3 characteristics of the targets and/or tender offers, except for 2.4 and 2.5:

4.10) the targets excluded 2.1, 2.2, 2.3.3 (42 targets)
4.11) the targets excluded 2.1, 2.2, 2.3.3 (42 targets)
4.12) the targets excluded 2.1, 2.2, 2.3.3 (36 targets)

Note: When the companies are tendered for more than an individual offer, they are called repeated targets in this study. In this case, the target from the latest tender offer was selected first, and it is called the prior selected (repeated) target in this study, or as case 2.3.1. When the target comes from the second latest or the earlier tender offer that was subsequently selected, it is called the later selected (repeated) target in this study, or as case 2.3.2. In case of the repeated targets, the length of time between the
latest and the second or between the second latest and the earlier tender offer is no less than one year otherwise, the target is not selected. Coincidently, this is in line with Asquith (1983, p. 75) who states that the data selection criteria precludes any mergers for at least one year after the outcome date. Also, it is similar to Baker and Limmack (2001, p. 15) who explain that any acquisition made within two years of a prior bid is excluded in order to reduce the potential impact of cross-sectional interdependence in returns. Later selected targets are considered as repeated targets because they are the same targets as the prior selected targets but they have different event dates. If they are not chosen again the prior selected targets will be considered as ordinary targets. However, I examined prior and later selected targets (case 2.3.1 and 2.3.2) separately in order to know each sample abnormal return performance. The prior selected targets have the event dates later than those of the later selected targets.

To study the bidder performance, a bidder was selected according to the following criteria.

For corporate takeovers on the SET, there are a variety of bidders who engage in the events. However, generally, the bidder is a listed company, non-listed company, individual and/or a group of investors, and others. Basically, in this study, others were defined as bidders that have the following characteristics: a group of investors, a group of investors and a non-listed company, an individual and a non-listed company, and a group of investors and non-listed companies. However, I included in the sample only the bidder that was a listed company at least at the event time and during the study period in order to measure its stock return performance. Also, its stock price data must be available for the survivorship period of time in the study (-48,+16). There are therefore 42 bidders in the sample of the study.

Specifically, since most of the bidders were individuals or a group of investors or non-listed companies, or a mixed combination with those characteristics which accounted for 70% of the total 151 tender offers. As previously mentioned the advantage of a bigger size of the sample, to gain the bigger sample for this study, any types of bidders that were listed companies at that time would be selected. This means either single bidder or consortium or a sub-set of the consortium that tendered an offer
To the targets on the SET at that time were included in the sample. Thus, approximately 30% or 44 out of total 151 tender offers were selected and included in the bidder sample in this study. There are 15 consortia that consist of 45 bidders plus 29 single bidders that resulted in total of 74 bidders in the initial bidder sample. The repeated bidders that have the length of time between the latest and the second latest or between the second latest and the earlier tender offer that is less than one year; and/or no available stock price data for the survivorship period of time (-48,+16) in this study reduced the initial sample from 44 to 28 tender offers and from 74 to 42 bidders or 36 bidders (no repeated bidders).

To measure the bidder performance, 80 alternatives for bidder investigation were provided in this study. The bidder sample was partitioned into the sub-sets of the bidders by the bidder, itself, and/or the tender offer characteristics, that are as follows:

1. Examination of the total bidders (the sample size = 42 bidders)

2. Estimation of the bidder abnormal returns of the samples that meet the specifically determined criteria, separately. The total bidder sample was partitioned into sub-sets of the bidders by the bidder, itself, and/or the tender offer characteristics, that are as follows:

2.1) bidders that tendered the offers to the targets for delisted purposes (4 bidders)
2.2) single bidders (12 bidders)
2.2.1) total single bidders (16 bidders) (single bidders (case 2.2) that included the bidders that tendered the offers to the targets for delisted purposes (case 2.1))
2.3) consortia (12 consortia (but 26 bidders))
2.4) bidders that paid the target shareholders by stocks (2 bidders)
2.5) unsuccessful bidders (3 consortia (3 bidders))
2.6) bidders that were later delisted companies (7 bidders)
2.7) bidders that used to be or have been classified as "REHABCO" or traded in the Rehabilitation sector (2 bidders)

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35 See Appendix C, Table C1, for details of bidding firm investigation alternatives.
2.8) competitive bidders (1 bidder)
2.9) prior selected (repeated) bidders (5 bidders)
2.10) later selected (repeated) bidders (6 bidders)
2.11) total repeated bidders (11 bidders)

3 Investigation of the bidder abnormal returns of the samples derived from partitioning the total bidder sample into the sub-sets by each of the criterion as previously mentioned (case 2.1-2.11), these are as follows:

3.1) the bidders excluded; the bidders that tendered the offers to the targets for delisted purpose (38 bidders)
3.2) the bidders excluded; the total single bidders (30 bidders)
3.3) the bidders excluded; consortium bidders (16 bidders)
3.4) the bidders excluded; bidders that used stocks for the payments to the target firm’s shareholders (40 bidders)
3.5) the bidders excluded; unsuccessful bidders (39 bidders)
3.6) the bidders excluded; bidders that were later delisted companies (35 bidders)
3.7) the bidders excluded; bidders that used to be or have been classified as “REHABCO” or traded in Rehabilitation sector (40 bidders)
3.8) the bidders excluded; competitive bidders (41 bidders)
3.9) the bidders excluded; total repeated bidders (31 bidders)
3.10) the bidders excluded; prior selected (repeated) bidders (37 bidders)
3.11) the bidders excluded; later selected (repeated) bidders (38 bidders)

4. Measurement of the bidder abnormal returns of the samples that were derived from partitioning the total bidder sample into the sub-sets by the combination of the previously mentioned characteristics of bidders and/or tender offers (case 2.1-2.11). There are 56 provided alternatives in the study and each sample (the sub-set of the total bidder sample) consists of bidders varying between 2 and 37 bidders, that are as follows:

4.1) the bidders excluded 2.1, 2.9 (33 bidders)
4.2) the bidders excluded 2.1, 2.10 (32 bidders)
4.3) the bidders excluded 2.1, 2.2, 2.8 (26 bidders)
4.4) the bidders excluded 2.1, 2.2, 2.9 (25 bidders)
4.5) the bidders excluded 2.1, 2.2, 2.10 (24 bidders)
4.6) the bidders excluded 2.1, 2.2, 2.4 (26 bidders)
4.7) the bidders excluded 2.1, 2.2, 2.4, 2.5, 2.8, 2.9 (22 bidders)
4.8) the bidders excluded 2.1, 2.2, 2.4, 2.5, 2.8, 2.10 (21 bidders)
4.9) the bidders excluded 2.1, 2.2, 2.4, 2.5, 2.8, 2.11 (20 bidders)
4.10) the bidders excluded 2.1, 2.2, 2.5 (23 bidders)
4.11) the bidders excluded 2.1, 2.2, 2.6 (22 bidders)
4.12) the bidders excluded 2.1, 2.2, 2.6, 2.7, 2.9 (21 bidders)
4.13) the bidders excluded 2.1, 2.2, 2.6, 2.7, 2.10 (20 bidders)
4.14) the bidders excluded 2.1, 2.2, 2.6, 2.7, 2.11 (19 bidders)
4.15) the bidders excluded 2.1, 2.2, 2.7 (25 bidders)
4.16) the bidders excluded 2.1, 2.2, 2.11 (23 bidders)
4.17) the bidders excluded 2.1, 2.3, 2.9 (8 bidders)
4.18) the bidders excluded 2.1, 2.3, 2.10 (8 bidders)
4.19) the bidders excluded 2.1, 2.3, 2.4 (10 bidders)
4.20) the bidders excluded 2.1, 2.3, 2.4, 2.5, 2.8, 2.9 (6 bidders)
4.21) the bidders excluded 2.1, 2.3, 2.4, 2.5, 2.8, 2.10 (7 bidders)
4.22) the bidders excluded 2.1, 2.3, 2.4, 2.5, 2.8, 2.11 (4 bidders)
4.23) the bidders excluded 2.1, 2.3, 2.5 (12 bidders)
4.24) the bidders excluded 2.1, 2.3, 2.6 (9 bidders)
4.25) the bidders excluded 2.1, 2.3, 2.6, 2.7, 2.9 (5 bidders)
4.26) the bidders excluded 2.1, 2.3, 2.6, 2.7, 2.10 (5 bidders)
4.27) the bidders excluded 2.1, 2.3, 2.6, 2.7, 2.11 (2 bidders)
4.28) the bidders excluded 2.1, 2.3, 2.7 (11 bidders)
4.29) the bidders excluded 2.1, 2.3, 2.8 (11 bidders)
4.30) the bidders excluded 2.1, 2.3, 2.11 (4 bidders)
4.31) the bidders excluded 2.1, 2.4 (36 bidders)
4.32) the bidders excluded 2.1, 2.4, 2.5, 2.8, 2.9 (28 bidders)
4.33) the bidders excluded 2.1, 2.4, 2.5, 2.8, 2.10 (28 bidders)
4.34) the bidders excluded 2.1, 2.4, 2.5, 2.8, 2.11 (24 bidders)
4.35) the bidders excluded 2.1, 2.5 (35 bidders)
4.36) the bidders excluded 2.1, 2.6 (31 bidders)
4.37) the bidders excluded 2.1, 2.6, 2.7, 2.9 (26 bidders)
4.38) the bidders excluded 2.1, 2.6, 2.7, 2.10 (25 bidders)
4.39) the bidders excluded 2.1, 2.6, 2.7, 2.11 (21 bidders)
4.40) the bidders excluded 2.1, 2.7 (36 bidders)
4.41) the bidders excluded 2.1, 2.8 (37 bidders)
4.42) the bidders excluded 2.1, 2.11 (27 bidders)
4.43) the bidders excluded 2.3, 2.9 (12 bidders)
4.44) the bidders excluded 2.3, 2.10 (12 bidders)
4.45) the bidders excluded 2.3, 2.4 (14 bidders)
4.46) the bidders excluded 2.3, 2.4, 2.5, 2.8, 2.9 (10 bidders)
4.47) the bidders excluded 2.3, 2.4, 2.5, 2.8, 2.10 (11 bidders)
4.48) the bidders excluded 2.3, 2.4, 2.5, 2.8, 2.11 (8 bidders)
4.49) the bidders excluded 2.3, 2.5 (16 bidders)
4.50) the bidders excluded 2.3, 2.6 (13 bidders)
4.51) the bidders excluded 2.3, 2.6, 2.7, 2.9 (9 bidders)
4.52) the bidders excluded 2.3, 2.6, 2.7, 2.10 (9 bidders)
4.53) the bidders excluded 2.3, 2.6, 2.7, 2.11 (6 bidders)
4.54) the bidders excluded 2.3, 2.7 (15 bidders)
4.55) the bidders excluded 2.3, 2.8 (15 bidders)
4.56) the bidders excluded 2.3, 2.11 (8 bidders)

Note: The criteria applied for target selection are also used for bidder selection criteria generally. When the companies tender for more than a single offer, they are called repeated bidders in this study. In this case, the bidder from the latest tender offer was selected first, and it is called the prior selected (repeated) bidder in this study, or case 2.9. When the bidder from the second latest or the earlier tender offer was subsequently selected, it is called the later selected (repeated) bidder in this study, or case 2.10. Therefore, the bidder from the latest tender offer was first considered and included in the sample. In the case of the repeated bidders, the length of time between the latest and the second latest or between the second latest and the earlier tender offer has to be no less than one year otherwise, the bidder is not selected. Later selected bidders are considered as repeated bidders because they are the same bidders as the prior selected bidders but they have different event dates. If they are not chosen again the prior selected bidders will be considered as ordinary bidders. However, I examined prior and later selected bidders (case 2.9 and 2.10) separately in order to know how each sample's abnormal return performance behaved. The prior selected bidders have the event dates later than those of the later selected bidders.
Specifically, the previously described 26 alternatives (excluded the total targets alternative) for target firms and 79 alternatives (excluded the total bidders alternative) for bidding firms were also investigated. These sub-sets of the targets and the bidders later are referred as “the characteristic target firms” and “the characteristic bidding firms” respectively. Likewise, five and seven sub-sets of the targets, and five and seven sub-sets the bidders were selected from the earlier mentioned 26 alternatives for target firms, and 79 alternatives for bidding firms, respectively, for investigations as the interesting characteristic firms for takeover activities on the SET. These five and seven sub-sets of the targets and the bidders later are referred as “the five and seven specific characteristic target firms” and “the five and seven characteristic bidding firms” consecutively.

Although there are very few cases of corporate takeovers on the SET that have both targets and bidders that were listed companies at the same time when the event occurred, the study will not be complete if the performance of the combined values of the targets and bidders around the takeover announcement or bid-period are not investigated. Therefore, for the combined value performance examination, if the target and the bidder were a pair of event firms and both were listed companies at the announcement of the takeovers they were selected and included in the sample. Thus, two alternatives for the performance of the combined values of the event firms were investigated. The samples derived from partitioning the total target sample and total bidder sample into the sub-sets, are as follows:

1) Targets vs. single bidders (there are 5 targets and 5 bidders (there is a repeated bidder which is also a competitive bidder at the same time)).

2) Targets vs. consortium (bidders) (there are 4 targets and 4 consortia (but 6 bidders)).

This thesis concentrated on abnormal performance measurement and used monthly stock data partly due to its advantages over daily data. For example, monthly stock returns depart less from normality than do daily returns (Fama, 1976, ch.1); the estimation of parameters (such as systematic risk) from daily data is a non-trivial issue because of the non-synchronous trading problem (see Scholes & Williams, 1977); the magnitude of the rebalancing bias is more pronounced when one uses daily, rather than monthly returns (the rebalancing bias affects the calculation of buy-and-hold abnormal

Campbell, Lo, and MacKinlay (1997) explain that there are a number of approaches that are available to calculate the expected return (or sometimes called normal return) of a given stock. The approaches can be grouped into two categories: statistical models such as constant expected return model (it is referred as constant-mean return model by Campbell et al., 1997, p. 154, is also called mean-adjusted return model by Brown & Warner, 1980, p. 69, 78 and 86; and 1985), market model, market-adjusted return model, and other factor models; and economic models such as capital asset pricing model (CAPM), and arbitrage pricing theory (APT). This implies that there are a variety of expected return models that have been used in event studies such as the market model, constant expected return model, and the capital asset pricing model (CAPM) (see more in Brown & Warner, 1985).

Although the constant expected return model is seemingly the simplest model, Brown and Warner (1980 and 1985) find it often yields results similar to those of more sophisticated models. However, Campbell, Lo, and MacKinlay (1997, p. 155) argue that the market model represents a potential improvement over the constant expected return model. It is suggested that the multifactor models give a limited gain because the marginal explanatory power of additional factors beyond the market factor is small thus, there is little reduction in the variance of the abnormal returns. At the same time, the use of the CAPM in event studies has almost ceased because the restrictions imposed by the CAPM can be relaxed by using the market model. This is supported by Armitage (1995) who suggests that the use of CAPM as a benchmark has been deemed inappropriate in some condition; and by Kothari and Warner (2004) who suggest that as a model of expected return, CAPM is being thoroughly discredited as a result of the voluminous anomalies evidence. Also, the APT has little practical advantage relative to the market model. Moreover, it is concluded that there seems to be no reason to use an economic model rather than a statistical model in an event study.
3.2.1 Measurement of Abnormal Returns

For this study, the market model and the market-adjusted return model were selected as the benchmark or expected return calculated approaches.

3.2.1.1 Market Model

The past studies provide evidence that the market model is the most common approach. Brown and Warner (1980, p. 249) note that beyond a simple, one-factor market model, there is no evidence that more complicated methodologies convey any benefit. In addition, they posit that the market model residuals are the one method that does not suffer from 'too high' a frequency of Type I errors when using the Value-Weighted Index. Also, Armitage (1995) provides a compact review of the main methods and concludes that the market model is the most reliable in the sense that it is always at least as powerful as the best alternative. This is consistent with Beaver (1981). Besides, Dimson and Marsh (1986) and Seyhun (1986) note that the market model abnormal returns are much less inclined to bias due to the size effect because a stock with high returns has a high regression constant. Finally, Binder (1998) concludes that if factors beyond the market return have little explanatory power and/or their betas are imprecisely estimated, the market model performs better in practice.

After the expected return model was selected, the parameters of the model would be estimated by using a sub-set of the data known as the estimation window. Previous research shows that the most common choice is to use the period prior to the event window for the estimation period. Also, Binder (1998) and Campbell, Lo, and MacKinlay (1997) suggest that typically, the estimation window and the event window do not overlap. The reason being that including the event window in the estimation of the expected return model parameters could lead to the event returns having a large influence on the expected return measure.

Peterson (1989, p. 38) suggests that in practice, estimation periods range from 100 to 300 days for daily studies and from 24 to 60 months for monthly studies. Accordingly, Corrado and Zivney (1992) provide evidence that 100 days or more seems
safe for the pre-event estimation period. Aktas, de Bodt, and Cousin (2005) note that a window ranging from 30 to 250 days relative to the event day is usually chosen, somewhat arbitrarily. However, Armitage (1995, p. 34) posits that lengthening the estimation period involves a trade-off between better accuracy of estimation of $\alpha_i$ and $\beta_i$ and these coefficients becoming more “out of date”. As for event window, as in the earlier discussion, Armitage (1995) suggests that two day event windows are common and supplemented by cumulative abnormal returns for longer periods before and after. However, he also asserts that selection of the surrounding event period very much depends on what is being examined. Dyckman, Philbrick, and Stephan (1984) and Glascock, Henderson, Officer, and Shah (1991) contend that the shorter the event window, the easier it is to identify the presence of any abnormal return. Besides, Cowan (1991), Karafiath and Spencer (1991), Salinger (1992) and Sweeney (1991) show evidence that the degree of the bias in hypothesis test about cumulative average abnormal returns (CAARs), when average abnormal estimators are correlated, positively depends on the number of observations in both the estimation period and event window. However, these statistical problems can be addressed with the use of a re-sampling technique, e.g., bootstrapping (Binder, 1998; Brown & Warner, 1980; Chandra & Rorhbach, 1990; Corrado, 1989; Cowan, 1992; Marais, 1984).

In this thesis, for the bid period investigation, the time period of estimation and the event window were determined as below: 3 years (36 months) (-48,-12) for the estimation period, and 25 months (-12,0,+12) for the event window. As for the pre-bid investigation, 2 years (24 months) (-36,-12) was determined for the estimation period, and 1 year (12 months) (-12,-1) was given for the event window.

According to Fama, Fisher, Jensen, and Roll’s (1969) study, they estimate the abnormal returns around the announcement of stock splits from the residuals of the market model. This is the earliest and most influential event study (Armitage, 1995, p. 27). To examine the effect of the event on each stock, $i$, it is controlled for the normal relation between the return on stock $i$ during month $t$, and the return on the market index $R_m$.

$$R_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it}$$
As for this study, the market model was selected as an expected return model and the OLS (Ordinary Least Squares) regression was used in regression of the stock return over 3 years of the estimation period against the return on the valued weighted SET index for the corresponding calendar months. The SET index is calculated from all stocks listed on the SET and is a market capitalisation weighted index that was used as the market index. The regression yielded the intercept term and a measure of systematic risks that then result in the ability to calculate an abnormal return, or a residual, in other words (see details in Armitage, 1995, p. 27), in each event related month for each sample stock. I defined month 13 (or 0) as the event month and calculated 25 abnormal returns on each stock over the period around the takeover announcements, from month 1 (-12) through to month 25 (+12). This interval is the event window for bid period of the study.

The impact of the event on stock returns was examined through a number of stocks that were affected by the takeover announcements at the event time. The abnormal returns (AR) were averaged as

\[ \text{AAR}_t = \frac{1}{n} \sum_{i=1}^{n} \epsilon_{it} \]

\( n \) is the number of stocks (firms)

It has been suggested that the abnormal returns must be aggregated in order to illustrate the overall effects for the event of interest. Campbell, Lo, and MacKinlay (1997) suggest that the aggregation is along two dimensions: through time and across stocks. Accordingly, Kothari and Warner (2004) explain that for time-series aggregation, in estimating the abnormal return measure over any period interval within
the event window (e.g., time -12 through +12), there are a number of methods for time-series aggregation over the period of interest. However, basically, the cumulative average abnormal return method (CAAR) is used as the abnormal return measure of the sum of each month’s average abnormal return. Also, the average buy-and-hold method (ABHAR) is used by firstly compounding each stock’s abnormal returns and then, the mean or average compounded abnormal return is used as the performance measure. Under each method, the measured abnormal returns are the same as the returns to a trading rule which involves buying sample stocks at the beginning of the first period, and holding them through to the end of the last period. They are the CAARs and the ABHARs, correspond to stock holder wealth changes around an event. In this research, both the CAAR and the ABHAR methods were used.

It is also explained that for cross-sectional aggregation, an event study seeks to establish whether the cross-sectional distribution of returns at the event time is abnormal or different from that predicted. Either one examines the entire distribution of abnormal returns or compares the distributions of actual with the distribution of predicted returns to see whether the distributions are the same is a customary way for conducting the analysis. In past event studies, the focus is mostly on the average of the distribution of abnormal returns. However, it has been suggested that typically, the null hypothesis to be tested is whether the mean or average abnormal return (or often it is referred to as the average residual) at time t is equal to zero. Sometimes, other parameters of the cross-sectional distribution such as the median, variance, and determinants of the cross-sectional variation in abnormal returns are studied as well. Nevertheless, Kothari and Warner (2004) assert that the focus on the mean or average abnormal return is reasonable if one wants to understand whether the event is, on average, associated with a change in shareholder wealth, and if one is testing economic models and alternative hypotheses that predict the sign of the average abnormal return. For this thesis, it is of interest to examine whether average abnormal returns for periods around the takeover announcements are equal to zero. Thus, both the CAR and the BHAR methods test the null hypothesis that the mean or average abnormal return are equal to zero were applied in this study.

*Cumulative Abnormal Return (CAR) Method*
The accumulated effect of the event was investigated by means of the cumulative average abnormal return (CAAR) measure as employed by Fama, Fisher, Jensen, and Roll (1969). The same technique was adopted by this study and thus, the values of the average market model abnormal returns were continuously cumulated for every month from T1 (month 1 or -12) to T2 (month 25 or +12) as

$$CAAR = \sum_{t=T1}^{T2} AAR_t$$

CAAR plots for the sample stocks will tend to show a pattern that can be summarised as the results. Also, the CAAR pattern reasonably suggests whether a hypothesis test for abnormal performance in month '0', rather than for the entire period be appropriate (see Figure 3 shown in Brown & Warner, 1980, p. 93).

**Buy-and-Hold Abnormal Return (BHAR) Method**

Ikenberry, Lakonishok, and Vermaelen (1995) note that the results obtained by using the CAR approach should be regarded as descriptive in nature because they do not represent a realistic investment strategy. On the contrary, the BHAR approach presents a more feasible strategy. This study follows Kothari and Warner (1997), a stock’s buy-and-hold abnormal return was defined as the product of one plus each month’s abnormal return, minus one. In other words, I compounded monthly abnormal returns to obtain a holding-period buy-and-hold abnormal return (BHAR_{ft}).

The holding-period buy-and-hold abnormal return, BHAR_{ft}, using the market model as an expected return model was calculated as

$$AR_{ft} = R_{ft} - \alpha - \beta R_{mt}$$

$$BHAR_{ft} = \prod_{t=0}^{T-1} [1 + AR_{ft}] - 1$$

$t=0$ is the event month or the beginning period
T-1 is the period of investment (in months)

Abnormal performance (BHAR\textsubscript{pr}) was defined as the cross-sectional average of the buy-and-hold abnormal return of the number of stocks (n). That is the abnormal return (BHAR\textsubscript{it}) was averaged as

\[
BHAR_{pr} = \frac{1}{n} \sum_{i=1}^{n} BHAR_{it}
\]

Clearly, under either the CAR or the BHAR method, the abnormal returns are measured the same as the returns to a trading rule as described earlier. Whilst the CAR method uses the sum of each month’s average abnormal performance as the abnormal performance measure, the BHAR method first compounds each stock’s abnormal returns and then uses the average or mean compounded abnormal return as the performance measure. This implies that the CAR and the BHAR methods can be employed with the period around the takeover announcements and post-event or after the announcement of the takeover period. Therefore, in this study, these two mentioned methods were applied to bid, pre-bid, and post-bid or long-term abnormal return investigations.

**Monthly Average Abnormal Returns**

The monthly abnormal returns were estimated by means of the matched reference portfolio method. The simple average was then used for abnormal return calculation.

### 3.2.1.2 Market-adjusted Model (Zero-one Model, or sometimes referred to as the Market-adjusted-return Model)

It is argued that data limitation dictates the use of a restricted model such as the market-adjusted model (Campbell, Lo, & MacKinlay, 1997). Some events are unfeasible to have a pre-event estimation period for the expected return model...
parameters. Then, the market-adjusted model is used. This expected return model can be viewed as a restricted market model with $\alpha_i$ constrained to be 0 and $\beta_i$ constrained to be 1. Since the model coefficients are pre-specified, an estimation period is not required to obtain parameter estimates. Also, this model assumes that expected returns are equal across stocks even though they are not necessarily constant for a given stock. Accordingly, Brown and Warner (1980) suggest that this method takes into account market-wide movements which occur at the same time that the sample firms experience events. It is noted that the market portfolio of risky assets is a linear combination of all stocks hence, it follows that $E(R_{it}) = E(R_{mt}) = K_t$ for any stock $i$. Similar to the market model, the abnormal return on any stock $i$ is given by the difference between its return and that on the market portfolio: $e_{it} = R_{it} - R_{mt}$. The market-adjusted model is also consistent with the asset pricing model if all stocks have a systematic risk of unity (Brown & Warner, 1980, p. 70). Finally, Chandra, Moriarty, and Willinger (1990) provide evidence that tests whether the mean-adjusted returns are less powerful than those with market-adjusted and market model abnormal returns. The market-adjusted model is used by many studies in both historical research such as by Cowles (1933) and Latane and Jones (1979), and recent studies such as those of Akbulut and Matsusaka (2003), Baker and Limmack (2001), Ghosh (2002), Gondhalekar and Bhagwat (2000), Healy, Palepu, and Ruback (1992), Maquieria, Megginson, and Nail (1998), Morck, Shleifer, and Vishny (1990) and Raj and Forsyth (2003).

For this thesis, it is considered that the more methodologies that are applied, the more likely that they could give robust results. Therefore, the market-adjusted model was another selected expected return model used for this study. At the same time, there are some other following supporting arguments for the use of this model. The Thai literature provides evidence that many stocks traded on the SET are small and illiquid. For example, Leemakdej (1998, p. 3) suggests that a good example of non-trading stocks may be the takeover targets listed in the less developed capital market like the SET. Most of these stocks are small firms which are neglected by investors. That is they are infrequently traded or illiquid. The evidence shows that the average percentage of non-trading days of these stocks is approximately 20%, compared with 15% of those of the stocks listed on AMEX between 1973 and 1990. Accordingly, Gondhalekar and Bhagwat (2000, p. 8) propose to overcome some of the problems of parameter estimation when dealing with infrequently traded stocks by using the standard market-
adjusted methodology for computing the cumulative abnormal returns (CARs). Thus, this may be another supporting argument for using the market-adjusted model in this study, and the model is shown as follows:

\[ R_{it} = \beta_i R_{mt} + \varepsilon_{it} \]

- \( R_{it} \) is the return of stock \( i \)
- \( R_{mt} \) is the return of market index
- \( \beta_i \) is the systematic risk of stock \( i \)
- \( \varepsilon_{it} \) is the error term

All the calculation procedures are the same as those applied with the market model as previously described. Also, CAR and BHAR methods were employed with the market-adjusted model respectively.

### 3.2.1.3 A Matched Reference Portfolio Method

As previously discussed, for the measurement of abnormal performance over a long-term period, there are two mainly used methods for estimating abnormal returns. One is the characteristic-based matching method, and the other one is the calendar-time portfolio method. Basically, in long-term event studies, benchmarks are used to estimate the unobservable status quo returns that the event firms would have had if the event had not happened (Ang & Zhang, 2002). However, as earlier mentioned, recent research obviously shows that the conclusions to these studies are very sensitive to the choice of benchmarks, see, e.g. Barber and Lyon (1997), Chopra, Lakonishok, and Ritter (1992), Ikenberry, Lakonishok, and Vermaelen (1995), Kothari and Warner (1997), Kothari and Warner (2004) and Lyon, Barber, and Tsai (1999). However, the characteristic-based matching method was selected by this thesis due to the earlier discussion of its several advantages. In addition, Ang and Zhang (2002, p. 4) argue that it is close to the approach that is taken by traditional short-term event studies and is easy to follow.

Accordingly, it is suggested that a common practice in computing an event firm's long-term abnormal return is to utilise a benchmark that matches the event firm
on the basis of size and book-to-market ratios. Since Fama and French (1992) document that common stock returns are related to firm size and book-to-market ratios then, in developing a test to detect long-term abnormal stock returns, I anticipate that it is significant to control for firm size and book-to-market ratios. Their findings show that size and book-to-market ratios together adequately capture the cross-sectional variations in average monthly stock returns and that market beta has no additional power in explaining cross-sectional return differences. Also, Ang and Zhang (2002, p. 24) indicate that the three-factor portfolio benchmark matching on the basis of size, book-to-market ratio, and beta provides only marginal improvement over the standard two-factor (size and book-to-market ratio) benchmark. Furthermore, the Thai stock market size is small. The number of listed companies on the SET has ranged between 320 and 454 firms during 1992-2003. This resulted in a limitation of the number of firms available in a control group after sorting by size and book-to-market ratio. Thus, sorting by another factor, beta, will further reduce the number of firms in any control group so as to be too small, and the number can be less than twenty firms, and will be not worthy of study in terms of using a matched reference portfolio method. This is partly similar to Gregory and McCorriston (2002, p. 14) who note that they use fewer portfolios principally because of the small number of stocks present on the UK stock exchange. Therefore, this study used a two-factor benchmark which is consistent with and confirmed by Fama and French's (1992) reports and by Ang and Zhang's (2002) conclusion that it is not necessary to sort by beta in addition to size and book-to-market ratios.

Most long-term event studies use either a matched single firm or a matched reference portfolio as a benchmark (Ang & Zhang, 2002, p. 2). Variations of this approach have been used extensively, see, e.g. Desai and Jain (1997), Ikenberry, Lakonishok, and Vermaelen (1995), Ikenberry, Rankine, and Stice (1996) and Ritter (1991), amongst many others. Also, Rosen (2003, p. 15) states that studies of long-term returns often use a matched reference portfolio as an alternative benchmark other than using the market model. Hence, this study is strongly consistent with Rosen (2003) because the market model was selected as an expected return model already, as described in earlier sections of the thesis. Now, at this stage, a matched reference portfolio was selected to be another benchmark for this study. Also, Lyon, Barber, and Tsai (1999) advocate the use of a reference portfolio of firms that match the event firm
on the basis of the previously mentioned two factors. Besides, Ang and Zhang (2002) provide evidence that the two factor portfolio benchmark performs better than a single matching firm benchmark for all time horizons (when the t-test is used).

At the same time, it is posited that the BHAR method is an alternative procedure that is important for long-term abnormal return assessing, even if the CAR method is straightforward. Although long-term buy-and-hold abnormal returns are significantly right-skewed, they are warranted if it is interesting to know the answer to the question that whether or not the event firms earn abnormal stock returns over a particular time period of analysis (Kothari & Warner, 1997, p. 302; Lyon, Barber, & Tsai, 1999, p. 192). Therefore, both the CAR and BHAR methods were applied to calculate abnormal returns relative to this benchmark.

Specifically, I used a matched reference portfolio of firms that matched the event firm on the basis of size and book-to-market ratio as the benchmark for the calculation of abnormal returns. Apparently, there are many studies that apply this method, for example, see Baker and Limmack (2001), Bouwman, Fuller, and Nain (2003), Brown and da Silva Rosa (1998), Gregory and McCorriston (2002), and Rosen (2003). However, it is worth noting that most studies use a matched reference portfolio as a benchmark only for long-term abnormal return measurement such as Baker and Limmack (2001), Bouwman et al. (2003), Gregory and McCorriston (2002) and Rosen (2003). Meanwhile, in my study, the above discussed methods were applied to both bid and post-bid periods, partly in order to compare and have robust results. This is consistent with Brown and da Silva Rosa (1998) and Hou, Olsson, and Robinson (2000), but the latter study uses similar method. Furthermore, in the bid period, I also studied both target firm and bidding firm reaction to takeover announcements rather than only bidding firms as in most studies.

Thus, the reference portfolio was formed by using a control group of firms matched on the basis of size and book-to-market ratio rankings. The given reasons for the factor controlling are that the common stocks of small firms and firms with high book-to-market ratios earn higher rates of return (Barber & Lyon, 1997b; Chan, Jegadeesh, & Lakonishok, 1995; Davis, 1994; Fama & French, 1992; Fama & French,
Loughran and Vijh (1997) suggest that adjusting for size and book-to-market effects is important since takeover samples are not distributed equally across the size and book-to-market spectrum. Brav, Geczy, and Gompers (2000) suggest that matching firm returns on size and book-to-market removes an element of bias presenting in the market generally. Barber and Lyon (1997) also note that it is critical to control for both size and book-to-market ratios and that filtering on size and then matching on the book-to-market ratio yields well specified test statistics. Besides, Moeller, Schlingemann, and Stulz (2003) suggest that the size effect is typically more important than how an acquisition is financed and than the organisational form of the assets acquired. Size is measured by market value of equity (market capitalisation) and book-to-market ratio is valued by the book value of common equity reported on the firm’s balance sheet divided by the market value of the common equity.

There has been research that has chosen a benchmark group of firms or a reference portfolio and predicted that the performance of the sample firms would have followed those of the benchmark group. In event studies, the benchmark group is usually the companies in the market portfolio. I adopted the same methodology by using all the firms listed on the SET and then deleted the firms that are related to takeover activities and under the ‘Rehabilitation’ sector. Also, I excluded the firms that reported negative book value of common equities. Moreover, the sample firms with non-available book values needed to be excluded from the sample. The returns were calculated and it is assumed that the sample firms’ returns would have changed in the same way as those of the benchmark group. The effects of the takeovers were examined by comparing the performance of the event firms with that of a reference portfolio of non-event firms.

**Construction of control groups of firms**

The formation of a control group using either the first or second method proceeds as follows:

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26 The criteria used are similar to previous studies. However exclusion of any firm that itself engages in a takeover during the period under investigation is controlled for by the approach that is consistent with that advocated by Jegadeesh (2000), Loughran and Ritter (2000), Baker and Limmack (2001, p. 10) and Bouwman, Fuller, and Naïm (2003, p. 14) who argue that otherwise this will bias the perceived performance, or the test will be biased towards finding no abnormal return.
1. Formation of a control group of firms for each year (at the earliest event month of the event firms (target and bidder), each year (t) from year 1991-2003) using the following procedures:

1.1 Used all firms listed on the SET collected from the Datastream on 17/12/2003 (it is a set of the previous year listed companies added to all new listed companies and minus all delisted companies). There is no special reason for the selected date of the list but it was the commencement time for this research. Only common shares that were listed on the main board were included in the list.

1.2 To make sure that the list consists of all the listed companies on the SET, the mentioned list was cross-checked with the list of listed companies down-load from the SET’s website (www.set.or.th).

1.3 Added all delisted companies and eliminated all “REHABCO”.

1.4 Deleted the companies that were new listed companies for the time after the latest event month, of the event firms, each year t (t varies from year 1991-2002).

1.5 Excluded the companies that were delisted companies for the time until the latest event month, of the event firms, each year t (t varies from year 1991-2002).

1.6 Excluded the companies that were “REHABCO” for the time until the latest event month, of the event firms, each year t (t varies from year 1998-2002). (Forming a control group of firms for year before 1998, there was no need to consider about “REHABCO” because the sector was first established in the year 1998).

1.7 Added “REHABCO” that were allowed back to be traded in their original sectors. The mentioned companies’ effective dates are not later than the latest event month, of the event firms, of each year t (t varies from year 1992-2002). (Forming a control group of firms for year before 1998, again no need to consider about “REHABCO’ companies because the sector was first established in year 1998).

1.8 Subtracted all firms that were associated with takeover activities in year t. (This procedure was ignored for forming a control group of firms for years before 1992 because there are no takeover statistics available from the SEC).

1.9 For the year 2003, the list of the Thai stocks was down-loaded from the SET’ s website (www.set.or.th) on 31/12/2003 was used. However, 42 firms that
were under the rehabilitation sector and all firms related to takeover activity in year 2003 were deleted from the list.

2. Another way for forming a control group of firms for each year was as follows:

2.1 Used all listed companies on the SET collected from the Datastream on 17/12/2003.

2.2 The list was cross-checked with the list of listed companies down-loaded from the SET’s website (www.set.or.th).

2.3 Deleted the companies that were new listed companies for the time after year t (t varies from year 1991-2002).

2.4 Added the companies that were delisted companies for the time after year t because they were not delisted companies in year t.

2.5 Excluded total companies that were “REHABCO” as of year t

2.6 Considered the “REHABCO” that were allowed back to be traded in their original sectors as of year t. In this study, forming a control group of firms each year from 2000-2002, three, five, and nine firms of the “REHABCO” were added respectively.

2.7 Deleted all companies related to takeover activities in year t.

2.8 For year 2003, the list of the Thai stocks that was down-loaded from the SET’s website (www.set.or.th) on 31/12/2003 was used. However, the stocks that were under rehabilitation sector and all firms associated with takeover activities in year 2003 were excluded from the list.

Generally, both methods will give a similar number of firms for a control group for each year. However, in any situation, the first method can give a greater number of firms because only the activities that occurred during the takeover period (the earliest to the latest event month) were considered. In contrast, the second method included all the year’s activities. Nevertheless, it also depends on the number of different activities occurred during the takeover period and beyond the takeover period. In this case, the first method resulted in a greater number of firms for a control group for each year in some years. For example, there were more “REHABCO” and less takeover targets in year 1998 than other years. Even though the first method resulted in more firms, most of them are “REHABCO” which resulted in 26 more “REHABCO” in the control group.
compared with that obtained by using the second method. Thus, I used the second method for forming a control group for each year. For target investigations, the number of firms in a control group varies between 302 and 420 firms and the number of firms in a portfolio varies between 57 and 97 firms. For bidder investigations, the number of firms in a control group varies between 302 and 420 firms and the number of firms in a portfolio varies between 56 and 95 firms; and between 298 and 420 firms, and 57 and 95 firms for the bid period and post-bid periods respectively.

Construction of matched reference portfolios

1. For each event firm, at the beginning of the event window or January of year t (-12m), the market value (size) of control firms was calculated as the product of price per share and the number of shares outstanding. This was repeated at the beginning of the following year over the event window (-12,0,+12).

2. All the SET firms in a control group were sorted by firm sizes and divided into four portfolios, each having the same number of firms. In the cases of the remaining firms, they were put in the middle portfolios due to the assumption that most of the Thai stocks are small and medium size firms. Also, in the case that the last two firms of any portfolio have the same or very similar sizes they were included in the same portfolio.

3. Each target firm’s size was measured by its MV at the same point of time as that of the control group. The size was used for matching with that of the related control group (or the earlier mentioned four portfolios). One of these four portfolios was selected as the similar sized-portfolio.

4. Next, the book-to-market ratio of each firm in the chosen portfolio was calculated as the ratio of the book value as of the fiscal year ending in year t-1 to its market value at the end of December of year t-1. Generally, most of the Thai firms’ financial year is from January-December. However, there are some firms that have financial years that ended differently from December such as March, June, September,
and November. In this case, I adjusted by using their book values at the point of time that met the determined requirement. Although most of the firms' book values were provided by the Datastream database which have been already adjusted for use, I cross-checked and found that some of them needed to be re-adjusted. I assumed a three-month lag in reporting financial results in order to avoid any look-ahead bias. The reason is that according to the SEC regulations, the Thai listed companies have to prepare and file the required financial statements with the SEC within three months from the end of accounting period (see details in chapter 2-The public disclosure of material information, also Ikenberry, Lakonishok, and Vermaelen (1995, p. 187) use a four-month lagged time interval). Any negative book values were excluded. However, a caveat is that the book value in the years before 1992 cannot be collected from the Datastream. In this case, the earlier year's book value may be able to be used as a substitute but the one that is later than the event date is not reasonable to be used. However, there are a very few cases of this. Even though a few of them were provided from the minor sources of data, Brooker Group Public Co., Ltd., 24 reference portfolios cannot be constructed.

5. Then, I further ranked these portfolios by book-to-market ratios and divided each of them into three sub-portfolios.

6. Each target firm’s book-to-market ratio was calculated at the same point of time as that of the selected portfolio and the ratio was used for matching with that of the related portfolio (or the previously mentioned three sub-portfolios). The similar book-to-market sub-portfolio was chosen. This means that the procedures yielded 12 reference portfolios on the basis of size and book-to-market ratios.

7. The size and book-to-market reference portfolio for a given event firm is the one out of the 12 reference portfolios constructed at any point in time over the event window. In other words, the reference portfolio that matched the event firm with size and book-to-market ratios was selected. For each event firm or target, in the typical window, three times has the reference portfolio construction been done, so basically, each event firm has three matched size and book-to-market reference portfolios. In addition to excluding those 24 reference portfolios that cannot be constructed, due to the
earlier mentioned problems, two more reference portfolios were dropped because the event firms or targets themselves had no available book values. However, only two targets totally had no matched reference portfolios. This brought the total to 130 reference portfolios for 50 targets.

8. To avoid new listing bias, each reference portfolio excluded delisted companies or in other words, included only the firms that were listed or that survived during the bid period investigation (-12,0,+12), at least. However, for this thesis the survivorship period is (-48,+16) as earlier discussed. The other reason is that the target and reference portfolio were selected to have identical survivorship characteristics, at least for the period of investigation (Baker & Limmack, 2001, p. 13). In addition, the “REHABCO” stocks, the stocks with no price movement or those that had not enough price movement\textsuperscript{27} during the return calculation period were excluded from a reference portfolio. With these criteria, five reference portfolios of five targets were restricted and needed to be dropped. This reduced the 130 reference portfolios to 125 portfolios for 50 targets. In conclusion, about 19.87% or 31 reference portfolios were dropped from a total of 156 reference portfolios and there remained 125 reference portfolios or approximately 80.13% for 50 targets. The number of firms in each portfolio varies between 19 and 32 firms.

9. I calculated the T month, rebalanced and buy-and-hold returns on each of these portfolios. These returns are used as benchmarks to measure abnormal performance. Abnormal returns over T periods were calculated by both summing monthly abnormal returns for each event firm, which is referred to as cumulative abnormal returns (CARs), and by subtracting the T period buy-and-hold return of the benchmark from the T period buy-and-hold return of the event firm, which is referred to as buy-and-hold abnormal returns (BHARs).

\textsuperscript{27} As a restriction issue based on the argument of Baker and Limmack (2001, fn 13) that this may be a partial control for the sample, and is a compromise to avoid the introduction of a new source of bias. This could be applied to my case in that probably these stocks could be assumed to be illiquid or suspended stocks or based on other reasons but it is hard to know with the limited time so, to avoid the unknown effects they were excluded from the sample.
Then, the same procedures for the construction of control groups of firms and matched reference portfolios were applied for the bidder investigations, both bid and post-bid periods.

**Bid period investigations**

10. In addition to excluding the 52 reference portfolios that cannot be constructed due to non-available book values before the year 1992, as earlier mentioned in problem discussions, one more reference portfolio was dropped because the bidder itself had no available book value. However, ten bidders totally have no matched reference portfolios. This led to 73 reference portfolios for 32 bidders.

11. Only a reference portfolio of the bidder was restricted with no price movement at all then, in this case it was dropped and reduced the 73 reference portfolios to 72 portfolios for 32 bidders. In conclusion, about 42.86% or 54 reference portfolios were dropped from the total of 126 reference portfolios so there remains 72 reference portfolios or approximately 57.14% for 32 bidders. The number of firms in each portfolio varies between 18 and 32 firms.

**Post-bid period investigations**

12. In addition to excluding the 27 reference portfolios that cannot be constructed due to lack of the book values before the year 1992 as earlier mentioned, one more reference portfolio was dropped because the bidder itself had no available book value. This resulted in only one bidder totally having no matched reference portfolios and gave a total of 70 reference portfolios for 41 bidders.

13. Also, only a reference portfolio of the bidder was restricted if it had no price movements at all then, the reference portfolio was dropped and this reduced the total of 70 reference portfolios to 69 portfolios for 41 bidders. In conclusion, about 29.59% or 29 reference portfolios were dropped from a total of 98 reference portfolios and there
remained 69 reference portfolios or approximately 70.41% for 41 bidders. The number of firms in each portfolio varies between 18 and 32 firms.

**Long-term CAR Method**

The long-term cumulative abnormal return (CAR) was calculated as

\[
CAR = \sum_{t=s}^{T} [R_{it} - E(R_{it})]
\]

\( R_{it} \) is the monthly return of a sample firm (firm i)
\( E(R_{it}) \) is the return on a matched reference portfolio

This formula is very similar to the following one that Lyon, Barber, and Tsai (1999) note that conventional t-statistics are only well specified when reference portfolios are purged of the new listing or survivor bias. Thus, the T-period cumulative abnormal return (CAR) for firm i beginning in period s was calculated as

\[
CAR = \sum_{t=s}^{T} [R_{it} - E(R_{it})]
\]

\( R_{jt} \) is the monthly return for the j=1, ..., \( n_i \) firms that are in the same size/book-to-market reference portfolio as firm i, which are also publicly traded in both period s and t.

**Long-term BHAR Method**

The buy-and-hold abnormal return method is used by many studies such as those by Ang and Zhang (2002), Bouwman, Fuller, and Nain (2003), Brown and da Silva Rosa (1998), Kothari and Warner (1997) and Lyon, Barber, and Tsai (1999). The long-term buy-and-hold abnormal return (BHAR) of firm i, denoted as AR\( _i \), was computed as
AR_i = R_i - BR_i

R_i is the long-term buy-and-hold return of firm i
BR_i is the long-term return for a particular benchmark of firm i

The long-term buy-and-hold return of firm i over T months post-events was obtained by compounding monthly returns, that is

\[ R_i = \prod_{t=0}^{T-1} (1 + r_{it})^{-1} \]

r_{it} is the return on firm i in month t
t=0 is the event month or the beginning period
T-1 is the period of investment (in months)

Calculation of the long-term benchmark return of firm i (BR_i) was given below. There are two formulas that were applied for BR_i computing.

\[ BR_i(R_{bh}) = \frac{1}{n} \sum_{i=1}^{n} \prod_{t=0}^{T-1} (1 + r_{it})^{-1} \] .......................... (1)

R_{bh} is the long-term benchmark buy-and-hold return
n is the number of firms in a reference portfolio

In addition, another alternative was used to calculate the returns for the size and book-to-market reference portfolios. First, in each month I calculated the mean return for each portfolio and then compounded this mean return over T months. Research in financial economics commonly uses long-term reference returns calculated in this manner, for example, by Bouwman, Fuller, and Nain (2003), Brown and da Silva Rosa (1998) and Lyon, Barber, and Tsai (1999). In reference to the rebalanced nature of this return calculation, it is also called rebalanced return.
\[ BR(R_{rb}) = \prod_{t=0}^{T-1} \left(1 + \frac{1}{n^t} \sum_{i=1}^{n} r_{t_i}\right)^{-1} \]  

\[ \text{R}_{rb} \] is the long-term benchmark rebalanced return

However, Cowan and Sergeant (2001) use a different method for constructing benchmark returns. They (p. 749) explain that the equal (or value) weighted benchmark return is the arithmetic (or weighted) mean of all N-year buy-and-hold stock returns available starting with the event date for a particular benchmark portfolio. By averaging the full holding-period returns available on the specific trading date means that the need to cumulate or compound benchmark sub-period returns is avoided, thus eliminating the rebalancing bias that Barber and Lyon (1997) identify. The new listing bias is also avoided because only the stocks appearing in the benchmark at the start of the holding period are included.

I disentangle the impact of methods of computing long-horizon abnormal returns by using as many methods as possible. Therefore, another alternative, the average compounded or holding-period abnormal return (AHPAR) was calculated as

\[ \text{AHPAR} = \frac{1}{n} \sum_{i=1}^{n} (\text{HPR}_i - \text{HPR}_{\text{benchmark}i}) \]  

\[ \text{HPR}_i \] is the long-term buy-and-hold return of stock \( i \) (firm \( i \))

\[ \text{HPR}_{\text{benchmark}i} \] is the long-term return for a particular benchmark of stock \( i \) (firm \( i \))

**Monthly Average Long-term Abnormal Returns**

The monthly long-term abnormal returns were estimated by means of the matched reference portfolio method. The simple average was then used for abnormal return calculation.

3.2.2 Measurement of Combined Values
For the combined value measurement of target and bidding firms, the methodologies used were the same as those used in several studies such as Campa and Hernando (2004), Cybo-Ottone and Murgia (2000) and Goergen and Renneboog (2002). This is called the weighted average abnormal return method. However, there have been a number of studies applying similar methodology, valued weighted, such as Berkovitch and Narayanan (1993), Bradley, Desai, and Kim (1988), Gondhalekar and Bhagwat (2000) and Gupta, LeCompte, and Misra (1997). As earlier mentioned, Cybo-Ottone and Murgia (2000, p. 841) state that looking only at the target and bidder separately would give a distorted interpretation of the market reaction to the announcement. Therefore, I evaluated the target and bidder’s combined values resulting from the takeover announcements over the bid period by using the following equation:

\[(AR_{ti} \times MV_{ti} + AR_{bi} \times MV_{bi}) / MV_{ti} + MV_{bi}\]

\(AR_{ti}\) is the abnormal return of target
\(AR_{bi}\) is the abnormal return of bidder
\(MV_{ti}\) is the market capitalisation at the end of the month before the event month for target
\(MV_{bi}\) is the market capitalisation at the end of the month before the event month for bidder

In addition to the market model and market-adjusted model (zero-one model), another methodology, the Matched Reference Portfolio was used as an expected return model or as a benchmark for abnormal return calculation then, the takeover effect examination.

3.3 STATISTICAL TESTS OF ABNORMAL RETURNS

To test the null hypothesis that the mean cumulative or buy-and-hold abnormal return is equal to zero for a sample of n firms, I employed both parametric and non-parametric test statistics.

3.3.1 Parametric Significance Tests
Most studies are concerned with the effect of some event or investment rule on many securities, so it is usually the case that average abnormal returns for one or more portfolios of \( n \) securities are calculated and tested for significance by means of the \( t \)-test. However, a wide variety of approaches can be and have been taken for measuring the significance of predicted errors or estimated abnormal returns. For choices of significance test, Armitage (1995) presents three scenarios.

1. Errors are not cross-correlated and there is little or no event period increase in error variance.
   - In this case use the share time series method with a \( t \)-test, or use Corrado's rank test.

2. Errors are not cross-correlated but there is an appreciable increase in event period variance (one-and-a-half times or more).
   - In this case use the cross-sectional method or, better, Boehmer, Musumeci, and Poulson's (1991) standardised cross-sectional method or the rank test.

3. Errors are cross-correlated.
   - This will not occur unless events share the same event date and securities are from the same industry. In this case use the portfolio time series method. This method is the main test in Brown and Warner (1980).

For this study, three parametric significance tests were applied as follows:

3.3.1.1 Standardised-residual Test

For the \( t \)-test on month '0' (the event month), I used the methodology outlined by Patell (1976) and Brown and Warner (1985). This method is similar to the share time series method (as previously mentioned) used by Dyckman, Philbrick, and Stephan (1984) and assumes that security residuals are uncorrelated and that event-induced variance is insignificant. However, the standardisation serves two purposes. First, it
adjusts for the fact that the event-period residual is an out-of-sample prediction and hence it will have a higher standard deviation than estimation-period residuals (see, for example, Judge, Hill, Griffiths, Lutkepohl, & Lee, 1988, p. 170). Second, standardising the event-period residuals before forming portfolios allows for heteroskedastic event-day residuals, and prevents securities with large variances from dominating the test (Boehmer, Musumeci, & Poulsen, 1991). The standardised residual equals the event-period residual divided by the standard deviation of the estimation-period residuals, adjusted to reflect the forecast error. This standardised residual is approximately unit normal.

The standardised residual = \text{the event-period residual} \quad \text{the standard deviation of the estimation-period residuals}

The test statistic is the sum of the standardised residuals divided by (approximately) the square root of the number of sample firms (The actual denominator is \( \sqrt{\sum_{i=1}^{N} (T_i - 2) / (T_i - 4)} \), where \( T_i \) is the number of days (months) in security \( i \)'s estimation period and \( N \) is the number of firms in the sample. If for most firms there are a large number of days (months) in the estimation period, \( \sum_{i=1}^{N} (T_i - 2) / (T_i - 4) \approx N \).

\[
t = \sum_{i=1}^{N} SR_{iE} / \sqrt{\sum_{i=1}^{N} (T_i - 2) / (T_i - 4)}
\]

or

\[
t = \sum_{i=1}^{N} SR_{iE} / \sqrt{N}
\]

\( SR_{iE} \) is the standardised residual

\( T_i \) is the number of days (months) in security \( i \)'s estimation period

\( N \) is the number of firms in the sample

3.3.1.2 Standardised Cross-sectional Test
Several studies (e.g., Beaver, 1968; Christie, 1983; Dann, 1981; Kalay & Lowenstein, 1985; Rosenstein & Wyatt, 1990) have found that the variance of returns increases significantly when certain events occur. I used the standardised cross-sectional test which is proposed by Boehmer, Musumeci, and Poulsen (1991) to address the misspecification problem of the ordinary cross-sectional technique. This test is a hybrid of Patell's (1976) standardised-residual methodology and the ordinary cross-sectional approach suggested by Charest (1978) and Penman (1982). The test incorporates variance information from both the estimation and the event periods and is closely related to the special case of Ball and Torous’ (1988) estimator in which there is no event-day uncertainty. Corrado and Zivney (1992) have also compared the share time series method, Boehmer et al.’s (1991) standardised cross-sectional method and the rank test. They have found that when an event date variance increase is likely, correct specification of the t-test requires that a cross-sectional variance adjustment be implemented.

The test statistic is the average event-period standardised residual divided by its contemporaneous cross-sectional standard error.

\[ t = \frac{1/N \sum_{i=1}^{N} SR_{it} - \bar{SR}}{\sqrt{1/(N-1) \sum_{i=1}^{N} (SR_{it} - \bar{SR})^2/N/N}} \]

3.3.1.3 Conventional t-Tests

The test statistic is the average abnormal return divided by its cross-sectional standard error. This significance test is the one used in Barber and Lyon (1997), de Silva Rosa, Izan, Steinbeck, and Walter (2000), Goergen and Renneboog (2002), Kothari and Warner (1997) and Lyon, Barber, and Tsai (1999).

\[ t_{CAR} = \frac{\bar{CAR}_{it}}{\sigma (\bar{CAR}_{it})} / \sqrt{n} \]

\[ t_{BHAR} = \frac{\bar{BHAR}_{it}}{\sigma (\bar{BHAR}_{it})} / \sqrt{n} \]
\(\overline{CAR_{it}}\) and \(\overline{BHAR_{it}}\) are the sample averages, and \(\sigma(CAR_{it})\) and \(\sigma(BHAR_{it})\) are the cross-sectional sample standard deviations of abnormal returns for the sample of \(n\) firms.

3.3.2 Non-parametric Significance Tests

3.3.2.1 Bootstrapping-based Tests

Since the buy-and-hold returns are compounded rather than cumulated over time, multi-year standard errors cannot be simply inferred from annual standard errors. Therefore, the statistical inference of the buy-and-hold abnormal returns will be done via bootstrapping. The appeal of the bootstrap approach is that significance tests are free of parametric assumptions because there is no reliance on formal test statistics. The procedures of the bootstrapping rely on repeated random sampling to measure the significance of relevant test statistics. As earlier mentioned, there has been increase recent research that has focused on computation-intensive bootstrapping-based tests that include the bootstrapped Johnson’s skewness-adjusted t-statistic (e.g., Ang & Zhang, 2002; Baker & Limmack, 2001; Bouwman, Fuller, & Nain, 2003; Gompers & Lerner, 2003; Gregory & McCorriston, 2002; Lyon, Barber & Tsai, 1999; Sutton, 1993, amongst others) and simulated empirical p-values (e.g., Baker & Limmack, 2001; Brock, Lakonishok, & LeBaron, 1992; Gregory & McCorriston, 2002; Ikenberry, Lakonishok, & Vermaelen, 1995, amongst others).

3.3.2.2 Bootstrapped Skewness-adjusted t-statistics

Under this approach, the empirical distribution of average or mean abnormal returns under the null hypothesis will be generated. The statistical significance of the sample mean will be evaluated based on this empirically generated distribution. Also, Kothari and Warner (1997) note that this method “seems like a promising framework for alternative tests which can potentially reduce miss-specification”. Lyon, Barber, and Tsai (1999, p. 174) confirm Sutton’s (1993) recommendation that only the bootstrapped skewness-adjusted t-statistic yields well-specified test statistics. I adopted this t-statistic method by applying for the significance tests of both the CAAR and ABHAR. The
bootstrapping involves drawing \( b \) re-samples of size \( m \) with replacement from the original sample. As suggested by Kothari and Warner (2004), \( b=1,000 \) times of resamplings are implemented in the procedures. Similarly, Ang and Zhang (2002) provide evidence that the sampling size does not qualitatively change the test's performance. However, Noreen (1989, Chapter 4) cautions that bootstrap hypothesis tests can be unreliable and extensive research is necessary to determine which specification can be trusted in a particular hypothesis testing situation. Lyon et al. (1999) suggest that the skewness adjustment results in more conservative test statistics as the size of the bootstrap resample decreases. Bootstrap resample sizes of \( n/2 \) yield well-specified inference meanwhile, those of \( n \) do not. As for this study, \( m \) is 1 and 5, even though it seems arbitrary, 5 is approximately a quarter of the number of firms in typical reference portfolios in this research. Also, Lyon et al. and Baker and Limmack (2001) select \( m=n/4 \) for a number of drawing firms with replacement. The skewness-adjusted t-statistic was calculated as the formula below. Finally, to test the null hypothesis of zero mean at the significance level of \( \alpha \), the critical values for the skewness-adjusted t-statistic are based on the tabulated distribution of t-statistics.

\[
\begin{align*}
  \hat{t}_{sa} &= \sqrt{n} \left( S + 1/3 \hat{\gamma} S^2 + 1/6n \hat{\gamma} \right) \\
  S &= \frac{\overline{AR}}{\overline{\sigma}} (\overline{AR}) \\
  \hat{\gamma} &= \sum_{i=1}^{n} (AR_i - \overline{AR})^3 / n\sigma (\overline{AR})^3
\end{align*}
\]

\( \hat{t}_{sa} \) is the skewness-adjusted t-statistic  
\( \sqrt{n} S \) is the conventional t-statistic of \( t = \frac{\overline{AR}}{\overline{\sigma}} (\overline{AR}) / \sqrt{n} \)  
\( \hat{\gamma} \) is an estimate of the coefficient of skewness
CHAPTER 4
TAKEOVER MOTIVATION

It could be argued that companies engaged in takeovers do so to secure economic gains. Consistent with this assertion, most of the bidding firms engage in takeovers to gain potential synergies. However, frequently potential benefits are not realised. Perhaps, diversification is not a guaranteed route to success (Montgomery, 1994, p. 172). Otherwise, this may be the result of poor synergy forecasting by the bidding firms or because takeovers are undertaken for totally different motives such as those suggested by the agency motive or managerial hubris motive (Goergen & Renneboog, 2002, p. 160). Accordingly, Firth (1980, p. 254) suggests that takeovers are the most practical way of rapidly growing, while Hill (1985, p. 843) posits that acquisitions are the main vehicle of diversification growth because they enable firms to grow faster, and with greater certainty, than internal expansion allows. Hence, many studies attempt to explore the motives behind takeovers by a variety of analyses. This chapter is descriptive and the main objectives of the chapter are to review the main takeover motivation theories and also to look at the methodologies used for takeover motive analyses in past studies, leading on naturally to the methodologies to be applied in this study. The chapter is divided into four sections: the first introduces takeover motivation theories, followed by a review of prior studies of takeover motivation emphasising each motive including relevant findings related to takeover motivation theories. The third discusses the methods of takeover motive investigation used in previous studies. Finally, I provide a summary of the methodologies applied in past studies and a discussion of the methodologies used in this study”.

4.1 TAKEOVER MOTIVATION THEORIES

4.1.1 The Synergy Motive

Synergies are viewed as the major motive for mergers and acquisitions. They explain that management of both the target and bidding firms intend to maximise shareholder wealth, and the wealth effects of the takeovers for both target and bidding firm’s shareholders are positive (Mandelker, 1974, amongst others). The wealth gains
for the target firm’s shareholders are positively correlated with those of the bidding
firm’s shareholders and the total wealth gains. The division of the wealth depends on
the relative bargaining power of target and bidding firms (Berkovitch & Narayanan,
1993, p. 350). Similar notions but different explanations have also been made, for
example, by Dodd and Ruback (1977, p. 354) who suggest that merging the real assets
of the two firms results in an increased aggregate market value of the two firms.
Bradley, Desai, and Kim (1983) describe how tender offers are attempts by bidding
firms to exploit potential synergies. The increase in the value of the target firms results
from the transfer of control of the target resources and their reallocation subsequent to
the acquisition. Similarly, Healy, Palepu, and Ruback (1992) suggest that acquisitions
are value-enhancing when increased value stems from synergy benefits that are the
results of better use of target firm’s assets. Acquisitions are undertaken when the value
of the combined firm is greater than the sum of the values of the stand alone firms
(Bradley, Desai, & Kim, 1988; Seth, 1990a; Hayward & Hambrick, 1997). The
additional value or synergistic gain is derived from an increase in operational efficiency,
market power, financial advantages, tax considerations, and other factors (Mandelker,
the concept of value creation is synonymous with that of synergy. However, according
to Penrose (1959), underlying the synergy hypothesis is the general explanation for
growth of the firm which describes the firm as a collection of productive assets and
proposes that the long-term profitability of the firm is closely related to the growth in
the productive opportunity of the firm such as the opportunity for using its assets more
efficiently.

There is ample evidence that is consistent with the synergy hypothesis. For
example, the findings of Akbulut and Matsusaka (2003), Berkovitch and Narayanan
Ghosh and Jain (2001), Goergen and Renneboog (2002), Gondhalekar and Bhagwat
Matsusaka (1993), Pouad (1988), Seth (1990a), Seth (1990b), Seth, Song, and Pettit

28 Also find agency and hubris motives for takeovers in their samples or sub-samples.

4.1.2 The Agency Motive

In this case, the self-interest of the bidding firm’s management is the prime rationale for takeovers. Morck, Shleifer, and Vishny (1990) suggest that managers of bidding firms pursue personal objectives other than the maximisation of shareholder wealth. Similarly, Holl and Pickering (1988) suggest that mergers reward bidding firm’s managers who emphasise managerial objectives rather than shareholder objectives. Walkling and Long (1984) state that the existence or absence of managerial resistance to takeovers is directly associated with the target management’s personal wealth changes due to the takeovers. This implies that managers engage in takeovers because of self-interest rather than shareholder interest. Likewise, there are various explanations for this motive. For example, Managers’ efforts to be involved in conglomerate mergers are viewed as an agency problem because the mergers do not benefit investors but benefit managers by reducing their employment risk or the risk of personal portfolios (Amihud & Lev, 1981; Jensen & Meckling, 1976), or enable the managers to diversify the risk of their human capital, or improve their security (Shleifer & Vishny, 1989), or make the manager indispensable to the firms (Shleifer & Vishny, 1988 and 1989). This is in line with the findings that manager-controlled firms are involved in more diversification than owner-controlled firms (Amihud & Lev, 1981). It is also confirmed by the evidence of Lewellen, Loderer, and Rosenfeld (1985) that bidding firm’s returns from takeovers are positively related to the level of management ownership in the bidding firm (but it is inconsistent with Denis, Denis, & Sarin, 1997). Moreover, Mueller (1969) suggests that managers prefer to stimulate corporate growth rather than corporate value because their private benefits tend to be more substantial in the larger firms. Conyon and Murphy (2002) show that for the U.K., corporate size is the main determinant of the level of management salaries, bonuses, and share allocations. This is consistent with Jensen (1986, p. 323) who argues that growth is associated with increasing managers’ compensation because changes in compensation are positively related to the growth in sales (also Jensen & Murphy, 1990; Stulz, 1990). Managers use

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29 Firth (1980) and Rosen (2003) explain neoclassical theory as associated with the synergy motive.
free cash flow to increase the size of the firm instead of paying it out to shareholders (Jensen, 1986). Managers want their firms to grow even at a cost to market value or they have incentives to cause their firms to grow beyond the point that maximises shareholder wealth (Murphy, 1985). The previously mentioned reports are strongly consistent with the findings that managers try to enter new lines of business, or buy rapidly growing firms not just to maximise growth but also to assure the survival of the firms, even if such investments have a negative present value (Baumol, 1959; Donaldson, 1984; Donaldson & Lorsh, 1983).

Clearly, past studies show that besides the motive of empire-building, there have been at least two other reasons put forward to explain why self-interested managers pursue beyond optimal expansion (Montgomery, 1994). First, managers direct a firm’s diversification in a way that increases the firm’s demands for his or her specific skills. This is consistent with the managerial entrenchment hypothesis argued in Shleifer and Vishny (1989, p. 137). They suggest that in pursuing such interests, managers invest over the value-maximising level. Second, the diversification motive is based on the idea that shareholders can efficiently diversify their own portfolios but managers cannot efficiently diversify their employment risk. Hence, managers pursue diversified expansion in order to reduce total firm risk, then improve their personal positions which does not benefit the firm’s shareholders. This is consistent with Amihud and Lev (1981, p. 606) who suggest that acquisitions are viewed as a form of managerial privilege intending to decrease the risk associated with managerial human capital. It is noted that their consequences are viewed as an agency cost (Montgomery, 1994, p. 166). Some studies findings are consistent with agency motives such as Firth (1980), Holl and Pickering (1988), Meyer, Milgrom, and Roberts (1992), Mitchell and Lehn (1990), Scharfstein and Stein (2000) and Rajan, Servaes, and Zingales (2000).

4.1.3 The Hubris Motive

In hubris-motivated takeovers, Roll (1986) states that managers of bidding firms are influenced by hubris, as a result they overpay for target firms because they overestimate their own ability to run these firms. The hubris hypothesis explains that the

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30 Also find hubris motives for takeovers in his study.
bidding firm's management either overestimate or underestimate the potential synergy. However, takeovers occur when the consequences are overestimated rather than underestimated. Therefore, there are no synergy gains or the synergy is supposed to be zero. Therefore, the payment to the target represents a transfer between the target and the bidding firms. The higher the target's gains, the lower the bidding firm's gains, and the total gains are zero. Thus, the target and bidding firms are negatively correlated meanwhile the target and total gains are uncorrelated. Specifically, the hubris hypothesis asserts that takeovers are motivated by manager's mistakes and they have no synergy gains. It is worth noting that if the hubris hypothesis is strictly maintained, positive total gains in takeovers should not be observed. However, there is evidence that takeovers on average result in positive total gains (see previous summaries in chapter1). In addition, Roll (1986, p. 200) argues that the gains can be explained if there are true synergies in some takeovers but managers still make valuation errors or a part of takeover premiums can still be caused by hubris.

Gondhalekar and Bhagwat (2000) refer to studies that embody similar ideas consistent with the hubris hypothesis, for example, Varaiya (1986) and Varaiya and Ferris (1987) report that bidding firms follow a strategy of hubris-driven overpayment in takeovers. Kohers and Ang's (2000) evidence is that acquiring firms that use earnouts\(^{31}\) or pay part of the control premium only after the target firms are able to achieve pre-specified goals reduce the risk of misvaluing target firms, and earn better returns than other acquiring firms. Moreover, these significant positive abnormal returns do not reverse over the subsequent three years. Some studies provide evidence of hubris-driven takeovers such as those by Firth (1980), Hayward and Hambrick (1997), Hietala, Kaplan, and Robinson (2000), Raj and Forsyth (2003), Varaiya (1986)\(^{32}\), partly in Bouman, Fulier, and Nain (2003) and Rosen (2003).

In conclusion, the synergy motive suggests that takeovers occur because of the economic gains that result from merging the resources of the two firms. The agency motive suggests that takeovers occur because they enhance the bidding firm management's welfare at the expense of bidding firm's shareholders. The hubris

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\(^{31}\) A two-part payment contract: a front-end payment at the time of the merger, and a deferred payment, or earnout.

\(^{32}\) There is evidence to indicate both hubris and managerial motives.
hypothesis suggests that managers make mistakes in evaluating target firms, and engage in takeovers even when there is no synergy.

4.1.4 Other Theories, Hypotheses or Different Views Concerning Takeover Motivation

4.1.4.1 Recurring Individual Theories of Takeover Motivation

Raj and Forsyth (2003) note that despite the three main motives for takeovers: synergy, agency, and hubris that have been widely considered, different research methodologies, samples, and sample periods of the various studies reveal uncertain results about the value of takeovers. This perhaps leads to the recurring of several individual theories or explanations or hypotheses for takeover motivations, fifteen studies are presented as follows:

Mandelker (1974) argues that mergers are a controversial issue in the economic literature. Then, he presents three traditional hypotheses: abnormal gains, chain letter, and growth maximisation. The first, the abnormal gains hypothesis states that information concerning a potential takeover is considered as good news for the bidding firm’s shareholders. Usually, various reasons for economic gains from takeovers are given, including economies of scale, monopoly or economic power, financial advantages, tax considerations, undervalued securities, diversification, and others. This hypothesis is consistent with a theory of mergers suggested by Lintner (1971). The second, the chain letter hypothesis suggests that investors rely on few sources of information, the main ones are financial and accounting data. This implies that shareholders are misled by manipulation of accounting numbers so that the announcement of a potential takeover is followed by a rise in share prices of the bidding firm. But in this context, the information conveyed by the E.P.S. and other accounting numbers are misleading. The third, the growth maximisation hypothesis is presented by Mueller (1969) and it is also known as agency motive or managerial objectives for takeovers (Morck, Shleifer, & Vishny, 1990). It is explained that managerial salaries, bonuses, stock options, and promotions all tend to be more closely related to the size or changes in size of the firm than to its profits. Accordingly, the prestige and power which
managers derive from their occupations are directly related to the size and growth of the firm, not to its profitability.

Dodd and Ruback (1977) suggest that there are at least three hypotheses which predict that takeovers will have a positive impact on the values of target and/or bidding firms' equity. Each of these hypotheses implies that the takeover announcement releases positive information about the event firms and the share prices of these firms will increase to reflect this new information. The first hypothesis is the monopolistic hypothesis which posits that successful takeovers result in monopolistic market power and the monopoly rents will be generated meanwhile unsuccessful takeovers generate no gains. Consequently, the target and/or bidding firm's shareholders earn positive returns from a takeover but either zero or negative returns from an unsuccessful takeover. The second hypothesis is the synergy hypothesis which suggests that there are gains from takeovers arising from increased productive efficiency when the real assets of the two firms are combined. This hypothesis has the same implications for shareholders as the monopolistic hypothesis. Thus, Dodd and Ruback (1977, p. 354) point out that it is impossible to distinguish between the two hypotheses by examining the impact of the takeover on shareholder returns. The third hypothesis is the internal efficiency hypothesis which contends that the assets of the target firms are not being utilised efficiently before the takeovers. A special case of this hypothesis is that corporate takeovers are means of disciplining unskilled management. This is consistent with the improved-management hypothesis suggested by Malatesta (1983), the inefficient management hypothesis suggested by Asquith (1983), and the market for corporate control concept discussed in Manne's (1965). Hence, whatever the origins of the inefficiencies, the announcement of a takeover is perceived as positive information for the target firms. This means the target firm's shareholder wealth will increase if the inefficiency is eliminated. Therefore, the market value of the target firms will increase irrespective of the outcome of the takeovers. At the same time, successful bidding firms can realise positive abnormal returns but unsuccessful bidding firms will not realise any gains and can experience abnormal losses because the takeovers are not costless and resources are dissipated. Besides, zero impact is another related takeover hypothesis suggested by Dodd and Ruback (1977) who state that corporate takeovers have no impact on the values of the event firms. This implies that the shareholders of both target
and bidding firms earn normal returns from successful takeovers, and earn negative abnormal returns from unsuccessful takeovers.

Firth (1980) indicates that there are two theories of the firm that can be used to explain why firms engage in takeovers, and also can be used to predict the outcome of post-merger performance. These are the neoclassical profit maximisation theory and maximising management utility theory. The first theory explains that firms will be involved in a takeover if it leads to increases in shareholder wealth for the bidding firm (Manne, 1965). A limitation on this motive for takeovers occurs when there are competitive bidders who will bid against each other until all the profit potential available from monopoly power, synergy, restructuring, etc. is removed, and this is called the perfectly competitive acquisitions market by Mandelker (1974). The second theory posits that in addition to achieving a level of profits, managers attempt to maximise their own self-interest, and this does not necessarily correspond to maximising shareholder wealth. The self-interests of management are driven by such factors as reducing the risk of losing their jobs, increasing their salary levels, and increasing their power and job satisfaction. Therefore, this is obviously consistent with the agency motive or managerial objectives for takeovers (Morck, Shleifer, & Vishny, 1990). Furthermore, Firth (1980, p. 254) indicates that a competing theory of the firm relates to the maximising management utility theory and this does not require shareholder wealth maximisation as a necessary condition. Thus, in short, the first theory requires that a takeover leads to increased profitability for the bidding firm in order to justify takeovers meanwhile the second theory does not really require increased profitability but an increase in size and/or increase in managers’ benefits are sufficient.

Bradley, Desai, and Kim (1983) describe that tender offers are an attempt by the bidding firm to exploit specialised resources by gaining control of the target firm and implementing a higher-valued operating strategy. This is the synergy hypothesis. The information hypothesis is the other hypothesis that is proposed in Bradley et al. (1983). It explains that the revaluation of the target’s shares is due to market reaction to new information that is generated during the tender offer process. Unlike the synergy hypothesis, the positive revaluation does not require a successful acquisition of the target resources. Thus, this is consistent with the internal efficiency hypothesis that is suggested by Dodd and Ruback (1977, p. 354). In short, the synergy hypothesis and
Information hypotheses predict that a successful tender offer will have a positive impact on target firm's shareholder wealth. However, they have contradictory predictions for the returns to the shareholders of unsuccessful tender offers. The information hypothesis forecasts that target firm's shareholders will realise significant positive abnormal returns with the announcement of a tender offer and that the returns will not dissipate even though the offer is rejected by the target firm's shareholders while the synergy hypothesis predicts that the shareholders of targets of unsuccessful tender offers will not realise a permanent increase in wealth.

Malatesta (1983) interprets three hypotheses concerning takeovers as follows: the first, the investment hypothesis states that both firms engaged in a takeover are assumed to be value-maximisers. The second, the improved-management hypothesis retains the assumption that the bidding firm maximises value while the target firm is directed by inefficient management. Finally, the size-maximising hypothesis assumes that the target firm acts to maximise value and the bidding firm is supposed to maximise size. In addition, Malatesta (1983, p. 157) notes that size-maximising firms are involved in activities which have negative net present values. At the same time, some of the literature such as Penrose (1959), Reid (1968), and Mueller (1969) argues that a link exists between merger activity and size-maximising behaviour by the management of bidding firms. Therefore, this is consistent with the size-maximising hypothesis. It is explained that if all bidding firms act as size-maximisers, takeover prices will be bid to the point where takeover attempts, on average, have a negative impact on the wealth of the bidding firm's shareholders. In addition, Firth (1980, p. 236 and 254) suggested that maximisation of management utility is reflected in such things as salary levels and wealth accumulation, tenure of position, power, and job interest, and that the level of these factors can be increased by growth in corporate size alone. Therefore, the size-maximising hypothesis is very similar to the agency motive or managerial objectives for takeovers (Morck, Shleifer, & Vishny, 1990). Moreover, it is argued that one form of the improved-management hypothesis assumes that investors receive adverse information about management and this leads to loss expectations and will continue until the management is reformed through a takeover. Therefore, this implies that target firms suffer negative returns during the period of inefficient management which leads to an eventual merger or takeover. In short, an exceptional case of the improved-
management hypothesis is the suggestion that takeovers are a means of disciplining inefficient management.

Varaiya (1986) suggests three main motives: value maximisation, management self-interest, and hubris. The first, the value maximisation hypothesis explains that the bidding firm will not undertake a takeover if the net present value of that investment is negative. The expected abnormal returns to a bidding firm’s shareholders at the takeover announcement are non-negative. The expected total dollar takeover gain is positive. The second, the management self-interest hypothesis argues that a takeover is a preferred route for the bidding firm’s management to increase firm size irrespective of the qualities of the takeover. If all managers behave as if they are size-maximisers then, the expected abnormal returns to the bidding firm’s shareholders on the takeover announcement are negative. The expected total dollar takeover gain is non-positive. This is absolutely consistent with the size-maximisation hypothesis discussed in Malatesta (1983). Third, the hubris hypothesis predicts that if there are no gains to corporate takeovers then, the expected abnormal returns to a bidding firm’s shareholders on the takeover announcement must be negative. The expected total dollar takeover gain is non-positive. In short, the previously explained three hypotheses are substantially the same ideas as the main three motives for takeovers: synergy, agency, and hubris. However, the management self-interest and hubris hypotheses have identical predictions for the nature of abnormal returns and dollar gains. It is suggested that if there are no takeover gains, the valuation of target firm by one or more bidding firms can be considered a random variable with the market price as the mean. Thus, takeover bid premiums are the results of positive valuation errors. This is exactly the same idea as Roll’s (1986, p. 199).

Bradley, Desai, and Kim (1988) define the total synergistic gains from a successful tender offer as the sum of the changes in the wealth of the target and bidding firms’ shareholders. The change is the result of a change in supply and/or demand, innovations, or purposeful investments by the bidding firm. Also, the combined value results from more efficient management, economies of scale, improved production techniques, the combination of complementary resources, the redeployment of assets to more profitable uses, and the exploitation of market power.
Seyhun (1990) proposes the conflict-of-interest hypothesis which explains that bidding firm's managers engage in takeovers that benefit them personally, such as via greater job security or non-pecuniary benefits, even if they reduce share prices and shareholder wealth (Fama, 1980; Fama & Jensen, 1983; Jensen, 1986; Jensen & Meckling, 1976). This indicates that the conflict-of-interest hypothesis is consistent with agency motives or managerial objectives for takeovers (Morck, Shleifer, & Vishny, 1990) and this is called the managerialism hypothesis by Seth, Song, and Pettit (2000), and the agency hypothesis by Berkovitch and Narayanan (1993). The conflict-of-interest hypothesis predicts that the bidding firm's managers knowingly overpay for target firms which results in decreased share prices. In trading for their personal accounts before the takeover announcement, bidding firm's managers are expected to reduce their stock purchases, increase their stock sales, or both. The degree of managerial selling is expected to be related to the abnormal loss suffered by the bidding firm's stockholders. However, to determine managerial motivations for takeovers, in addition to the conflict-of-interest hypothesis, other different hypotheses that account for managerial trading for their personal accounts need to be considered. It has been suggested that a part of the share price response is anticipated by the market before the takeover announcement (Schipper & Thompson, 1983). If the preannouncement managerial trading signals managers' expectations about the share price effects of takeovers then, managers are more optimistic (i.e., purchase more shares) before announcements that increase the share price of the bidding firm than before those that decrease the share price of the bidding firm. Also, consideration of the hubris hypothesis which predicts that managers increase their preannouncement share purchases because they overestimate that the takeover will increase the share price of the bidding firm.

In the perspective of Berkovitch and Narayanan (1993), it is firstly argued that the synergy motive assumes that target and bidding firms maximise shareholder wealth and engage in takeovers only if they result in gains to the event firms' shareholders. Therefore, the gains to both target and bidding firms' shareholders are positive. If the target firm's shareholders have bargaining power, the target gains will increase with the total gains. Thus, if they are synergy-motivated takeovers, gains to the target, the bidding firms, and the total gains will be positive and positively correlated with each other. Secondly, the agency motive explains that takeovers are motivated by the bidding
firm’s management who can exploit the shareholders’ benefits to increase their privilege consumption. This results in agency costs that reduce the total value of the combined firm. If the target firm’s shareholders have bargaining power, the gains they obtain will increase with the amount that the bidding firm’s management can appropriate (Berkovitch & Narayanan, 1993, p. 350). Therefore, the more severe the agency problems are, the higher the target firm’s gains will be. The greater the amounts that are appropriated by bidding firm’s management, the lower the total gains will be. This leads to a negative relation between target and total gains, and the target and bidding firm’s gains are also negatively correlated. In addition, Berkovitch and Narayanan (1993) note that with respect to the relation between target firm’s and total gains, it is similar to a takeover motivated by synergy but where there are measurement errors (instead of managerial errors). Therefore, the predictions of these two hypotheses regarding the correlation between target firm’s and total gains are the same. Thirdly, the hubris hypothesis maintains that there are no gains from takeovers and they occur because bidding firm’s managers make mistakes in estimating gains. Target gains are only transfers of wealth from bidding firms. Thus, there is a zero correlation between target and total gains. Other studies that propose the same motivation theories as this study are those by Goergen and Renneboog (2002), Gondhalekar and Bhagwat (2000), Gupta, LeCompte, and Misra (1997) and Seth, Song, and Pettit (2000).

Matsusaka (1993) suggests that the managerial-discipline theory explains that firms are taken-over in order to discipline or replace their inefficient managers. It is consistent with the improved-management hypothesis of Malatesta (1983), the inefficient management hypothesis of Asquith (1983), the internal efficiency hypothesis of Dodd and Ruback (1977), and the market for corporate control concept of Manne (1965) that have been mentioned earlier. Similarly, Raj and Forsyth (2003, p. 3) suggest that takeovers, in some regards, are viewed as a method for ousting incompetent management where they fail to generate sufficient returns to shareholders with the firm’s assets. The other explanation of Matsusaka (1993) is called the managerial-synergy theory which asserts that the management of bidding firms want to work with the present management of target firms or not replace it. It is believed that the bidding firm’s management have valuable managerial expertise that is complementary to the skills of the target firm’s management. For example, the bidding firms can provide expertise at raising capital, and the target firms can provide product development and
manufacturing talents.\textsuperscript{33} The takeovers in which the target firm’s management are maintained are managerial-synergy motive takeovers because target firm’s management are considered as the key assets in managerial-synergy takeovers.

Meanwhile, Montgomery (1994) proposes three views of incentives for diversification. These are the market-power view, the agency view, and the resource view which can be explained as follows: Firstly, the market-power view has the same concept as Hill (1985, p. 828) who argues that diversified firms flourish at the cost of non-diversified firms not because they are any more efficient, but because they have access to conglomerate power\textsuperscript{34}. However, to utilize power across markets, Gribbin (1976) indicates that a firm must first have some strength in its individual markets otherwise, it will not have conglomerate power. Secondly, the agency view is opposite to the market-power view. It emphasises that the bidding firm’s managers gain benefits at the expense of the shareholders of the firms. This view predicts a negative relationship between diversification and a firm’s value. This is exactly the same idea as the agency motive or managerial objectives for takeovers (Morck, Shleifer, & Vishny, 1990). Finally, the resource view suggests that rent-seeking firms diversify in response to excess capacity in productive factors. That is a firm has an incentive to diversify as long as expansion can provide its underused resources with more profitable employment (Montgomery, 1994; Penrose, 1959, p. 67). Comparatively, Montgomery (1994) indicates that the market-power view and the resource view are consistent with profit maximisation, but only the resource view is consistent with the efficient use of resources. Meanwhile, the agency view is a managerial view which is inconsistent with either profit maximisation or efficiency. However, it is posited that market-power is unlikely have a central role in firm diversification thus, the resource and agency views are considerably to be more promising. The agency view helps explain why firms exceed the efficient level of diversification while the resource view helps describe the direction of diversification. That is agency viewers accept that firms maximising growth or managerial privilege will diversify in the way that the resource viewers suggest.

\textsuperscript{33} Matsusaka (1993, p. 358) notes that the idea of general managerial synergies has been more popular in the business press than in the economic press, however, Matsusaka (1991) represents an attempt to formalise the managerial-synergy theory.

\textsuperscript{34} Conglomerate power is derived from the sum of the firm’s market power in its individual markets. Gugler, Mueller, Yurtoglu, and Zuehner (2002, p. 2) state that the term “market power” connotes the ability to control price. Any merger that increases a firm’s market power must, therefore, increase its ability to control (raise) the price of its products.
Finally, Montgomery (1994, p. 175) concludes that diversification is guided by managerial motives, or both events, and is likely to differ within firms, across firms and across time.

Hayward and Hambrick (1997) state that there are three main motives for takeovers: poor target firm’s management, synergy, and hubris (Walsh & Seward, 1990). The first, the poor target’s management perspective, which is rooted in agency theory, asserts that inefficient or self-interest managers who fail to maximise shareholder wealth will be forced out by bidding firm’s management who attempt to extract such value. The takeover premium reflects the value that can be picked up from removing the target firm’s inefficient management. Thus, this hypothesis implies that the bidding firm’s shareholders will benefit from takeovers through improved management of the target firm. However, there is evidence in tests of targets with poor prior to merger performance that this affects premiums, but this has been inconclusive (see details in Jensen, 1984; Jensen & Ruback, 1983; Slusky & Cave, 1991; Varaiya, 1987). Thus, this leads to the conclusion that takeovers occur not because of target’s inefficient management per se but because bidding firm’s management perceive themselves as superior (Hambrick & Cannella, 1993). In the second view, the synergy perspective, it is argued, for example by Slusky and Cave (1991), who find no relation between the business similarity of bidding firms and target firms and takeover premiums paid. Even though they observe that financial synergy relates to premiums, overall variance explained by this factor is small. Hence, it is concluded that synergy partially motivates takeovers but cannot sufficiently explain large takeover premiums or the common adverse stock market reaction to takeovers. The third view, the hubris perspective, as suggested by Roll (1986, p. 199) concludes that takeovers reflect individual decisions. Also, Haspeslagh and Jemison (1991) conclude that bidding firm managements’ egos frequently outpace their logic during a takeover campaign. Furthermore, Haunschild (1994) provides evidence that premiums paid by bidding firms are highly associated with those paid by other firms that share their outside directors and with the premiums paid by other firms that use the same investment banker. Finally, it is concluded that the hubris hypothesis helps overcome the limitations of other perspectives because it explicitly considers transactions from the perspective of the decision maker, or the bidding firm’s management, and it is consistent with evidence that premiums are excessive. It is noted that the previously mentioned three theories are
exactly the three main takeover motives: agency, synergy, and hubris or motives as explained in Berkovitch and Narayanan (1993).

Accordingly, Gugler, Mueller, Yurtoglu, and Zulehner (2002) explain that the hypotheses about why takeovers occur can be grouped into three broad categories. The first two presume that the bidding firm’s managers seek to maximise profits or shareholder wealth. Under this assumption, any takeover is expected to either increase the market power of the bidding firms or reduce their costs. The third hypothesis includes those that consider other managerial objectives than profits. This implies that either the growth of the firm or irrational behaviour may occur. Thus, this is consistent with agency and hubris motives for takeovers.

Goergen and Renneboog (2002) suggest that the main motives for takeovers are the value creation effects that result from synergies. These synergies are called operating synergies if there are economies of scale or scope, and called informational synergies if the combined value of the assets of the two firms is higher than the value that the stock market attributes to the assets. Also, two more motives: agency or self-interest, and hubris are explained.

It is argued that the mixed findings of bidding firm’s shareholder returns result in the question concerning the motivation of the bidding firm and its management in takeovers. Thus, apart from the three main motives previously mentioned: synergy, agency, and hubris, Raj and Forsyth (2003) suggest that in addition to the possibility of operational and financial synergy, takeovers may occur due to perceived managerial synergy. The managerial synergy will arise when management of the bidders is superior to those of the target firm. Consistent with Matsusaka (1993), the hypothesis is also supported by Holl and Kyriazis (1997) who find similar results to those of Servaes (1991) that high-value bidding firms are acquiring lower-value target firms to obtain wealth gains. Moreover, the managerial synergy theory can be viewed on another side as the managerial discipline theory (Matsusaka, 1993, p. 358). Thus, in this sense, the managerial synergy theory is consistent with the informational synergy hypothesis of Goergen and Renneboog (2002), the managerial-discipline theory of Matsusaka (1993), the improved-management theory of Malatesta (1983), the internal-efficiency theory of
Dodd and Ruback (1977), and the concept of a market for corporate control of Manne (1965). However, it is expected that the managerial synergy hypothesis in Raj and Forsyth (2003) is explained in order to further link to the hubris hypothesis in the sense that past successes of bidding firms leads to the overestimation of possible synergies and results in overpayment for target firms.

4.1.4.2 Factors Influencing Takeover Motivation

A few recent studies concentrate on merger momentum and investor sentiment as market factors that influence the reaction to a merger. For example, Rosen (2003) expounds on three theories that are consistent with merger momentum: neoclassic theory, managerial motivations, and over-optimistic beliefs. However, these theories have different predictions for the behaviour of long-term returns. The first, the neoclassic theory assumes that managers perform to maximise shareholder wealth. Under this theory, merger momentum results from announcements that increase synergies for a group of mergers. To measure this motive, it is expected to see a positive correlation between merger waves and the market reaction to a merger announcement. It is argued that the market reaction contains all the information about the potential of the merged firms thus, there is no reversal of price changes after the merger is completed. The principal ideas are similar to those of the synergy theory. The second, the managerial motivation as suggested by Rosen (2003) are that they influence merger decisions in booming markets and assumes that if managerial motivations dominate, the correlation between merger waves and the market reaction to a merger announcement is negative. This implies that a firm’s shares are overvalued and results in no long-term positive returns. This is the same idea as that of Gorton, Kahl, and Rosen (2005) (also see details in Rosen 2003, p. 2) who state that if managers make worse acquisitions in booming markets due to managerial objectives or hubris motives, the long-term returns to bidding firm are negative (even if a positive announcement return is included). Likewise, the ideas are similar to Morck, Shleifer, and Vishny’s. (1990) who posit that managers can use mergers to protect their private benefits and the results are similar to

35 It is defined as a correlation between the market reaction to a merger announcement and recent market conditions. “Thus, a hot merger market is one of where the reaction to recent market conditions is favourable. Hot markets are related to, but not necessarily the same, as merger waves. Waves are traditionally measured by the number (or value) of mergers rather than the market’s reaction to merger announcements. The market reaction depends upon the new information containe in a merger announcement as well as how the market reacts to that information” (Rosen, 2003, p. 3).
those of Gregory (1997). The third theory explains that momentum results from over-optimistic beliefs on the part of investors and managers. It predicts that during booming markets or when optimism reigns, the market reaction to merger announcements should be more positive than at other times. However, price increases should be overturned in the long-term as over-optimism or misperceived synergy available from mergers is replaced by true results. The theory is supported by some recent literature. For example, Helwege and Liang (2004), Ljungqvist, Nanda, and Singh (forthcoming) and Pastor and Veronesi (2003) suggest that the reaction of the shareholders to a merger announcement can be affected by investor sentiment. This means investors response factors are broader than just reflecting the value created by mergers. Also, managers make more takeovers during periods of optimism if they are influenced by the same optimism as investors. Loughran, Ritter, and Ryndqvist (1994) suggest that IPO issuers time their issues to take benefits of the optimistic beliefs of investors in booming markets. Accordingly, Loughran and Ritter (1995) attribute high returns on IPOs or seasoned equity offerings to optimistic beliefs on the part of investors. It is worth noting that these three theories ideas are very similar to those of the three main motives for takeovers: synergy, agency, and hubris.

Furthermore, some of the recent literature links market valuations to takeovers and suggests that in addition to the valuations of their own firms, managers are also influenced by the overall state of the market. For example, Bouwman, Fuller, and Nain (2003, p. 3) present that during booming market, managers are more likely to be affected by hubris and undertake takeovers that lack sufficient synergies. These hubris motivated takeovers result in negative returns in the long-term. This is in line with over-optimistic beliefs suggested by Rosen (2003) who predicts that price increases reverse in the long-term because of synergy available misperceptions from mergers being replaced by the market learning the true quality of the decision. In addition to the hubris motive, Bouwman et al. (2003) also suggest three more perspectives: investor sentiment, booming stock market, and herding behaviour. In the first, it is posited that investor sentiment is influential (see Lee Shleifer & Thaler, 1991) because when market sentiment is bullish, managers may be encouraged to make takeovers given that the market may expect firms to undertake growth-enhancing initiatives such as takeovers. There is some evidence of this relation between share prices and investor sentiment, see, for example, Rosen (2003) and Baker and Wurgler (2004). The second perspective is
that takeovers during booming markets are easier to mount than during bearish markets in terms of reduced target firm's resistance because target firms receive higher premiums. The final perspective is based on herding arguments in relation to behaviour by managers. It is explained that according to Keynes's view (1936, p. 157), professional managers follow the herd if they are concerned about how others assess their ability to make sensible decision. This is supported by Graham (1999) and Scharfstein and Stein (1990) who find that managers simply mimic the investment decisions from other managers and ignore substantive private information. In addition, Neeman and Orosei (1999) propose a model of social learning in market-like environments and show that the phenomena of informational cascades and herding arise in combination with the winner's curse. This assumes that if managers expect to undertake more takeovers during booming markets, each manager is more likely to takeover another firm and is less careful in assessing synergies. This can be explained in terms of the damage of the reputation from a wrong takeover that is made as a part of a herd is smaller than when the manager makes a more isolated decision.

Ghosh (2002) suggests that increasing market share is a rationale for corporate takeovers. This is consistent with Schumpeter (1942). The hypothesis is argued from the viewpoint that increasing market share through takeovers enhances firm value because of increased investments and innovation. It is supported by the evidence that R&D and advertising spending increase following acquisitions that increase market share (MacDonald, 1985; Montgomery & Hariharan, 1991; Ravenscraft & Scherer, 1987, p. 34; Schumpeter, 1942). Accordingly, the theory of the firm is supportive in terms of the results that operating performance improves larger market shares for bidding firms because of increased sales turnover and lower operating costs (see, for example, Ghosh, 2002; Gugler, Mueller, Yurtoglu, & Zulehner, 2002; Kamien, Muller, & Zang, 1992; Klein, Crawford, & Alchian, 1978; Porter, 1987; Williamson, 1985). Ghosh (2002, p. 9) notes that the benefits from transferring skills arise only if there are enough similarities among bidding firms and the similarities are in activities that are important to competitive advantage. It is consistent with Lemelin (1982) and MacDonald (1985) in the sense of "similarities". Thus, sharing activities increase competitive advantage by lowering costs or increasing sales turnover via effective product differentiation. However, Ghosh (2002, p. 2) argues that an increase in market share does not imply that market share is a motivation because the increase might be a consequence of takeovers.
rather than a motivation. Nevertheless, Ghosh (2002, p. 9) indicates that increasing
market share is an important value-enhancing rationale for takeovers. Besides, one more
theory is proposed, it claims that product market competition increases liquidation
which leads to an increased managerial turnover. It is supported by the findings of Fee
and Hadlock (2000) that managerial turnover increases with product market competition
in the newspaper industry. Thus, a higher market share will reduce the likelihood of
managerial turnover. Ghosh (2002) calls this the managerial reason for increasing
market share and suggests that it is an important factor in takeovers especially in terms
of increasing the bidding firm’s market share.

According to the previous demonstration of various perspectives concerning
takeover motives, this review suggests that most of the presented theories can be
classified into the same categories or are very similar to the three main motives for
takeovers: synergy, agency, and hubris, many theories relate to the three main motives,
but only some of those theories differ from the all three major motives. The summary of
18 studies provides evidence that 12 from 18 studies, each propose at least three
motives for takeovers; 3 from 18 studies, each present two motives for takeovers.
Furthermore, almost, 15 from 18 studies, include the synergy motive in their present
motives: even though several theories or hypotheses are called different names, their
explanations and objectives for takeovers are the same and their predictions are the
same or very similar such as those indicated by the abnormal gains theory, monopolistic
theory, neoclassical profit maximisation theory, investment hypothesis, value
maximisation, managerial synergy theory, operating synergy theory, informational
synergy theory, market power view, and financial-synergy theory. The second most
commonly proposed motive is that based on agency theory which is sometimes unclear
because it is proposed under different names, but there are 15 from 18 studies that adopt
it. Agency theory also can be called growth maximisation, internal efficiency,
maximising management utility theory, informational hypothesis, improved-
management hypothesis, size-maximising hypothesis, management self-interest,
conflict-of-interest, agency motives, managerialism hypothesis, managerial-discipline,
poor target management perspective, managerial objectives, and managerial
motivations. Only 9 from 18 studies state the hubris theory. This supports the argument
of Hayward and Hambrick (1997, p. 106) that the hubris motive has been relatively
neglected. It has not been found that any research has attempted to dissect and study the
operation of hubris within the management of the bidding firms. However, 7 from 18 studies present all three major motives: synergy, agency, and hubris, excluding 3 more studies: Gondhalekar and Bhagwat (2000), Gupta, LeCompte, and Misra (1997) and Seth, Song, and Pettit (2000) that do not mention the motive details since they are exactly the same as those stated in Berkovitch and Narayanan (1993), they are the synergy, agency, and hubris motives for takeovers.

In conclusion, it is clear that there have been a multitude of studies of takeovers and these studies contribute invaluable information and results for financial economic fields. Basically, the three main motives for takeovers that have been advanced in the literature: are the synergy, agency, and hubris motives. It is noticed that more recent studies place more emphasis on different factors that impact on the reaction to takeovers or takeover decisions.

The following section presents the results of hypotheses tests of past studies which are predominantly based on the previously mentioned hypotheses tests.

4.2 A REVIEW OF PRIOR STUDIES OF TAKEOVER MOTIVATION

4.2.1 Studies of the Synergy Motive

Mandelker (1974) examines the market for takeovers and the impact of mergers on the returns to the shareholders of the merged firms. His findings are consistent with the hypothesis that the bidding firm operates in a perfectly competitive market. The bidding firm’s shareholders earn normal returns, the target firm’s shareholders earn abnormal returns, and there is some evidence that the shareholders gain somewhat from mergers. Thus, it is concluded that the results are consistent with the abnormal gains hypothesis.

Dodd and Ruback (1977) estimate the stock market reaction to successful and unsuccessful tender offers. The impact of the tender offers on the returns to shareholders of both target and bidding firms are examined. The findings show that shareholders of
both successful and unsuccessful target firms earn large positive abnormal returns while only successful bidding firms earn significant positive abnormal returns.

Bradley, Desai, and Kim (1983) test competing implications of the synergy and information hypotheses by examining the returns for unsuccessful target firm’s shareholders. The unsuccessful target firms are separated into two groups: those that became the targets of a subsequent successful tender offer and those that did not. They find that target firm’s shareholders realise significant positive abnormal returns on the announcement of a tender offer and the returns do not dissipate subsequent to the rejection of the offer by the target firm’s shareholders. Furthermore, they suggest that this revaluation is due to the anticipation of a potential successful tender offer. The total abnormal returns to the target firms that are not targets of subsequent successful tender offers within five years of an unsuccessful offer dissipate within two years of the initial unsuccessful tender offer. The shareholders of those target firms that receive a successful subsequent tender offer experience additional significant and positive abnormal returns. They conclude that the synergy hypothesis is more consistent with the evidence than the information hypothesis. Also, the study investigates unsuccessful bidding firms (the bidders who lost bide either to the current target management or to a rival bidding firm). They report that the unsuccessful bidding firm’s shareholders suffer a significant wealth loss. This wealth loss is due to the negative returns realised by firms which lose tender offers for their target firms to rival bidding firms. It is explained that successful bidding firms control specialised resources that allow for a profitable tender offer and that these resources are eventually used to put the unsuccessful bidding firm at a competitive disadvantage in the marketplace. This is consistent with the implications of the synergy theory of tender offers.

Bradley, Desai, and Kim (1988) note that there are no earlier studies that document the magnitude of the synergistic gains that result from successful tender offers. They also suggest that it is necessary to measure the gains by applying matched pairs of target and bidding firms. Thus, they estimate the magnitude of the synergistic gains by measuring the revaluation of the combined wealth of target and bidding firms’ shareholders. They find that the average synergistic gain is US$117 million (in December 1984 dollar terms) or approximately 7.40% increases in the combined wealth.
of the event firms. The findings are consistent with the synergy hypothesis advanced by Bradley, Desai, and Kim (1983) and inconsistent with Roll’s (1986) hubris hypothesis.

Lang, Stulz, and Walkling (1989) split the sample of tender offer announcements into those with high $Q^{36}$ bidding firms and low $Q$ bidding firms, one creates a sub-sample in which the bidding firm makes a substantial gain and a sub-sample in which the bidding firm makes a loss. They find that the results do not support the view that negative bidding firm’s returns occur because bidding firms are overcome by hubris during the tender offer. It is explained that bidding firms that lose the most when a tender offer is announced have low $Q$ ratios. Therefore, the results are consistent with the view that the market valuation of investments made by these bidding firms is low because of poor managerial performance. In other words, it can be concluded that the findings are in line with the view that well-managed bidding firms take over poorly-managed target firms resulting in higher returns to target firm, bidding firm, and total gains. This is similar to Bradley, Desai, and Kim (1988) and Stulz, Walkling, and Song (1988); and also Dumontier and Petitt (2002, p. 20), Lang, Stulz, and Walkling (1991), Morck, Shleifer, and Vishny (1990) and Rosen (2003, p. 14) who suggest that firms with better prior performance make better acquisitions.

Seth (1990b) examines how value is created in different types of acquisitions. It is reported that value creation in related acquisitions is associated with the economic efficiencies hypothesis which results from both economies of scale and scope and from operating efficiencies, and with market power. This suggests that there are synergistic gains.

Berkovitch and Narayanan (1993) develop tests to differentiate among the three main motives for takeovers: synergy, agency, and hubris. They report that, on average, takeovers yield positive total gains which occur in approximately 75% of the takeovers. It is concluded that while synergy is the primary motive in takeovers, there is obvious evidence that takeovers are motivated by both agency and hubris motives. In addition, it is also found that competition induced takeovers are influenced by agency rather than

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36 Tobin’s $Q$ is defined as the ratio of the firm’s market value to the replacement cost of its assets. The firm’s market value is the sum of the value of its common stock, debt, and preferred stock (Lang et al., 1989, p. 138).
by synergy motives. Therefore, the agency motive is the major reason for the existence of value-reducing acquisitions. The main results are very similar to Seth, Song, and Pettit’s (2000) findings despite using Berkovitch and Narayanan’s (1993) methods in examining the motives underlying foreign acquisitions of U.S. firms.

Gondhalekar and Bhagwat (2000) examine the effect of the crash of 1987 on corporate takeovers and report that synergy is the motive for takeovers when the total gains are positive, and agency factors are the motive when the total gains are negative. Hubris is evident for takeovers that have positive total gains especially for those in the after-crash period (1987). The findings broadly support Grundfest (1990) and Jensen (1993) and suggest that the alignment between the interests of shareholders and their managers decreases after major changes in the economy, and that the corporate governance of firms fails to afford protection in this event. Moreover, the study suggests that, in some circumstances, the decision to use stocks as a source of financing and thus, the capital structure choice is made by the management, and is driven by the self-interested motives, not by considerations about the availability of financial slack and/or whether the stocks are over-valued. This is inconsistent with previous studies’ results that if the offer is financed by the bidder’s stock, then this signals that the stock is over-valued such as suggested by Franks, Harris, and Titman (1991) and Fuller, Netter, and Stegemoller (2002), amongst others.

Goergen and Renneboog (2002) analyse the U.K. market reactions to takeovers in large takeover deals with a value of at least US$ 100 million. The study also investigates takeover motives and shows evidence that synergies are the prime motive for takeovers and that the target and bidding firms tend to share in the wealth gains. There are about a third of the total firms where managerial hubris leads to poor decision making in takeovers. The findings from this study are in line with those of Berkovitch and Narayanan (1993) and Gupta, LeCompte, and Misra (1997) who both find strong evidence that synergy is the prime motivation for takeovers. The latter study also provides evidence for both agency and hubris are motives for takeovers.

Gugler, Mueller, Yurtoglu, and Zulehner (2002) determine whether takeovers increase market power or efficiency by examining their impacts on a firm’s profits and
It is argued that meanwhile, most of the previous studies have considered the consequences of takeovers by measuring their average effects on either the profits or sales of the bidding firms, this study determines the effects of takeovers on efficiency and market power by first separating takeovers into those that increase profits and those that reduce profits, and then examining the patterns of sales changes following the takeovers. Gugler et al. (2002) find that 56.70% of all takeovers result in higher profits but a similar portion of takeovers results in lower sales after five years. However, they finally conclude that takeover increases market power.

Rosen (2003) examines the interaction between market conditions and the market response to a merger announcement. It is reported that mergers announced during booming markets tend to have a better reaction from the market than those announced during bearish markets. However, the short-term reaction to an announcement is reversed in the long-term. It follows predictions that if investors expect mergers to create synergies, they react positively to merger announcements. In contrast, when investor anticipations are based on over-optimism, the short-term positive returns from a merger announcement reverse in the long-term. Rosen (2003) posits that managerial concerns operate in addition to investor sentiments. The interpretation is that since managers are rewarded for short-term performance, they are willing to make bad acquisitions that give their firms a short-term increase in share prices. This explains the positive short-term response to merger announcements in booming merger markets as well as the negative long-term performance of the same mergers. The same results are confirmed by Bouwman, Fuller, and Nain (2003, p. 30) who conclude that the reversals are due to a combination of market irrationality and managerial hubris.

Bouwman, Fuller, and Nain (2003) find an answer for whether the overall level of the stock market affects takeover decisions. It is reported that in the short-term, when share prices are high, the market delights in takeovers and bidding firms earn significantly positive abnormal returns. In the long-term, these returns are negative which indicate that the market gradually learns that the majority of takeovers undertaken during high valuation periods are poor decisions. These findings are consistent with those of Rosen (2003) as previously mentioned, but inconsistent with Jegadeesh and Titman (1993) whose interpretation is in line with the analysis of DeLong,
Shleifer, Summers, and Waldman (1996). Even though Bouwman et al. (2003) argue that their study is closely related to Dong, Hirshleifer, Richardson, and Teoh (2003), Loughran and Vijh (1997), Rau and Vermaelen (1998) and Rhodes-Kropf, Robinson, and Viswanathan (forthcoming), these studies have some different focuses. Bouwman et al. investigate the impact of market sentiment on a bidding firm's performance in the short-term and long-term. Dong et al. (2003) examine the impact of market miss-valuation on firm's takeover behaviour, and Rhodes-Kropf et al. (forthcoming) measure the effect of valuation errors on merger activity. The last two studies are more related. Loughran and Vijh (1997) and Rau and Vermaelen (1998) estimate the post-event returns to target and bidding firms' shareholders. In short, Bouwman et al.'s results are more consistent with those of Rosen (2003) who suggests that share prices influence takeover decisions.

Dong, Hirshleifer, Richardson, and Teoh (2003) measure irrational market miss-valuation affects on firms' takeover behaviour by using measures of the miss-valuation of target and bidding firms. The proxies used are the ratio of book value of equity to price and the ratio of residual-income value to price. The evidence broadly supports the miss-valuation hypothesis and is consistent with Shleifer and Vishny (2003) in the sense that bidding firms make equity offers to over-valued target firms. It is also found that a more over-valued target is associated with a lower bidder return. This is also in accordance with the miss-valuation hypothesis because the more over-valued target will generate lower gains for bidders, and is also consistent with the Q hypothesis because rapidly growing targets will generate lower gains for bidders (Lang, Stulz & Walkling, 1989; Servaes, 1991). In addition, the findings are complementary to those of the recent studies that examine aggregate valuation and the takeover market, such as Bouwman, Fuller, and Nain (2003), Dong, Hirshleifer, Richardson, and Teoh (2003) and Verter (2003).

Rhodes-Kropf, Robinson, and Viswanathan (forthcoming) use a regression technique to decompose the M/B (Market-to-Book) ratio into components that track

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37 Miss-valuation is defined as the discrepancy between the current market price and fundamental value (Dong et al., 2003, p. 2).
38 "The miss-valuation hypothesis holds that bidders try to profit either by buying under-valued targets for cash at a price below fundamental value; or by paying equity for targets that, even if overvalued, are less overvalued than the bidder" (Dong et al., 2003, p. 2).
miss-valuation at the firm and sector levels; and a component that tracks long-term growth opportunities. The evidence reveals that a large fraction of mergers are explained by miss-valuation theory which is very similar to Dong, Hirshleifer, Richardson, and Teoh (2003). Moreover, it is suggested that the findings support miss-valuation theories based on either behavioural explanations or asymmetric information between rational managers and markets. Thus, this means the results are strongly consistent with those of the recent studies such as Rhodes-Kropf and Viswanathan (forthcoming) and Shleifer and Vishny (2003) who suggest that miss-valuation drives mergers. However, the two previously mentioned studies have little difference because Rhodes-Kropf and Viswanathan (forthcoming) propose a rational theory based on correlated misinformation but Shleifer and Vishny (2003) propose a theory based on an irrational stock market in which managers are rational. Therefore, this theory is opposite to Roll’s (1986) hubris theory in which financial markets are rational whilst corporate managers are irrational. Furthermore, it is argued that the theory proposed by Shleifer and Vishny (2003) relates to the neoclassical theory but can accommodate the additional evidence. Finally, it is also noted that Rhodes-Kropf et al. (forthcoming) results’ link valuation to merger waves and complement contemporaneous empirical work by Harford (2003). The recent related work, for example, by Dong et al. (2003), and Ang and Cheng (2003) apply similar ideas to those in Rhodes-Kropf et al. but use analyst’s estimates of future earnings in stead of the regression-based approach employed in Rhodes-Kropf et al.

According to the findings summarised from 14 studies, they reveal that there are 10 from 14 studies which obviously report synergy as the motive for takeovers, however two of them (Berkovitch & Narayanan, 1993; Gondhalekar & Bhagwat, 2000) also find that agency and hubris motives influence takeovers, and the remaining suggest that other reasons explain takeovers such as investor sentiment and managerial motivations; market irrationality and managerial hubris; and miss-valuation.

The following section presents the results of studies concerning more with managerial reasons: the agency and hubris motives, for takeovers.
Apart from Roll (1986), there have been other studies that discuss the hubris motive. For example, Hayward and Hambrick (1997) investigate the role of a chief executive officer’s (CEO) hubris, and state that hubris infects exceptionally confident managers who over-estimate their ability to extract takeover benefits and consequently pay a large premium\(^{39}\) for takeovers. Raj and Forsyth (2003, p. 3) suggest that past successes of hubris driven management lead them to arrogance and a feeling of superiority, overestimation of the possible synergies or value creation benefits from takeovers, resulting in unnecessary overpayment. It is argued that there is evidence that the premium paid by the bidding firm signifies how much value can be drawn from the target firm. For example, Jensen (1993) reports that the average premiums between 1976 and 1990 were approximately 41%. Barnes (1998) suggests that the market expects a premium of above 30% to be offered by the bidding firm when it is viewed as a serious offer. Other studies such as Firth (1980), Hietala, Kaplan, and Robinson (2000) and Varaiya and Ferries (1987), amongst others, also present the hubris motive for takeovers, which is discussed in the following section of the chapter. Also, another view of overpayment is that managers of bidding firms pursue personal objectives other than the maximisation of shareholder value (Holl & Pickering, 1988, Morck, Shleifer, & Vishny, 1990).

### 4.2.2 Studies of the Hubris Motive

Firth (1980) examines the impact of merger and takeover activity in the U.K on shareholder returns and management benefits. He suggests that examination of the takeover impact on profitability, size, and management benefits gives an indication as to which motive for takeovers is the more relevant. The profitability of takeovers is examined in two ways. The first method involves examining the financial data of the target and bidding firms before and after the takeovers, or investigating the returns for shareholders of event firms. The second method involves measuring the movement of share prices around the takeover announcements, this gives a direct measure of the increase or decrease in shareholder wealth. The findings are consistent with the previous studies' reports. They are consistent with takeovers resulting in corporate profitability but significantly decreasing the value of the bidding firm. Takeovers also result in

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\(^{39}\) Takeover premium is defined as the ratio of the ultimate price paid per target share divided by the price before takeovers (Hayward & Hambrick, 1997, p. 103).
remarkable increases in the remuneration levels of directors. Therefore, takeovers benefit the bidding firm's management but do not serve the firm's shareholders. The evidence is consistent with the management utility motive for takeovers. These findings are also in line with agency problems or managerial objectives for takeovers as suggested by Morck, Shleifer, and Vishny (1990). It is concluded that there is evidence that indicates the hubris motive and managerial objectives as motivators for the takeovers.

Varaiya (1986) notes that the returns to bidding firms in the past studies may be biased in view of the difficulties (also, Eckbo, Maksimovic, & Williams, 1990) of measurement associated with, for example, the expectation of takeovers, the relative size differentials between bidding and target firms, prior bidder ownership of target, and confounding non-acquisition-related information effects (Grinblatt & Titman, 2002, p. 708; Hietala, Kaplan, & Robinson, 2000). He adopts screening criteria to try to reduce the previously mentioned bias problems, and uses a sample comprising both mergers and tender offers to address the question of why returns to bidding firm are positive in successful tender offers but non-positive in successful mergers. He differentiates amongst the three main takeover motives by the measurement of bidder abnormal returns and total dollar takeover gains (the sum of the dollar gains to both bidding and target firms in a takeover). To distinguish between the agency and hubris hypotheses, he forms a bidding model based on the existence of random valuation errors to predict the takeover bid premium, or the winning bidder's expected bid premium which, on average, overstates expected takeover gains. The predictions are that the bid premium in a successful takeover is positively related to 1) the coefficient of variation of the distribution of bidder value estimates for a given target, and 2) the degree of competition amongst bidders for control of target. It is concluded that the findings are consistent with one or both of the self-interest management and hubris hypotheses, and the findings of De Angelo, De Angelo, and Rice (1984).

Varaiya and Ferris (1987) apply the winner's curse hypothesis in their study. This hypothesis was first advanced by Capen, Clapp, and Campbell (1971) who state that in competitive takeovers, the winner is the bidder who most overestimates the true value of the target firm. The winning bidder's bid premium overstates the anticipated takeover gains, and consequently, the bidding firm will earn negative abnormal returns.
To prove this prediction, they calculate a measure of the successful bidder overpayment for a given target firm. It is the difference between the observed winning bid premium and the market estimate of the maximum offer premium. The findings support the hypothesis that bidding firms overpay in takeovers. The average level of overpayment is positive and significant (73.80 percentage points) and the cumulative average abnormal return is a significant -3.90%.

Giliberto and Varaiya (1989) explain that the winner’s curse hypothesis suggests that the winner of a sealed-bid auction in which the value of the target is controlled for and is uncertain tends to be the bidder who most overstates the true value of the auctioned target. Consequently, auction winners who fail to recognise this possibility are likely to be “cursed” by having paid more for the target than its true value. It is argued that this hypothesis is applied by Roll (1986) and Varaiya (1988). Giliberto and Varaiya (1989) examine the effects of bidder competition and the winner’s curse hypothesis within sealed-bid auctions. They test two predictions: the relationship between the expected optimal bid of any bidder and the number of competing bidders as predicted by the winner’s curse model; and the relationship between the expected winning bid and the number of competing bidders as predicted by alternative auction models. The tests are based on observed bids instead of abnormal returns. The results suggest that bidding firms overpay.

Malatesta (1983) argues that the cumulative abnormal dollar return is an investment performance index which measures the abnormal returns to a specific investment strategy: buy and hold the whole firm. Therefore, this is the only strategy available to shareholders as a group. A given abnormal return has a relatively greater impact on total shareholder wealth when firm value is higher. If the merger sample is truly random, the cumulative abnormal return and the compound abnormal holding period return provide unbiased indicators of the net present value of a merger attempt. However, Malatesta (1983, p. 160) argues that the cumulative abnormal return and the compound abnormal holding period return can be misleading when computed from samples of successful or unsuccessful mergers. Therefore, the cumulative abnormal dollar return measure is applied in this study, also, the returns to target firms, bidding firms, and valued weighted combined value of paired event-firms are computed. To facilitate comparisons with other studies, the abnormal rate of returns of event firms are
examined. The findings show that the estimated net effect of takeovers on target firm’s shareholder wealth is negative. This follows the improved-management hypothesis. However, even though the findings show that bidding firm’s shareholders experience wealth losses and tend to support the size-maximising hypothesis, it is concluded that they are not strong conclusions because of the experimental design.

Matsusaka (1993), who follows Malatesta (1983), suggests that the most direct way to evaluate whether managers diversify for their own benefits or in the interest of shareholders is to examine the effects of diversification on the value of the firm’s equities. He argues that a percentage return measure can distort the results in that the small firm make a better takeover as well as reflecting the payoff to investment strategies that are not reasonable to the firm’s shareholders as a group (Malatesta, 1983, pp. 159-160). In addition, it is also argued that the investment measure used in Morck, Shleifer, and Vishny (1990) results in the change in the value of the bidding firm impounding the purchase price. Consequently, it is redundant to rescale by the purchase price. Thus, the measure used in Matsusaka (1993) is dollar return and the cumulated residual rates of returns from a market model weighted by the market value of the firms. However, he argues that even though the measures are concentrated on the dollar return, the percentage return and the investment return are considered as well, and all three measures result in the same outcomes. To test the motives hypotheses, the prediction is that if firm value declines upon a takeover announcement, its management do not behave to maximise shareholder wealth. The dollar-return regression results show that bidding firm’s shareholders benefit from takeovers. This suggests that diversification is motivated by synergy not managerial objectives. It is also found that the market reacts positively to bidding firms who retain the target’s management and negatively to bidding firms who remove the target’s management. This is consistent with Hubbard and Palia (1999). Thus, the evidence supports a managerial-synergy theory not a managerial-discipline theory. Moreover, it is worth noting that the magnitude of the managerial-retention coefficients indicates that bidding firms that replace target management tend to reduce their shareholder value. It is explained that the bidding firms’ managers pursue managerial objectives, that is the agency motive; otherwise they overpay because they overestimate their ability to improve the target, that is the hubris motive. However, it is concluded that hubris is the motive because the negative returns to related diversification are attributed to hubris rather than agency motive.
Hayward and Hambrick (1997) disagree with prior studies such as those by Berkovitch and Narayanan (1993) and Firth (1980) who use aggregate shareholder returns on the takeover announcement as a proxy for hubris and assume that a negative market reaction indicates hubris. It is argued that takeovers reflect individual bidders' decisions (Cyert & March, 1963; March & Simon, 1958; Roll, 1986). Thus, a study of premiums paid must use the decision maker, not the firm, as the unit of analysis. Therefore, their study takes into account behaviour factors that include the individual profiles, backgrounds, self-images, and assumptions that bidding firms' managers bring to takeover pricing (Hambrick & Mason, 1984; Haunschild, 1994). This supports the findings that premiums are intensely susceptible to human, interpretive, and social processes, and are not strictly the result of economic calculations (Haunschild, 1994). Moreover, it is argued that the chief executive officer (CEO) is essential in approving bids in large takeovers (Haspeslagh & Jemison, 1991), and it is implausible that terms of a major takeover can proceed to the board without the CEO's personal sponsorship. Thus, they focus on the effects of key sources of CEO hubris on the takeover premium: recent organisational success, recent media praise for the CEO, and the CEO's self-importance. Also, they examine the implications of hubris for firm performance by following previous research such as by Fama, Fisher, Jensen, and Roll (1969), Puffer and Weintrop (1991) and Reinganum (1985) who use cumulative abnormal stock returns (CARs) as the measure of firm performance. Hayward and Hambrick (1997) find that their results support prior studies that suggest that takeovers tend to damage bidding firm's shareholder wealth. A negative relationship between hubris and returns to shareholders indicates that hubris has unfortunate implications for shareholders in large takeovers. The larger the premium paid, the greater the loss over a one-year post-acquisition period. They explain the delayed effects that on one side, even though the market is specious about the CEO's ability to regain a large premium, it still gives the management benefits. On the other side, the market negatively responds to the post-event performance because it includes slippage results of core business of the firm due to managerial concern with the new entity as well as unforeseen problems with the takeover itself, or the excessiveness of the premium becomes clearer later. This is consistent with several difficulties in estimating bidder returns described by Eckbo, Maksimovic, and Williams (1990), Fuller, Netter, and Stegemoller (2002), Grinblatt and Titman (2002, p. 708), Hietala, Kaplan, and Robinson (2000) and Varaiya (1986), amongst others.
Schwert (1996) studies the relation between the premium in takeovers and the pre-announcement stock price run-ups. He proposes that there are at least two competing hypotheses about the effects of early revelation of information in a merger or tender offer situation: the substitution hypothesis and the mark-up pricing hypothesis. Schwert (1996, p. 157) suggests that the mark-up pricing hypothesis reflects rational behaviour of bidders and targets when they have incomplete information. Another explanation for a lack of substitution between the run-up and the mark-up is based on irrational behaviour, or it is called the hubris hypothesis by Roll (1986). It is suggested that one way to distinguish between the mark-up pricing hypothesis and hubris hypothesis is to estimate the stock returns to the bidder firm. If the bidder firm offers too much for the target firm, given the information available to the stock market at the time of the bid, the bidder’s stock price should drop. The predominance of evidence of the study supports the mark-up pricing hypothesis which is consistent with rationality because neither bidders nor targets are assured about the causes of pre-bid run-ups. An increase in the target’s stock price reveals information about other potential bidders and the successful bid is expected to adjust to reflect this information. Moreover, there is no relation between the run-up in the target’s stock price and the behaviour of the bidder’s stock price over the term of the transaction. Thus, the findings are inconsistent with Roll’s (1986) hubris hypothesis.

Hietala, Kaplan, and Robinson (2000) show that it is possible to use bidder and target stock prices to obtain market estimates of overpayment. There are two basic cases in which synergy, information, and overpayment effects can be disentangled to display the estimated overpayment by the bidder. One occurs when the takeover is not consummated or when a sole bidder makes an unsuccessful takeover (such as Bradley, Desai, & Kim, 1983); the other occurs when it is a takeover contest that includes two (or may be more) bidders (such as Giliberto & Varaiya, 1989; Hietala et al., 2000; Raj & Forsyth, 2003; Varaiya, 1986; Varaiya & Ferris, 1987). Giliberto and Varaiya’s (1989) study is in line with the idea suggested by Raj and Forsyth (2003, p. 2) who argue that “the prospect of many companies striving to gain control of one company will usually result in the management suffering from the concept of the “winners curse” -where the successful bidder overpays for the target, a feature common in an auction environment. Due to being part of a high market-valued company, the management is confident that it can continue this success once the target has been attained”. Furthermore, it is posited
that even if there is the presence of a single bidder, the likelihood of other bidders entering the competition causes the potential winning bidder to pay too much and remove much of the value that occurs from the takeover. This scenery is similar to the concept of a competitive theory that is suggested by the historical studies such as Asquith (1983), Dodd and Ruback (1977), Firth (1980) and Mandelker (1974). Hietala et al. use the link between current stock prices and expected future cash flows to set up a framework for inferring distinct sources of value change. It is argued that their evidence conforms to the predictions of Bebchuk and Hart (1999) who present a theoretical model in which market prices around the time of proxy contests and takeover battles do not reflect all available information about future values exactly because there is uncertainty over who will ultimately win the merger auction. Also it is contended that their study is close to Bhagat and Hirshleifer (1996) and Schurman (1999)40, but the results are consistent with the latter not the former. However, it is concluded that the findings are strongly consistent with Roll’s (1986) hubris hypothesis.

Raj and Forsyth (2003, p. 2) state that past studies report mixed findings for bidder returns surrounding the announcement of a takeover. They note that this may be due to studying a larger sample that includes many different motives for the takeovers which deform the results. At the same time, they argue that past research regards mergers study a sample which is susceptible to the three major motives as previously mentioned. This leads to be difficult to identify which major factor causes shareholder gains or losses. It is also argued that the stock market provides a real assessment of a firm and how it is managed via the price placed on its equity. Therefore, managerial quality is reflected in measures such as the firm’s market to book value and price to earnings ratios. Thus, Raj and Forsyth (2003) separate and examine bidding firms that are likely to have hubris management. Specifically, they find evidence of hubris within bidding firms that have successful performance before the takeover, and examine the impact of hubris on the shareholders. The market-to-book and price-to-earnings ratios are used to identify firms that are successful compared to that of other firms within the same industry. High bid premiums are used as a proxy to identify a hubris management. The study finds that hubris bidders are associated with significant negative returns around the announcement of a takeover. Also the study shows that the average bid premium is 57% for the hubris sample compared with 38% in the control sample. They

40 Cited in Hietala et al. (2000, pp. 2-3).
conclude that the over-estimation of synergistic benefits, the arrogance of the management, and the resulting high premium paid lead to an adverse market reaction.

However, it is suggested that there are at least two explanations of why bidding firms' managers overpay in takeovers. According to Roll's (1986) hubris hypothesis, managers of bidding firms are infected with hubris and try to maximise value but overestimate the magnitude of takeover gains thus, unintentionally pay too much\textsuperscript{41} for target firms because they overrate their ability to run these firms. It is argued that the hubris hypothesis is advanced as an explanation for corporate takeovers, and hubris on the part of individual decision-makers in bidding firms can explain why bids are made even when a valuation above the current market price which represents a positive valuation error. If there are no gains at all in takeovers, why will firms make bids? Roll (1986, p. 199) explains that the bidding firms should realise that any bid above the market price indicates an error because market prices reflect rational behaviour. Nevertheless, prices are averages and no evidence specifies that every individual performs rationally and their behaviour revealed by market prices. The market occupied by rationality is observationally the same as a market characterised by irrationality that cancels out in the aggregate. Takeovers reflect individual decisions thus, irrational behaviour is independence across individuals which disappears from aggregated view. This is consistent with the perspective of Cyert and March (1963), Hayward and Hambrick (1997) and March and Simon (1958). Furthermore, it is suggested that an individual bidder may convince himself that the assessment is true and the market does not reflect the full economic value of the merged firm. In this case, then, the takeover undertaken depends on the haughty presumption of bidders that their valuations are correct. However, as previously discussed, Roll (1986, p. 200) argues that even though gains exist for some corporate takeovers, at least part of the average observed takeover premium is still caused by valuation error and hubris, and the distribution of these valuations is truncated by the current market price on the left tail.

The hypothesis predicts that around the time of a takeover,

- The combined value of the target and bidding firms should fall slightly.

\textsuperscript{41}Takeover premium is tender offer or merger price less pre-announcement market price of the target firm. The takeover premium reflects a random error or a mistake made by the bidding firm (Roll, 1986, p. 198).
• The value of the bidding firm should decrease, and
• The value of the target firm should increase.

If there are absolutely no gains available to corporate takeovers, the hubris hypothesis implies that the average increase in the target firm’s value is more than offset by the average decrease in the value of the bidding firm. Takeover value is aggregate net loss. The market price of a target firm should increase when a previously unanticipated bid is announced, and it should decline to the original level or below if the first bid is unsuccessful and if no bids are occurred later. This is strongly supported by historical studies, for example, Bradley, Desai, and Kim (1983) who suggest that target firm’s value increases on the announcement of a tender offer, and it falls back to about the original level if no combination occurs then or later; Asquith (1983) suggests that the firms are targets in one or more merger bids that are later abandoned or unsuccessful and for whom no additional merger bids occurred during the year after the last original bid is withdrawn or unsuccessful. The original merger bid announcement increases target firm value. By the time the last bid is unsuccessful, the target’s price declines slightly more than offsetting the original increase. In short, target firm prices consistently display large increase, but only if the initial bid or a later bid is successful. There is no permanent increased value for target firms that do not eventually enter a corporate combination. Bidding firms show a price change after the announcement of a successful bid (either merger or tender offer) which is almost uniformly negative (Jensen & Ruback, 1983, p. 21) and is relatively large in magnitude (Roll, 1986, p. 212). For the total gains, the central prediction of the hubris hypothesis is that the total combined takeover gains for the target and bidding firms’ shareholders are non-positive.

Finally, Roll (1986, p. 212) notes that the hubris hypothesis is very simple: decision makers in bidding firms, on average, pay too much for target firms. In addition, there are no readily available results to present really persuasive evidence against the hubris hypothesis that all markets are operating perfectly efficient, and that individual bidders occasionally make mistakes. Even though bidders indicated by their actions a belief in the existence of takeover abnormal returns, little evidence from the studies shows that such beliefs are well founded.

4.2.3 Studies of the Agency Motive
Another view of overpayment is that managers of bidding firms maximise personal objectives other than maximisation of shareholder wealth (Morck, Shleifer, & Vishny, 1990). This also can be viewed as agency or managerial objectives for takeovers as earlier described in the agency motive. It is suggested that when a firm makes a takeover, its manager considers both his personal benefits from the investment and the consequences for the market value of the firm. When an investment provides principally large personal benefits for a manager, he is willing to forgo the market value of the firm to pursue that investment. Therefore, to serve this objective, managers of bidding firms are willing to pay more for target firms than they are worth to the bidding firm's shareholders. Morck et al. (1990) try to find out which acquisitions are bad investments for bidding firm's shareholders and determine whether those acquisitions appear to provide private benefits to bidding managers. The methodology is designed to examine the hypothesised negative relation between the managerial benefits of a takeover and its consequences for the market value of the bidding firm. Specifically, they focus on two aspects of acquisition strategies that can be understood in terms of managerial objectives: buying growth and diversification. Also, the relationship between bidders' past performance and their returns from takeovers is investigated. This indicates the bidding firm managers' motives for takeovers. The evidence shows that the returns to bidding firm's shareholders are lower when their firms have unrelated diversification, when the bidder buys a rapidly growing target, and when its managers performed poorly before the acquisition. The findings are consistent with Lang, Stulz, and Walkling (1989) that firms with better managers are also better acquirers, but inconsistent with Roll's hypothesis that managers of better performing firms are more arrogant and therefore overestimate the target's value. It is concluded that managerial objectives drive acquisitions that reduce bidding firm's values.

Seyhun (1990) provides a test of conflict-of-interest hypothesis by examining the stock transactions of top managers of bidding firms for their personal accounts to indicate their motivations for takeovers. It is argued that managerial trading is expected to be a reliable indicator of managerial intentions or motivations for engaging in takeovers, and this cannot be obtained from an estimation of share price alone. The findings show that, before takeover announcements, top managers increase their net purchase rather than sales. Also, they purchase more shares when the share price reaction to the takeover announcement is large and positive than when it is large and
negative. This evidence does not support the hypothesis that bidding firms’ managers knowingly pay too much for target firms, or conflict of interest is not a primary motive for corporate takeovers. At the same time, hubris is not a rationale for corporate takeovers either.

According to the finding summary of 13 studies, this provides evidence that there are eight from 13 studies suggest that the findings are consistent with hubris, however three of them (Firth, 1980; Hietala, Kaplan, & Robinson, 2000; Varaiya, 1986) also find agency or managerial objectives induce the takeovers. Two from thirteen studies clearly show the evidence that agency is the main motive for takeovers, and the remaining: each study demonstrates either the synergy or mark-up pricing or not agency motive influences the takeovers.

4.3 METHODS OF TAKEOVER MOTIVE INVESTIGATION

Several previous studies investigate the motives behind takeovers by looking at average abnormal returns such as Akbulut and Matsusaka (2003), Bradley, Desai, and Kim (1988), Gregory (1997), Malatesta (1983), Matsusaka (1993), Roll (1986) and Lang, Stulz and Walkling (1989). Some studies examine rationales for takeovers by using stock prices and accounting data and measure stock returns and operating returns such as Agrawal and Jaffe (2002) and Matsusaka (1993); stock returns, sales growth, and income growth such as Morck, Shleifer, and Vishny (1990); stock returns and operating cash flow returns on assets such as Healey, Palepu, and Ruback (1992); profits and sales such as Gugler, Mueller, Yurtoglu, and Zulehner (2002). Also, some other studies investigate the performance by regression correlation such as Bervovitch and Narayanan (1993), Firth (1980), Goergen and Renneboog (2002), Gondhalekar and Bhagwat (2000), Gupta, LeCompte, and Misra (1997) and Seth, Song, and Pettit (2000).

Specifically, in addition to using average gains to target and/or bidding firms to indicate the motives for takeovers such as Akbulut and Matsusaka (2003), Asquith (1983), Bradley (1980), Bradley, Desai, and Kim (1982), Bradley, Desai, and Kim (1983), Dodd (1980), Dodd and Ruback (1977), Jensen and Ruback (1983), Mandelker (1974) and Roll (1986), or even using matched pairs of target and bidding firms such as
Bradley, Desai, and Kim (1988), Malatesta (1983) and Seth (1990b), even some different ideas from those of the previous studies, such as Leeth and Borg (2000), Matsusaka (1993) and Seth, Song, and Pettit (2000) to indicate the motives of takeovers, other different methodologies are also developed and applied in more recent studies.

However, most of the historical studies are discussed in the previous section already. Therefore, only recent studies that employ methodologies different from historical studies are presented in the following section.

4.3.1 Analyses of the Synergy Motive

Seth (1990b) suggests that even though the event study methodology is the basis for estimating synergistic gains, it is inappropriate to apply this technique in its traditional form which involves measuring abnormal returns to target and bidding firms separately. Each pair of event firms regarded as a single entity before and after the takeovers should be considered for the unit of analysis for examining the value creation in takeovers. It is proposed that value can be created by the combination of two firms either by strategic changes are made in the operations of the combined entity or by new operating decisions or new financing decisions, or just by a combination of the above as a consequence of financial diversification. Thus, she applies a two-tiered approach to examine the sources of value creation in takeovers: the first, partitions the value creation from changes in operating or financing decisions versus from financial diversification, and second, cross-sectional multiple regression analysis is conducted in order to differentiate between value creation from changes in operating decisions and from changes in financing decisions.

Berkovitch and Narayanan (1993, p. 347) emphasise that previous evidence is unable to clearly differentiate amongst the three motives: synergy, agency and hubris due to the simultaneous existence of all three motives in any sample of takeovers. Moreover, they assert that the motives of the bidding firm’s management cannot be ascertained from an examination of the average gains to the target and/or bidding firms solely. They suggest that this problem can be resolved by investigating the relation between target and total gains, and between target and bidder gains instead of depending
on average gains as in the previous studies. Thus, Berkovitch and Narayanan (1993) derive implications of the takeover motives to the correlations between target and total gains and between target and bidder gains (this was previously described in the introduction of takeover motives in the beginning of this chapter). Consequently, later studies follow Berkovitch and Narayanan’s (1993) methodology to distinguish amongst three motives in takeover examination, as in the example of these studies provided earlier.

Apart from applying the Berkovitch and Narayanan’s (1993) methodology for takeover motive assessment, however, for the hubris motive test, Gondhalekar and Bhagwat (2000) use the methodology based on Varaiya (1986). This method suggests that the larger the dispersion in the bidders’ assessment of gains from takeover a target, the larger will be the separation between a bidder’s assessment of gains from takeover that target and that of the closest competitor. Also, the other used method is based on Giliberto and Varaiya (1989) which emphasise that the larger the dispersion in the bidders’ assessment of gains from takeover a target, the larger will be the overpayment by the bidding firm. This is the takeover premium, in other words. This means they also investigate the cross-sectional relationship between the overpayment in takeovers and the dispersion in the prospective bidders’ estimates of takeover gains. Then, Gondhalekar and Bhagwat (2000) assume that the abnormal returns of bidding firms at the takeover announcement will have an inverse relationship with the overpayment by the bidding firms. It is suggested that the larger the targets’ standard deviation of market-adjusted returns before the takeover announcements, the larger will be the dispersion in the bidders’ assessments of takeover gains from takeover the targets. Thus, Gondhalekar and Bhagwat (2000) conclude that in hubris motivated takeovers, the abnormal returns of bidding firms at the announcement of takeovers would have an inverse relationship with the targets’ standard deviation of returns.

Seth, Song, and Pettit (2000) describe the approach that they use for investigation of takeover motives that involves basically, applying two kinds of tests: 1) examining the average gains to target and bidding firms and the total gains to the pair of combining firms, and also the proportion of takeovers in the sample with positive total gains (the same methods used in historical studies by Bradley, Desai, & Kim, 1988; Malatesta, 1983; Roll, 1986), and 2) examine the correlation between the gains to the
target and total gains to the combined firm, and between gains to the target and bidding firms (applying the same method as Berkovitch & Narayanan’s (1993) method). The results are very similar to those reported by Bradley et al. (1988) and Berkovitch and Narayanan (1993). It is concluded that synergy is the motive for takeovers.

The standard perception suggests that since the anticipated benefits from the combination of two or more stand-alone firms involve increments in value, the value of a diversified firm should increase. Balmaceda (2003) argues that this idea ignores the fact that the three main takeover motives: synergy, agency, and hubris can inter-twine in complex ways that result in a non-monotonic relationship between synergies and firm’s value. Thus, the above mentioned explanations fail to explain diversification. Then, Balmaceda (2003) models a firm composed of an owner, a CEO and one or two division managers depending on whether a focused or a diversified strategy is pursued. He finds that, assuming the absence of empire-building preferences, a non-monotonic relationship arises when the conflicts of interest between owners and the CEO are rigorous. It is suggested that diversified firms experience discounts of the result of synergies being sufficiently large and synergies provide the CEO with incentives to implement projects that are different from the projects that maximise firm’s value. That is synergies can decrease firm’s value because the CEO is more likely to take actions that increase his utility but not firm’s value. In addition, it is argued that Matsusaka (2001) is complement to his study because it is not based on agency conflicts and forecasts the validity in the other way.

Bhagat, Dong, Hirshleifer, and Noah (2004) argue that the issue of whether tender offers increase or decrease combined average target and bidding firms’ value has remained unsolved. At the same time, the conventional event study approach is subject to two important estimation problems. The first problem is truncation which arises if an announcement of the event is successful. Studies use short-windows that measure only a part of the value effect of successful transaction, or use long-windows that introduce severe noise and benchmark errors. The second problem is that event-related returns are infected with a bidding firm revelation bias, also suggested in Fuller, Netter, and Stegemoller (2002, p. 1768), amongst others (such studies as Bradley, Desai, & Kim, 1983; Jensen & Ruback, 1983; Jovanovic & Braguinsky, 2002; Roll, 1986). Therefore, the study by Bhagat et al. (2004) estimates whether and by how much tender offers are
perceived by investors by developing the probability scaling method which rescales short-window announcement period returns; and the intervention method which uses returns associated with intervening events to estimate value improvements from tender offers. In comparison, applying the traditional method and Bhagat et al’s methods to a sample, the findings show that even though the conventional method provides evidence that bidding firms on average overpay, the new methods indicate that bidding firms on average pay fair prices for targets. The findings are the same as those of Bhagat and Hirshleifer (1996). However, it is noted (p. 36) that these new methods can also potentially be applied to other corporate activities that are announced but are not always carried through such as acquisition programs and many others.

In conclusion, according to the summary of six studies concentrate more on synergy motive investigations that use different methodologies from those of the historical studies, it is suggested that there are problems with the methodologies applied in the past studies otherwise, the findings are mixed or unclear. Hence, the more recent research proposes some other techniques. At the same time, according to the summary of seven methodologies employed in these six mentioned studies (two methodologies, Giliberto & Varaiya, 1989; Varaiya, 1986), for hubris investigations are discussed in the following section), it seems that the previous weak points are referred as the reasons for developing and/or applying the different methods in their studies.

4.3.2 Analyses of the Hubris Motive

Firth (1980) analyses the impact on shareholder returns and the benefits to management by using stock prices and accounting data for the measurement. It is argued that measuring the movement of share prices around the announcement gives a direct measure of the increase or decrease in shareholder wealth. Therefore, this method is employed. Abnormal returns and cumulated abnormal returns to target and bidding firms are computed, combined value of pair of event firms are also calculated then, the regression coefficient between the premium offered and the losses suffered by the bidding firm is resulted. The regression analyses are carried out on remuneration and assets; and abnormal returns and remuneration. Hence, Firth (1980) apparently uses both the historical method as used by Bradley, Desai, and Kim (1988), amongst others
and the regression analysis method as used by Berkovitch and Narayanan (1993), amongst others.

Varaiya (1986) distinguishes amongst the three takeover motives by measurement bidder abnormal returns and total dollar takeover gains (the sum of the dollar gains to both bidder and target in an acquisition). To distinguish between the agency and hubris hypotheses, he develops a bidding model based on the existence of random valuation errors to predict the takeover bid premium (the same idea as Roll, 1986, p. 199 which states that the takeover premium in such a case is simply a random error, a mistake made by the bidding firm) or the winning bidder’s expected bid premium.

Malatesta (1983) applies the cumulative abnormal dollar return measure, the returns to target firms, bidding firms, and valued weighted combined value of paired event-firms are computed. However, it is suggested that to facilitate comparisons with other studies, abnormal rate of returns are also computed.

Matsusaka (1993) uses dollar return and cumulated abnormal rate of returns from a market model weighted by the value of the firm (follows Malatesta, 1983, and calculated combined value in the same way as Malatesta, 1983; Bradley, Desai, & Kim, 1988). However, even though Matsusaka’s (1993) methods are concentrated on the dollar return, the percentage return and the investment return are also measured and all three measures result in the same outcomes.

Varaiya and Ferris (1987) prove the prediction by measuring the successful bidder overpaid for a given target firm. It is the difference between the observed winning bid premium and the market estimate of the maximum offer premium.

Giliberto and Varaiya (1989) test two predictions: the relationship between the expected optional bid of any bidder and the number of competing bidders as predicted by the winner’s curse model; and the relationship between the expected winning bid and
the number of competing bidders as predicted by alternative auction models. The test based on observed bids instead of abnormal returns.

Hayward and Hambrick (1997) emphasise the impact of primary sources of CEO hubris on takeover premium⁴²: recent organisational success, recent media praise for the CEO, and the CEO’s self-importance; and also examine the implications of hubris for firm performance by following past research that is investigating the cumulative abnormal returns (CARs).

Schwert (1996) examines the stock returns to the bidding firms to differentiate between the mark-up pricing and hubris hypotheses. If the bidding firm offers too much for the target firm, the bidder’s stock price should drop.

Hietala, Kaplan, and Robinson (2000) propose the idea that it is possible to use target and bidder stock prices to obtain market estimates of overpayment. Thus, they use the link between present stock prices and expected future cash flows to set up a structure for inferring different sources of value change.

Raj and Forsyth (2003) use MV (Market Value) and P/E (Price Earning Ratios) to identify successful bidding firms before takeovers and use high bid premium as a proxy to identify a hubris management.

Roll (1986) investigates the takeover motives by looking at average gains as other historical studies as earlier mentioned. He examines the average abnormal returns to the target and bidding firms, separately, and the combined value of the target and bidding firms. In other words, the study estimates whether the returns are positive or negative.

4.3.3 Analyses of the Agency Motive

⁴² The takeover premium is the purchase price minus the pre-takeover price, divided by the pre-takeover price (Hayward & Hambrick, 1997, p. 112).
Morck, Shleifer, and Vishny (1990) focus on two aspects of diversified strategies that can explain manager objectives: buying growth and unrelated diversification, and the relationship between bidding firms’ previous performance and their returns.

Seyhun (1990) examines the stock transactions of the top management of bidding firms and their personal accounts as signals about their motives for takeovers by analysing stock selling and purchasing on their part.

In conclusion, the methodologies are applied in the previous discussion of thirteen studies which concentrate more on hubris and agency motive investigations can be classified into six categories of similar methodologies as follows:

1. Firth’s (1980) methodologies are very similar to those of Morck, Shleifer, and Vishny (1990) in the sense of using both stock price data and accounting data, and also in the application of regression analysis. However, Morck et al. (1990) places more emphasis on managerial objectives in terms of overpayment for takeover investigation purposes.

2. Varaiya’s (1986) methodologies are very similar to those of Malatesta (1983) and Matsusaka (1993). Even though Matsusaka (1993) follows Malatesta’s (1983) methods, he uses regression analysis in bidder returns investigation while Malatesta (1983) uses historical way by looking at the sign of the returns whether they are positive or negative.

3. Varaiya and Ferris’ (1987) methodologies are very similar to those of Varaiya (1986), in part of using bidding model, and Giliberto and Varaiya (1989), Hietala, Kaplan, and Robinson (2000) and Raj and Forsyth (2003), in the sense of competitive bids. However, the methodology implementation differs in details.

4. Roll’s (1986) and Schwert’s (1996) methodologies are historical studies methodologies which involve measuring average abnormal returns to target, bidding
firms, and the total gains of the target and bidding firms. However, Roll (1986) uses stock price data meanwhile Schwert (1996) uses accounting data.

5. Hayward and Hambrick's (1997) methodologies are similar to those of No.3 in the sense of measuring the takeover premium. However, their study is not competitive bid and it more focuses on the effects of key sources of CEO hubris on takeover premium.

6. Seyhun's (1990) methodologies that measure the stock transactions of top management of bidding firms thus, they substantially differ from the methodologies of other studies.

In conclusion, according to the summary of past studies that are demonstrated in the previous sections of this chapter, nearly half of them present the three main takeover motive theories: synergy, agency, and hubris, some of them propose their individual theories which have not much difference from the three main motives. Therefore, most of the previously explained theories are very closely related especially with the three main takeover motives. When considering the methodologies employed for the motive investigations in these studies, some of them have either the same or different ways of applying their research methods. Many studies have much broader examinations in which the three main motives are the primary motives investigated, yet at the same time, some studies only focus on the synergy, agency or the hubris motive which they regard as being more likely to be the takeover motive. Consequently, for studies only emphasising on synergy investigations, most historical studies and many past studies use average gains to target firms, bidding firms, and total gains as the main methodologies, but more recent studies use different methodologies such as correlation analysis, or a combination of two of the previously mentioned methods, and the proposed individual methodologies. However, for studies emphasising the agency motive or hubris investigations, more varieties of methodologies are employed, as previously shown in the six similar methodologies categories. Meanwhile, more recent studies look at different rationales for takeover decision investigations which may be in line with or partly similar to, or related with the three main motives: synergy, agency, and hubris for takeovers. These include studies such as Bouwman, Fuller, and Nain.
(2003), Ghosh (2002) and Rosen (2003). At least, these mentioned studies result in outcomes which are related to those of the three main motive takeover investigations in either direct or indirect ways. Bouwman et al. (2003), Dong, Hirshleifer, Richardson, and Teoh (2003), Rhodes-Kropf, et al. (forthcoming) and Rosen (2003), are examples.

Investigating the motives behind takeovers is very interesting and this cannot be ignored especially for this Thai event study, especially given the relative lack of research findings compared to those of developed stock market studies as discussed earlier. As previously shown, there have been several fascinating methodologies applied in takeover motivation examinations. Various studies intend to examine why takeovers are undertaken or what is the prime reason for takeovers. Even though Berkovitch and Narayanan’s (1993) methodologies are widely used in many recent studies due to theirs being a favoured method or even if Morck, Shleifer, and Vishny (1990) methodologies are attractive for agency motive investigations. For this thesis, there is a limitation on the adoption of the above mentioned methods: namely Berkovitch and Narayanan’s (1993) and Morck et al’s (1990) methodologies. This is mainly because of having few pairs of event firms. Only five pairs of target and bidding firms, and four targets and four consortia (6 bidders) were simultaneous listed companies at the time of the takeover announcements, according to the takeover statistics available between 1992 and 2002. Therefore, it is not worthy of study in terms of precise and explainable potential results. However, avoid to investigate the rationale for takeovers will result in this study being an incomplete research effort. Thus, distinguishing the takeover motives by looking at average gains as in many previous studies using alternative methodologies was the more practical and suitable way forward for this study. Consistently, Chevalier (2000) points out that one needs to look at the total gains (average target and bidder returns) to assess whether diversification creates or destroys value. As earlier mentioned, these methods have been mostly used in various historical studies and several later studies either in case of separating measuring abnormal returns to target and/or bidding firms or the total gains of target and bidding firms. For example, by Bradley (1980), Bradley, Desai, and Kim (1982), Dodd (1980), Dodd and Ruback (1977), Jensen and Ruback (1983) and Mandelker (1974), and the recent study by Akbulut and Matsusaka (2003), amongst others. Specifically, in this thesis, apart from the previously mentioned principal methods, used to investigate the hubris motive, Roll’s (1986) methodologies were also the choice. Even though Hietala Kaplan, and
Robinson (2000) methodologies (or similarly, Giliberto & Varaiya, 1989; Raj & Forsyth, 2003; Varaiya, 1986; Varaiya & Ferris, 1987) are interesting ways of investigating a takeover contest or competitive bid, this thesis also experiences the data limitation of having very few cases of competitive bids. Thus, this research used Roll's (1986) methodologies and applied methods that look at target firm's abnormal returns, bidding firm's abnormal returns, and total abnormal returns, assessing whether they are positive or negative. The total gains were computed by simple calculation as the target's gains plus bidder's gains.

In addition, according to Roll's (1986, p. 202) suggestion that Bradley, Desai, and Kim's (1983) and Asquith's (1983) studies have more straightforward implications for the hubris hypothesis, to benefit the robust findings, these methods were also adopted. That is unsuccessful target firms were investigated as the studies by Bradley et al. (1983) and Asquith (1983), only two unsuccessful target firms are included in the sample. Also, successful bidding firms were examined as the study by Asquith (1983), 39 successful bidding firms are included in the sample. Finally, the results are presented in the following chapter, Chapter 6.
CHAPTER 5
RESULTS OF THE BID AND PRE-BID PERIODS

This chapter presents the results of the empirical analyses of the market and market-adjusted (zero-one) model investigations for the bid and pre-bid periods, (-12,+12) and (-12,-1), and for the target and bidding firms. Explicitly, the results include the performances of the total target and bidding firms, both successful and unsuccessful target and bidding firms, presented in the aspects of separate studies and for comparison the results between two of these studies are compared. The results are shown and explained in terms of the performances of the average abnormal returns (AARs), cumulative average abnormal returns (CAARs). Meanwhile, another return measurement, the buy-and-hold average abnormal returns (ABHARs) is used and the results from this, particularly in the aspects of a comparison between the performances of the CAARs and ABHARs of the target and bidding firms are presented in the next chapter. The main issues are the size and signs of these abnormal returns and whether or not they are significantly different from zero. The first section discusses the results of the AARs and CAARs of the market and market-adjusted (zero-one) model analyses for target firm’s bid period investigations and the other results are discussed in the remaining sections of the chapter.

5.1 RESULTS OF THE MARKET AND MARKET-ADJUSTED (ZERO-ONE) MODEL ANALYSES FOR THE BID PERIOD

5.1.1 Results of the Analyses of Target and Bidding Firms

5.1.1.1 Overall Average Abnormal Returns (AARs) and Cumulative Average Abnormal Returns (CAARs)

The event study method uses the error term derived from taking the difference between the observed return and the return predicted from the various models of the return setting process. These are calculated over a period of time around the takeover announcement to measure the cumulative abnormal returns (CARs) or the full effect of
the takeover as they are capitalised into share price returns. However, the market’s expectations of the effects of the takeovers are modified as news of the takeovers become impounded into prices around the period of the takeover announcements. Also, since this information is impounded into share prices at different times for different firms, it is necessary to accumulate the abnormal returns over the period during which news relating to takeovers is released (Dodd & Officer, 1987). Therefore, in the following analyses of the results, in addition to an analysis of the average abnormal returns (AARs), due to their correlations with the significance tests for the total standardised abnormal returns (TSRs) and the average event-period standardised abnormal returns (ASRs), other analytical results are also presented. The major one being the cumulative average abnormal returns (CAARs) which are used for the measurement of the effects of the takeovers on the target and bidding firms’ shareholders.

5.1.1.1 Target firm abnormal returns (bid period)

Tables 1 and 2 demonstrate the monthly abnormal returns for the tender offers occurring from 1992-2002. The expected returns for the target firm’s shareholders for the bid period (-12, +12) were measured by means of the market and zero-one models respectively. The monthly abnormal returns for the target firm’s shareholders from 12 months before the event month until 12 months after the event month were estimated. Also, the cumulative abnormal returns for each month for the target firm’s shareholders from 12 months before the event month until 12 months after the event month were calculated. Tables 3 and 4 present cross-sectional total and average monthly standardised abnormal returns estimated from the market and zero-one models respectively for the bid period (-12,+12) for the tender offers occurring from 1992-2002. The results show that in the takeover announcement month (month 0), the monthly AARs estimated from the market model are significantly positive at 13.70%. Accordingly, the CAARs over the period (-12,0), starting twelve months before and including the event month, are positive at 30.80%. Table 5 shows that in month 0, the percentages of stocks with positive monthly AARs and CAARs are 65.38% and 67.31% respectively, as compared with the average percentages of 49.00 % and 58.46 % respectively. There are also significant positive monthly AARs immediately around the takeover announcement month, or during the period (-1,+1). Table 5 reveals a
consistently high percentage of stocks with positive monthly AARs during the period (-1+1), or an average of 62.82%. Moreover, the CAARs over the period (-1,+1) are positive up to 31% compared with the CAARs over the period (-12,+12) of 40.70%. Thus, the effect of takeovers on the wealth of the target firm's shareholders is positive in the announcement and immediately around the announcement month.

Before month 0, there is evidence that news of the takeover is becoming available to the market, starting in month -2, at least, resulting in positive abnormal returns for the target firm's shareholders of 13.10%. The largest positive monthly AARs for the target firm's shareholders of 10.50% occur in month -1. Accordingly, the CAARs over the period (-12,-1) or in month -1 are positive at 17.0% which account for 55.19% of the positive CAARs over the period (-12,0) of 30.80%. Therefore, this can be explained by Firth's (1980) suggestion that the returns reflect the leakage of takeover news otherwise, it might represent the building up of a pre-takeover share holding by the bidding firms. Also, it is suggested that the takeover announcement is anticipated, probably as a result of rumours or insider trading (Goergen & Renneboog, 2002, p. 8). Thus, it can be concluded that the market responds to the takeover news as being potentially good news prior to the takeover announcement month.

Subsequent to month 0, the CAARs over (+1,+12) are positive at 9.90%. One explanation offered by Akbulut and Matsusaka (2003) is that diversification announcements convey primarily bad news about the acquirer and little news about the target, meaning that the announcement returns are if anything downward-biased estimates of the value created by takeovers. The CAARs over the period (-12,+12) are significantly substantial positive at 40.70% (see Appendix B, Table B1). Between the period (-12,-1) and (-12,+12), the CAARs for the target firm's shareholders increase 23.70% from 17% to 40.70%. Thus, the results are consistent with prior studies, if of a

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43 While some commentators argue that price run-up before the formal announcements of tender offers indicates the presence of illegal insider trading, the Office of the Chief Economist (OCE) (cited in Jarrell, Brickley, and Netter, 1988, p. 53) provides evidence that the legal market for information can explain much of the run-up. The OCE shows that a significant portion of the run-up can be explained by three readily identifiable influences on pre-bid trading: media speculation, the bidder's foothold acquisition in the target, and whether the bid is friendly or hostile. Systematic relations between these factors and run-up in target share prices indicate that there is an active market for information about impending takeover bids and a large portion of the run-up can be explained by factors other than illegal insider trading. The results are also supported by Comment (1986).
different magnitude, and suggest the positive impact of takeovers on the wealth of target firm's shareholders after the announcement month.

For further comparison and analysis, Tables 2 and 4 show that in month 0, the monthly AARs estimated from the zero-one model are significantly positive at 12.80% which are close to the 13.70% estimated from the market model. The CAARs over the period (-12, 0) are positive at 31.10% compared with 30.80% estimated from the market model. Table 5 shows that the percentage of stocks with positive monthly AARs is 65.38% which is the same as that estimated from the market model, compared with the average percentage 50.23%, and the percentage of stocks with positive CAARs is 71.15% compared with the average of 58.77% and compared with 67.31% estimated from the market model. In addition, there are significant positive monthly AARs during the period (-1, +1). Also, Table 5 presents the high percentage of stocks with positive monthly AARs during the period (-1, +1), or an average of 63.46%. Furthermore, the CAARs over the period (-1, +1) are positive at 27.50% compared with 31% estimated from the market model. Like the market model, the results indicate that the target firm's shareholders gain positive substantial abnormal returns immediately around the takeover announcement month. The market responds to the takeover news in month -2, at least. The monthly AARs in month -2 are significantly positive at 4.50% compared with 2.60% estimated from the market model, resulting in positive abnormal returns for target firm's shareholders of 14.40% compared with 13.10% estimated from the market model. The largest positive monthly AARs for the target firm's shareholders of 9.90% occur in month -1 compared with 10.50% estimated from the market model. Accordingly, the CAARs over the period (-12, -1) are positive at 18.30% compared with 17.0%, which account for 58.84% compared with 55.19% of the positive CAARs over the period (-12, 0) of 31.10% compared with 30.80%, estimated from the zero-one model compared with the market model respectively. Subsequent to month 0, the CAARs over the period (+1, +12) are positive at 16% compared with 9.90% estimated from the market model. The CAARs over the period (-12, +12) are significantly positive at 47% which are in line with the significant positive CAARs of 40.70% estimated from the market model. Between the period (-12, -1) and (-12, +12), the CAARs for the target firm's shareholders increase 28.70% from 18.30% to 47%. This parallels the increases of 23.70% from 17% to 40.70% estimated from the market model.
In conclusion, the results from both models show the same pattern. The monthly AARs in month 0 are positive at approximately 12.80% estimated from the zero-one model and 13.70% estimated from the market model; and the CAARs average 30.80% when estimated from the market model and 31.10% from the zero-one model. Therefore, the takeover wealth effects are remarkably similar to those of past studies which reveal the returns for the target firm’s shareholders are on average significant and positive in the range of 20-30%, as previously summarised in chapter 1. There is evidence that the market reacts to the takeover news two months, at least, before the announcement, leading to positive abnormal returns for the target firm’s shareholders. The largest positive monthly AARs occur in month -1 at about 9.90% and 10.50%, which account for 54.10% and 61.76% of the CAARs over the period (-12, -1) which are positive at 18.30% and 17%, estimated from the zero-one and market models respectively. Subsequent to month 0, the CAARs over the period (+1, +12) and (-12, +12) are positive at 9.90% and 16%; and significantly positive at 40.70% and 47%, when estimated from the market and zero-one models respectively. Between the period (-12, -1) and (-12, +12), the CAARs for the target firm’s shareholders increase by approximately 23.70% estimated from the market model and 28.70% estimated from the zero-one model. Therefore the takeover effect on the wealth of the target firm’s shareholders is substantially positive in each time period, before the announcement, at the announcement, and after the announcement month, and the target firm’s shareholders gain substantial positive abnormal returns immediately around the takeover announcement month.

5.1.1.1.2 Bidding firm abnormal returns (bid period)

Tables 1 and 2 present the monthly abnormal returns for those tender offers occurring from 1992-2002. The expected returns for the bidding firm’s shareholders for the bid period (-12, +12) were measured by means of the market and zero-one models respectively. The monthly abnormal returns for the bidding firm’s shareholders from 12 months before the event month until 12 months after the event month were calculated. Also, the cumulative abnormal returns for each month for the bidding firm’s shareholders from 12 months before the event month until 12 months after the event month were estimated. Tables 3 and 4 present cross-sectional total and average monthly standardised abnormal returns estimated from the market and zero-one models.
respectively for the bid period (-12, +12) for the tender offers occurring from 1992-2002. The results show that, in month 0, the monthly AARs are insignificantly negative at -1.90%. The CAARs over the period (-12,0), starting twelve months prior to and including the event month, are negative at -0.90%. Accordingly, Table 5 shows that in month 0, the percentages of stocks with negative monthly AARs and CAARs are 66.67% and 54.76% respectively, compared with the average percentage 61.05% and 59.52% respectively. Thus, this explains that the stock market considers takeovers to be expensive for the bidding firms or likely potential gains are more than outweighed by the likely associated costs (Firth, 1980). In addition, the results are consistent with past studies reporting that the bidding firm's shareholders experience negative returns varying between less than 1 and -7%, as earlier summarised in chapter 1.

Prior to month 0, the monthly AARs for the bidding firm's shareholders are negative during the period (-12,-1), but most are insignificantly different from zero. There is evidence that the takeover news leaks into the market, starting in month -3, at least, resulting in positive abnormal returns for the bidding firm's shareholders of 7.80%, an average 2.60% per month. The CAARs over the period (-12,-1) or in month -1 are positive at 1%.

Subsequent to month 0, the monthly AARs for the bidding firm's shareholders settle down in that the losses in month 0 have been sustained for nearly all of the twelve months later or over the period (+1,+12). The CAARs for each month also behave in a similar pattern to the monthly AARs. As a result, the CAARs over the period (+1,+12) are negative at -27.90%. The CAARs over the period (+1,+6) are negative at -16.90% and the CAARs over the period (-12,+12) are negative up to -28.80%. Between the period (-12,-1) and (-12,+12), the CAARs for the bidding firm's shareholders decrease 29.80% from 1% to -28.80%. This indicates that after month 0, the takeover announcement results in negative abnormal returns for the bidding firm's shareholders.

For further comparison and analysis, Tables 2 and 4 show that in month 0, the monthly AARs estimated from the zero-one model are negative at -0.60% which are close to the -1.90% estimated from the market model. The CAARs over the period (-12,0) are positive at 26.40% compared with -0.90% estimated from the market model.
Table 5 shows that the percentage of stocks with negative AARs is 59.52% compared with the average percentage of 52.67%, and compared with the 66.67% estimated from the market model, and the percentage of stocks with positive CAARs is 71.43% compared with the average percentage 62.19%, and compared with that of stocks with negative CAARs of 54.76% estimated from the market model. Like the market model, there is evidence that the market reflects the takeover news as likely good news before the announcement month. The monthly AARs are significantly positive and sustainable, starting in month -4, at least, indicating the leakage of the potential takeover announcement in the market one month earlier than that estimated from the market model. Consequently, the CAARs over the period (-4,-1) are positive at 16%, or an average of 4% per month, compared with those over the period (-3,-1) of 7.80%, or an average 2.60% per month estimated from the market model. The CAARs over the period (-12,-1) are positive at 27% compared with 1% estimated from the market model. After month 0, the CAARs over (+1,+12) are negative at -8.10% compared with the negative measures of -27.90% estimated from the market model. Similar to the results estimated from the market model, there are significant negative monthly AARs for the bidding firm’s shareholders in month +5, +6 (see Tables 2 and 4), and the CAARs over the period (+1,+6) are negative at -11% compared with negative -16.90% as estimated from the market model. However, the CAARs over the period (-12,+12) are positive at 18.30% compared with negative values up to -28.80% estimated from the market model. These further positive CAARs after month 0 indicate that there is a clear strategy open for investors to invest in firms that takeover other firms for gaining abnormal returns (Dodd and Officer, 1987, p. 365). Between the period (-12,-1) and (-12,+12), the CAARs decrease 8.70% from 27% to 18.30%. This parallels the decreases of 29.80% from 1% to -28.80% estimated from the market model. It may be explained that the stock market’s initial reaction to the implications of takeover announcements for the successful takeovers is corrected (Malatesta, 1983).

In conclusion, the bidding firm’s shareholders gain significant positive monthly AARs before month 0 but insignificant negative monthly AARs in month 0, showing values of -0.60% estimated from the zero-one model and -1.90% estimated from the market model. The CAARs are negative at -0.90% estimated from the market model and positive at 26.40% estimated from the zero-one model. Thus, the takeover announcement initially increases and then decreases the wealth gains for the bidding
firm's shareholders and the results are supportive of past studies, as earlier summarised in chapter 1. There is evidence that the market reacts to the takeover news about four months out, estimated from the zero-one model and three months out, as estimated from the market model, or at least, before the announcement month. The CAARs over the period (-12,-1) are positive at 1% estimated from the market model and substantially positive at 27% as estimated from the zero-one model. Subsequent to month 0, the CAARs over the period (+1,+12) are negative at -27.90% estimated from the market model and -8.10% estimated from the zero-one model. The CAARs over the period (-12,+12) are negative at -28.80% as estimated from the market model and positive at 18.30% as estimated from the zero-one model. Between the period (-12,-1) and (-12,+12), the CAARs for the bidding firm’s shareholders decrease by about 8.70% when estimated from the zero-one model and 29.80% when estimated from the market model. Therefore, on average, the takeover announcement results in small negative abnormal returns, estimated from the market model, and substantial positive abnormal returns, estimated from the zero-one model, but smaller than those for the target firm’s shareholders.

5.1.1.1.3 Comparisons between target and bidding firms during the bid period

To study takeover effects on the event firms for the bid period (-12,+12), in addition to separately investigating the performances of target firms and bidding firms, the comparison of the effects of the takeovers on the target and bidding firms was undertaken and the results are presented in Tables 1, 2, 3, and 4 (also see Figure 3). Both target and bidding firms have available data for the same time period (-48,+16), this enables me to directly compare the performances of the target firms with their respective bidding firms. This is a similar idea to that of Mandelker (1974).

The results show that in the takeover month (month 0), the monthly AARs and CAARs are positive at 12.80% estimated from the zero-one model and 13.70% when estimated from the market model, and 30.80% when estimated from the market model and 31.10% estimated from the zero-one model, respectively. Accordingly, the CAARs over the period (-1,+1) are positive at 27.50% estimated from the zero-one model and 31% estimated from the market model. Thus the target firm’s shareholders gain significant positive monthly AARs and substantial positive CAARs in the takeover
announcement period and around the takeover announcement month. Meanwhile, during month 0, the bidding firm's shareholders gain insignificant negative monthly AARs of -0.60% and -1.90%, and positive CAARs of 26.40% and negative CAARs of -0.90%, when estimated from the zero-one and market models respectively.

Before month 0, for the period (-12,-1), most of the monthly AARs for the target firm's shareholders are statistically insignificant meanwhile, nearly half of those for the bidding firm's shareholders are significant, and about 75% of them are positive. The CAARs over the period (-12,-1) for the target and bidding firms' shareholders are positive at 17% and 18.30%, and positive at 1% and 27%, when estimated from the market and zero-one models respectively. The evidence from the investigations of the takeover effects on both target and bidding firms indicates that takeover information is available to the market two months prior, at least, and four, when estimated from the zero-one model, and three months, when estimated from the market model, at least, before the announcement month respectively. As a result, the target and bidding firms' shareholders realise positive abnormal returns of approximately 13.10% and 14.40%, and about 7.80% and 16%, estimated from the market and zero-one models respectively. Therefore, the available takeover news before the takeover announcement month increases positive abnormal returns for both the target and bidding firms' shareholders. In addition, most of the positive gains before the takeover announcement for the target firm's shareholders occur in month -1. There are significant positive monthly AARs of 9.90% estimated from the zero-one model and 10.50% estimated from the market model which account for approximately 54.10% and 61.76% of the CAARs over the period (-12,-1) respectively.

After month 0, about half and nearly half of the monthly AARs of the period (+1,+12) for the target and bidding firms' shareholders, consecutively, are significantly different from zero. Amongst those, there are more significantly positive rather than negative monthly AARs for the target firm's shareholders but more significantly negative rather than positive monthly AARs for the bidding firm's shareholders. Consequently, the target firm's shareholders earn positive CAARs over the period (+1,+12) and significantly positive values over the period (-12,+12) which are 9.90% and 16%, and 40.70% and 47%, when estimated from the market and zero-one models respectively. Meanwhile, the bidding firm's shareholders earn negative CAARs over the
period (+1,+12) of -8.10% and -27.90% when estimated from the zero-one and market models respectively, and positive and negative CAARs over the period (-12,+12) of 18.30% and -28.80% as estimated from the zero-one and market models respectively. Between the period (-12,-1) and (-12,+12), the CAARs for the target firm’s shareholders increase 23.70% estimated from the market model and 28.70% estimated from the zero-one model meanwhile, those for the bidding firm’s shareholders decrease 8.70% estimated from the zero-one model and 29.80% estimated from the market model. Thus, after the announcement month, the target firm’s shareholders earn substantial positive abnormal returns, and the bidding firm’s shareholders earn positive and negative abnormal returns estimated from the zero-one model, and substantial negative abnormal returns estimated from the market model.

In conclusion, in month 0, the target firm’s shareholders earn significant positive monthly AARs and CAARs of about 12.80% as estimated from the zero-one model and 13.70% as estimated from the market model; and approximately 30.80% estimated from the market model and 31.10% estimated from the zero-one model, respectively. The largest monthly AARs for the target firm’s shareholders of 9.90% as estimated from the zero-one model and 10.50% as estimated from the market model occur in month -1 which account for approximately 54.10% and 61.76% of the CAARs over the period (-12,-1) respectively. Meanwhile, the bidding firm’s shareholders earn insignificantly negative monthly AARs of approximately -0.60% estimated from the zero-one model and -1.90% estimated from the market model; and about -0.90% estimated from the market model and 26.40% estimated from the zero-one model. There is evidence that the market responds to the takeover news two months, at least, before the announcement month, and four months, estimated from the zero-one model, and three months, estimated from the market, at least, before the announcement month, for target and bidding firms’ investigations respectively, offering positive abnormal returns to both firms. The CAARs over the period (-12,-1), (+1,+12), and (-12,+12) for the target firm’s shareholders are positive meanwhile those for the bidding firm’s shareholders are positive and negative. Between the period (-12,-1) and (-12,+12), the CAARs for the target firm’s shareholders increase meanwhile, those for the bidding firm’s shareholders decrease. The findings are consistent with previous studies and it is concluded that the takeover results in substantial positive gains for the target firm’s shareholders, but substantial positive gains, which are smaller than those for the target firm’s
shareholders, estimated from the zero-one model and small losses estimated from the market model for the bidding firm’s shareholders.

5.1.1.1.4 Successful target abnormal returns (bid period)

Tables 1 and 2 demonstrate the monthly abnormal returns for the successful tender offers occurring from 1992-2002. The expected returns for the successful target firm’s shareholders for the bid period (-12, +12) were measured by means of the market and zero-one models respectively. The monthly abnormal returns for the successful target firm’s shareholders from 12 months before the event month until 12 months after the event month were estimated. Also, the cumulative abnormal returns for each month for the successful target firm’s shareholders from 12 months before the event month until 12 months after the event month were calculated. Tables 3 and 4 present cross-sectional total and average monthly standardised abnormal returns estimated from the market and zero-one models respectively for the bid period (-12,+12) for the successful tender offers occurring from 1992-2002. The results show that in the takeover announcement month (month 0), the monthly AARs estimated from the market model for the successful target firm’s shareholders are significantly positive at 14.40% which are close to the 13.70% for the total target firms’ shareholders. Accordingly, the CAARs over the period (-12,0), starting twelve months prior to and including the announcement month, are positive at 31.10% which are similar to the 30.80% for the total target firms’ shareholders. Also, the monthly AARs during the period (-2,+2) and (-1,+1) are statistically significant which are confirmed by the significance tests for the TSRs and/or ASRs for the successful target firm’s shareholders are significant in these months (see Table 3). The CAARs over the period (-2,+2) and (-1,+1) are up to positive 32% and 30.40% respectively.

Prior to month 0, the pattern of the monthly AARs for the successful target firm’s shareholders is similar to that for the total target firms’ shareholders, with even more strongly consistent positive monthly AARs. There is evidence that the market positively reacts to the takeover news at least 2 months before the announcement month, gaining positive abnormal returns of approximately 13% for the successful target firm’s shareholders. This can be explained in terms of the takeover news leaking into the market before the announcement month or abnormal returns are attractive for firms.
considering the takeovers. Also the successful target firm’s shareholders earn significantly substantial positive monthly AARs of about 10.60% in month -1 which are the largest monthly AARs of the period (-12,-1), and the main contribution to the CAARs over the period (-12,-1) or in month -1 which are positive at 16.70%.

After month 0, the pattern of the monthly AARs for the successful target firm’s shareholders is the same as that for the total target firms’ shareholders. Consequently, the CAARs over the period (+1,+12) for the successful target firm’s shareholders are positive at 7.80%. The CAARs over the period (-12,+12) are positive at 38.80%, which are greater than those in month 0 of 31.10%, and compared with 40.70% for the total target firms’ shareholders. This can be referred to in terms of the argument in Akbulut and Matsusaka (2003) that the shareholders show downward-biased estimates of the value increases attached to takeover announcements.

For further comparison and analysis, in month 0, Tables 2 and 4 show that the monthly AARs estimated from the zero-one model for the successful target firm’s shareholders are significantly positive at 13.40% which are close to the 14.40% estimated from the market model. The CAARs over the period (-12,0) are 32% compared with 31.10% estimated from the market model. During the period (-2,+2) and (-1,+1), the monthly AARs are significantly positive and the CAARs are positive at about 33.10% and 27.40% compared with those of 32% and 30.40% estimated from the market model. Thus, the effect of takeovers on the wealth of the successful target firm’s shareholders is positive in the announcement period and around the announcement month. There is evidence that the monthly AARs are positive, starting in month -2, at least, and that the CAARs over the period (-2,-1) are positive at 14.50% compared with 13% estimated from the market model. This suggests that the successful target firm’s shareholders realise the takeover as being good news two months, at least, before the takeover month, enhancing positive abnormal returns for the successful target firm’s shareholders. The largest monthly AARs for the successful target firm’s shareholders occur one month before the takeover announcement which are significantly positive at 10.10% and 10.60%, accounting for 54.01% and 63.47% of the CAARs over the period (-12,-1) which are positive at 18.70% estimated from the zero-one model and 16.70% estimated from the market model, respectively. The CAARs over the period (+1,+12) are positive at 14.40% compared with 7.80% estimated from the market model.
CAARs over the period (-12,+12) are significantly positive at 46.40% (see Appendix B, Table B1) which are greater than statistically insignificant positive returns of 38.80% estimated from the market model.

In conclusion, the findings from both models are in line with each other. In month 0, the monthly AARs and CAARs are about 13.40% estimated from the zero-one model and 14.40% estimated from the market model, and approximately 31.10% estimated from the market model and 32% estimated from the zero-one model, respectively. The successful target firm’s shareholders earn significant positive monthly AARs and CAARs in the takeover announcement period and around the takeover announcement month. Also, the market reacts to the takeover news at least two months before the takeover month. The largest monthly AARs for the successful target firm’s shareholders occur in month -1 which are significantly positive at 10.10% and 10.60%, estimated from the zero-one and market models respectively. The CAARs over the period (-12,-1) are positive at 16.70% and 18.70% estimated from the market and zero-one models consecutively. The CAARs over the bid period (+1,+12) and (-12,+12) are positive at 7.80% and 14.40%; and positive at 38.80% and 46.40% when estimated from the market and zero-one models, respectively. In addition, the monthly AARs and CAARs for each month for the successful and for the total target firms’ shareholders behave with the same pattern. Finally, the results are consistent with past studies and it can be concluded that the successful target shareholders gain substantial positive abnormal returns in each time period, before the announcement, with most of the returns realised in month -1, in the announcement, and after the announcement month.

5.1.1.1.5 Unsuccessful target abnormal returns (bid period)

Tables 1 and 2 demonstrate the monthly abnormal returns for the unsuccessful tender offers occurring from 1992-2002. The expected returns for the unsuccessful target firm’s shareholders for the bid period (-12, +12) were measured by means of the market and zero-one models respectively. The monthly abnormal returns for the unsuccessful target firm’s shareholders from 12 months before the event month until 12 months after the event month were also estimated. Also, the cumulative abnormal returns for each month for the unsuccessful target firm’s shareholders from 12 months before the event month until 12 months after the event month were calculated. Tables 3
and 4 present cross-sectional total and average monthly standardised abnormal returns estimated from the market and zero-one models respectively for the bid period (-12,+12) for the unsuccessful tender offers occurring from 1992-2002. The results show that in the takeover announcement month (month 0), the monthly AARs estimated from the market model for the unsuccessful target firm’s shareholders are insignificantly negative at -1.70% compared with the 14.40% for the successful target firm’s shareholders. The CAARs over the period (-12,0), starting twelve months prior to and including the announcement month, are positive at 22.90%, compared with the 31.10% for the successful target firm’s shareholders. Therefore, the takeover announcements result in substantial positive gains for the unsuccessful target firm’s shareholders, but they are considerably even less than those for the successful target firm’s shareholders.

Before month 0, Tables 1 and 3 demonstrate that the unsuccessful target firm’s shareholders realise that the takeover news is starting to filter through in month -2, at least, and the CAARs over the period (-2,-1) are positive at 14.30%. Thus, the market reacts to the (unsuccessful) takeover as being good news, increasing the positive abnormal returns for the shareholders. Also, the unsuccessful target firm’s shareholders are concerned about the takeover outcomes whether they are successful or not, before the announcement month. The monthly AARs fluctuate between month -6 and month -1 and range from -13.30% to 8.20%. The volatility is influential as the CAARs over the period (-6,-1) are positive at 4.50% which are much lower when compared with the positive CAARs over the period (-12,-1) which have values up to 24.60%. However, this suggests that before the takeover announcement month, the unsuccessful target firm’s shareholders gain substantial positive abnormal returns, even though the monthly AARs fluctuate for a half of the time period.

After month 0, the volatility of the monthly AARs continues until month +7 which explains the uncertainty of the takeover outcomes meanwhile, the consistent positive monthly AARs during the period (+8,+12) may signal that there are potential takeover announcements in the following periods of time. The largest positive monthly AARs of the period (+1,+12) and (-12,+12) for the unsuccessful target firm’s shareholders of 29.10% occur in month +1, compared with values of only 5.40% for the successful target firm’s shareholders. Consequently, the CAARs over the period (-12,+1) or in month +1 are positive at 52% compared with the 36.50% for the successful
target firm’s shareholders. Accordingly, the CAARs over the period (+1,+12) and (-12, +12) for the unsuccessful target firm’s shareholders are positive at 65.80% and up to significantly positive at 88.70% respectively (see Table 1 and/or also see Appendix B, Table B1). Thus, after the announcement month, the unsuccessful target firm’s shareholders earn massive positive abnormal returns.

For further comparison and analysis, Tables 2 and 4 show that in month 0, the monthly AARs estimated from the zero-one model for the unsuccessful target firm’s shareholders are insignificantly negative at -1.60% which are very close to the -1.70% estimated from the market model. The CAARs over the period (-12,0) are positive at 7.70% compared with the 22.90% estimated from the market model. Before month 0, the monthly AARs estimated from the zero-one and market models for the unsuccessful target firm’s shareholders perform similarly. The unsuccessful target firm’s shareholders respond to the takeover news starting in month -2, at least, gaining positive CAARs over the period (-2,-1) of 11.60% compared with 14.30% as estimated from the market model. Also, the market shows concerns about the takeover outcomes over whether they are likely to be successful, reflected in the monthly AARs fluctuation during the period (-6,-1) ranging from 6.30% to -19.10%, compared with 8.20% to -13.30% as estimated from the market model. The CAARs over the period (-6,-1) are negative at -0.30% compared with the positive CAARs over the period (-12,-1) of 9.30%. Meanwhile, those estimated from the market model are 4.50% compared with the positive CAARs over the period (-12,-1) of 24.60%. Thus, it is suggested that there are signs of availability of takeover news in the market as well as signs of concern over the uncertainty over the outcomes of takeovers before the announcement month. Subsequent to month 0, the monthly AARs estimated from the zero-one model for the unsuccessful target firm’s shareholders behave in the same pattern as those estimated from the market model. The CAARs over the period (+1,+12) for the unsuccessful target firm’s shareholders are 54.80% compared with 65.80% estimated from the market model. The CAARs over the period (-12,+12) are positive at 62.50% compared with significantly positive at 88.70% when estimated from the market model. Thus, the CAARs are substantially positive in any time period subsequent to the takeover month, (+1,+12), (+8,+12), or (-12,+12). One explanation of the sustainability of positive abnormal returns after announcement month is that it reflects the potential for takeovers
in the following period of time\textsuperscript{44}. The largest positive monthly AARs of the period (+1,+12) and (-12,+12) are insignificantly positive at 26.20\% compared with significantly positive at 29.10\% estimated from the market model, which occur in month +1 (see Tables 2 and 1 respectively). Consequently, the CAARs over the period (-12,+1) are positive at 33.90\% compared with 52\% estimated from the market model.

In conclusion, the results estimated from the market and zero-one models are consistent. In month 0, the monthly AARs for the unsuccessful target firm’s shareholders are insignificantly negative at -1.60 and -1.70\% when estimated from the zero-one and market models respectively. The CAARs are positive at 7.70\% and 22.90\% when estimated from the zero-one and market models consecutively. The unsuccessful target firm’s shareholders respond to the takeover news starting in month -2, at least, prior to the announcement month. Also, the market shows concerns about the takeover outcomes and whether they are likely to be successful or not about six months before the announcement month. The CAARs over the period (-12,-1) are positive at 9.30\% when estimated from the zero-one model and 24.60\% when estimated from the market model. The CAARs over the period (+1,+12) and (12,+12) are 54.80\% and 65.80\%; and 62.56\% and 88.70\% as estimated from the zero-one and market models respectively. Therefore, the results are consistent with previous studies and it can be concluded that the unsuccessful takeover announcement results in positive abnormal returns for the shareholders in each time period, before the announcement, the announcement, and after the announcement month. Most of the abnormal returns subsequent to the takeover announcement month occur in month +1, leading to enormous positive abnormal returns in the period after the announcement month for the unsuccessful target firm’s shareholders.

\textit{5.1.1.1.6 Comparisons between successful and unsuccessful target firms during the bid period}

\textsuperscript{44} Also, Firth (1980, p. 249) explains that the persistent positive gains indicate 1) improvement in profitability of the firms that are frustrated by the takeovers; 2) any undervaluation of the target firms that experience the takeovers; and 3) the possibility of future takeovers (there could be a large block of shares held by the unsuccessful bidding firms that could be used as a starting block for a future takeover by the bidder or other firms).
To study takeover effects on the target firms for the bid period (-12, +12), in addition to separately investigating the performances of the successful and unsuccessful target firms, the comparison of the effects of the takeovers on the successful and unsuccessful target firms was analysed and the results are presented in Tables 1, 2, 3, and 4 (also see figure 3).

The results show that in the takeover month (month 0), the successful target firm’s shareholders earn significant and positive monthly AARs of approximately 13.40% as estimated from the zero-one model and 14.40% as estimated from the market model; and substantial positive CAARs of 31.10% estimated from the market model and 32% estimated the zero-one model. Meanwhile, the monthly AARs for the unsuccessful target firm’s shareholders are insignificantly negative at -1.60% when estimated from the market model and -1.70% when estimated the zero-one model; and the CAARs are positive at 7.70% as estimated from the zero-one model and 22.90% as estimated from the market model. Moreover, it is obvious that the CAARs for the successful target firm’s shareholders are substantially greater than those for the unsuccessful target firm’s shareholders. One explanation could be that the market partially forecasts the possibility that the target firm’s shareholders will receive a control premium (Schwert, 1996). Also, the successful target firm’s shareholders earn significant positive monthly AARs and CAARs around the takeover announcement month. The CAARs over the period (-2, +2) and (-1, +1) are calculated as being up to positive at 32% when estimated from the market model and 33.10% when estimated from the zero-one model; and 27.40% as estimated from the zero-one model and 30.40% as estimated from the market model, respectively.

Before month 0, the successful and unsuccessful target firms’ shareholders anticipate the takeover news by about two months, at least, prior to the takeover month, gaining positive abnormal returns of approximately 13% when estimated from the market model and 14.50% when estimated from the zero-one model, and 11.60% estimated from the zero-one model and 14.30% estimated from the market model, respectively. Also, there is some evidence that the market is doubtful about the uncertain takeover outcomes before the announcement month. The monthly AARs fluctuate all the time during the period (-6, -1) which results in unstable monthly AARs ranging from positive 6.30% to negative -19.10%, when estimated from the zero-one
model, and positive 8.20% to negative -13.30%, when estimated from the market model, for the unsuccessful target firm’s shareholders. The shareholders realise small negative abnormal returns of -0.30% estimated from the zero-one model and small positive abnormal returns of 4.50% estimated from the market model, which account for 3.23% and 18.29% of the CAARs over the period (-12,-1) of 9.30% and 24.60% respectively. It is suggested that most of the abnormal returns for the successful target firm’s shareholders before the announcement derive from the positive monthly AARs that occur in month -1 which are significant and positive at 10.10% when estimated from the zero-one model and 10.60% when estimated from the market model. The CAARs over the period (-12, -1) are positive at 16.70% when estimated from the market model and 18.70% when estimated from the zero-one model.

After month 0, the largest positive monthly AARs are for the unsuccessful target firm’s shareholders of 26.20% and 29.10%, compared with the only 3.90% and 5.40% for the successful target firm’s shareholders, estimated from the zero-one and market models respectively, and these occur in month +1. Also, the sustainability of the positive monthly AARs during the period (+8,+12) indicates the market reaction to the potential of further takeovers, resulting in positive CAARs of up to 34% as estimated from the zero-one model and 41.20% as estimated from the market model for the unsuccessful target firm’s shareholders. The CAARs over the period (+1,+12) and (-12,+12) are positive at 54.80% and 65.80%; and 62.50% and 88.70% when estimated from the zero-one and market models respectively. Meanwhile, those for the successful target firms are positive at 7.80% and 14.40%; and 39% and 46% estimated from the market and zero-one models consecutively. This suggests that the unsuccessful target firm’s shareholders do not suffer adverse market reaction relative to the successful target firm’s shareholders. It is argued that the synergy between the target and bidding firms is not the prime reason for the revaluation of the target firms, but the market expects these target firms to be subject of successful takeovers in a later period.

In conclusion, in month 0, the successful target firm’s shareholders earn positive monthly AARs, and the unsuccessful target firm’s shareholders earn negative monthly AARs, but both earn positive CAARs. The successful target firm’s shareholders earn significant positive CAARs of approximately 31.10% when estimated from the market model and 32% when estimated from the zero-one model, which are greater than the
values of 7.70% estimated from the zero-one model and 22.90% estimated from the market model for the unsuccessful target firm’s shareholders. Both successful and unsuccessful target firm’s shareholders show anticipation of the takeover news starting in month -2, at least. Also, the unsuccessful target firm’s shareholders are doubtful about the takeover outcomes approximately six months before the announcement month. The CAARs over the period (-12,-1) for the successful and unsuccessful target firms’ shareholders are of the orders of 16.70% estimated from the market model and 18.70% estimated from the zero-one model; and 9.30% estimated from the zero-one model and 24.60% estimated from the market model, respectively. Most positive abnormal returns for the successful target firm’s shareholders occur in month -1 which are significant and positive at 10.10% when estimated from the zero-one model and 10.60% when estimated from the market model. Meanwhile, those for the unsuccessful target firm’s shareholders are realised in month +1 which are significant and positive at 26.20% as estimated from the zero-one model and 29.10% as estimated from the market model. After the announcement month, both successful and unsuccessful takeovers offer positive wealth gains to target firms’ shareholders. The CAARs over the period (+1, +12) and (-12,+12) are positive at 7.80% and 14.40%; 39% and 46% when estimated from the market and zero-one models respectively; and positive 54.80% and 65.80%; 62.50% and 88.70% when estimated from the zero-one and market models respectively. The results are also consistent with past studies and it can be concluded that both successful and unsuccessful takeovers enhance positive abnormal returns for the target firm’s shareholders in each time period; before the announcement, during the announcement, and after the announcement month. Even though in the announcement month, the unsuccessful target firm’s shareholders earn smaller abnormal returns than those for the successful target firm’s shareholders, after the takeover announcement month, the unsuccessful target firm’s shareholders earn much greater positive abnormal returns than those available for the successful target firm’s shareholders.

5.1.1.1.7 Successful bidding firm abnormal returns (bid period)

Tables 1 and 2 demonstrate the monthly abnormal returns for the successful tender offers occurring from 1992-2002. The expected returns for the successful bidding firm’s shareholders for the bid period (-12, +12) were measured by means of the market and zero-one models respectively. The monthly abnormal returns for the successful
bidding firm's shareholders from 12 months before the event month until 12 months after the event month were estimated. Also, the cumulative abnormal returns for each month for the successful bidding firm's shareholders from 12 months before the event month until 12 months after the event month were calculated. Tables 3 and 4 present cross-sectional total and average monthly standardised abnormal returns estimated from the market and zero-one models respectively for the bid period (-12,+12) for the successful tender offers occurring from 1992-2002. The findings suggest that in the takeover announcement month (month 0), the monthly AARs estimated from the market model for the successful bidding firm's shareholders are insignificantly negative at -1.80% which are close to the -1.90% for the total bidding firms' shareholders. The CAARs over the period (-12,0), starting twelve months before and including the event month, are positive at 2.10% which are different from the negative -0.90% for the total bidding firm's shareholders. Therefore, the effect of takeover announcements on the wealth of the successful bidding firm's shareholders is positive.

Before month 0, the monthly AARs and CAARs for each month show very similar patterns to those for the total bidding firms' shareholders. The takeover news is transmitted into the market starting in month -3, at least, gaining positive CAARs over the period (-3,-1) of 9.10% for the successful bidding firm's shareholders. The CAARs over the period (-12,-1) are positive at 3.90% compared with 1% for the total bidding firms' shareholders.

After month 0, the monthly AARs and CAARs for each month also behave in very similar patterns to those for the total bidding firms' shareholders. The CAARs over the period (+1,+12) for the successful bidding firm's shareholders are negative at -26.10% which are very close to the -27.90% for the total bidding firms' shareholders. The CAARs over the period (-12,+12) are negative at -24% which are close to the -28.80% for the total bidding firms' shareholders. This explains that the stock market's initial reaction to the implications of takeover announcements for the successful bidders is correct.

For further comparison and analysis, in month 0, Tables 2 and 4 demonstrate that the monthly AARs and CAARs when estimated from the zero-one model are
insignificantly negative at -0.80% and positive at 26.20%, compared with those of -1.80% and 2.10% when estimated from the market model, respectively. Prior to month 0, the takeover news is available to the market starting in month -4, at least, which is one month earlier compared with that from the market model. The CAARs over the period (-4,-1) are positive at 17.0% compared with the 9.10% over the period (-3,-1) when estimated from the market model. The CAARs over the period (-12,-1) are positive at 26.90% compared with the 3.90% estimated from the market model. One explanation is that the successful bidding firms perform better than expected prospects for making takeovers (Firth, 1980, p. 249). Thus, prior to the announcement month, the successful bidding firm’s shareholders earn positive abnormal returns. After month 0, the CAARs over the period (+1,+12) and (-12,+12) are negative at -8.60% and -26.10%; and positive at 17.60% and negative at -24% when estimated from the zero-one and market models respectively. The monthly AARs and CAARs for each month estimated from the market model for the successful and total bidding firms’ shareholders perform in the same patterns, except for the announcement month. Meanwhile, those estimated from the zero-one model for the successful and total bidding firms’ shareholders present the same patterns for each time period, before the announcement, the announcement, and after the announcement month. Thus, after the announcement month, the successful bidding firm’s shareholders appreciate positive abnormal returns and suffer moderate as well as substantial negative abnormal returns.

In conclusion, in month 0, the monthly AARs for the successful bidding firm’s shareholders are insignificantly negative at -0.80% when estimated from the zero-one model and -1.80% when estimated from the market model. The CAARs are 2.10% as estimated from the market model and 26.20% as estimated from the zero-one model. The takeover news appears to leak into the market four months early, when estimated from the zero-one model, and three months, when estimated from the market model, at least, before the takeover announcement month. The CAARs over the period (-12,-1) are positive at 3.90% estimated from the market model and 26.90% estimated from the zero-one model. The CAARs over the period (+1,+12) and (-12,+12) are negative at -8.60% and -26.10%; and positive at 17.60% and negative at -24% as estimated from the zero-one and market models respectively. Finally, the results are consistent with past studies and it can be concluded that before the announcement and the announcement month, the successful takeovers result in positive abnormal returns for the bidding
firm's shareholders. After the announcement month, the successful takeovers lead to negative abnormal returns over the period (+1,+12), but positive abnormal returns, estimated from the zero-one model, and negative abnormal returns, estimated from the market model, over the period (-12,+12) to the bidding firm's shareholders.

5.1.1.1.8 Unsuccessful bidding firm abnormal returns (bid period)

Tables 1 and 2 demonstrate the monthly abnormal returns for the unsuccessful tender offers occurring from 1992-2002. The expected returns for the unsuccessful bidding firm's shareholders for the bid period (-12, +12) were measured by means of the market model and zero-one model respectively. The monthly abnormal returns for the bidding firm's shareholders from 12 months before the event month until 12 months after the event month were estimated. Also, the cumulative abnormal returns for each month for the unsuccessful bidding firm's shareholders from 12 months before the event month until 12 months after the event month were calculated. Tables 3 and 4 present cross-sectional total and average monthly standardised abnormal returns estimated from the market and zero-one models respectively for the bid period (-12,+12) for the unsuccessful tender offers occurring from 1992-2002. The findings show that in the takeover announcement month (month 0), the monthly AARs estimated from the market model for the unsuccessful bidding firm's shareholders are insignificantly negative at -3.50%. The CAARs over (-12,0), starting twelve months before and including the event month, are negative at -41.10%. The monthly AARs are consistently negative during the period (-2,+2), and the CAARs around month 0, or (-2+2), are negative at -27.30%. Thus, the unsuccessful takeover results in negative abnormal returns in the announcement and around the announcement month for the bidding firm's shareholders.

Before month 0, there is evidence that the takeover news transmits into the market before the announcement month, starting in month -2, at least, with negative monthly AARs at -7.30%, and the CAARs over the period (-2,-1) are negative at -15.30%. The evidence also indicates that the market is doubtful about the outcomes of takeovers whether they will be successful or not before the announcement month. The volatility of the monthly AARs starts in month -4, at least, and the CAARs over the period (-4,-1) are negative at -15.10%.
After month 0, the CAARs over the period (+1,+12) and (-12,+12) for the unsuccessful bidding firm's shareholders are negative at -49.50% and significantly negative at -90.60% respectively (see Table 1 and/or also see Appendix C, Table C1). Meanwhile, the magnitude of the CAARs over the period (+1,+12) is close to that of those shown in month 0, -49.50% and -41.10%, but the magnitude of the CAARs over the period (-12,+12) increases to be twice that of those in month 0, -90.60% and -41.10% and nearly four times bigger than that of those over the period (-12,+12) for the successful bidding firm's shareholders. -90.60% and -24% (see Table 1). Therefore, subsequent to month 0, the takeover announcement effect on the wealth of the unsuccessful bidding firm's shareholders is enormously negative, an attribution of the extensive negative impact of the period (-12,+12) on the unsuccessful bidding firm's shareholders. This perhaps reflects the resources expended in takeovers, for which no benefits accrue (Firth, 1980).

For further comparison and analysis, in month 0, Tables 2 and 4 show that the monthly AARs estimated from the zero-one model for the unsuccessful bidding firm's shareholders are insignificantly positive at 0.80% compared with insignificantly negative at -3.50% when estimated from the market model. The CAARs over the period (-12,0) are positive at 29.10% compared with the negative -41.10% estimated from the market model. The CAARs around month 0, or (-2,+2), are positive at 3% meanwhile those estimated from the market model are negative at -27.30%. Prior to month 0, the takeover news spreads into the market starting in month -4, compared with a start in month -2, at least, when estimated from the market model, resulting in positive CAARs over the period (-4,-1) and negative CAARs over the period (-2,-1) of 2.50% and -15.30% respectively for the unsuccessful bidding firm's shareholders. The market's concerns about the uncertainty of the takeover outcomes and whether they will be successful or not show before the announcement month. There is evidence that the monthly AARs are volatile over the period (-4,-1), at least, ranging from -4.70% to 5.60% meanwhile, those estimated from the market model range from -8% to 5.40%. The CAARs over the period (-4,-1) are positive at 2.50% and negative at -15.10% when estimated from the zero-one and market models respectively. The CAARs over (-12,-1) estimated from the zero-one model are positive at 28.30% compared with the negative CAARs of -37.60% when estimated from the market model. Subsequent to month 0, the CAARs over the period (+1,+12) estimated from the zero-one model are negative at -
1.80% compared with the negative -49.50% when estimated from the market model. The CAARs over the period (-12,+12) are insignificant and substantially positive at 27.30% compared with the significant and enormously negative -90.60 when estimated from the market model. The reported negative returns imply that the market views the (unsuccessful) takeovers as being bad news, resulting in the shareholders’ losses instead of gains after the announcement month. Meanwhile, the reported positive returns explain that the market views the takeover as good news or the (unsuccessful) takeover as bad news in other words, expecting that there will be potential takeovers in the future.

In conclusion, in month 0, the monthly AARs estimated from the market and zero-one models for the unsuccessful bidding firm’s shareholders are insignificantly negative at -3.50% and positive at 0.80% respectively. The CAARs over the period (-12,0) estimated from the market and zero-one models for the unsuccessful bidding firm’s shareholders are negative at -41.10% and positive at 29.10% respectively. The market reacts to the takeover news two months prior, when estimated from the market model and four months prior, when estimated from the zero-one model. Also, the high volatility of the monthly AARs during the period (-4,-1), at least, indicates that the market shows concerns about the uncertainty of takeover outcomes. The CAARs over the period (-12,-1) are negative at -37.60% when estimated from the market model and positive at 28.30% when estimated from the zero-one model. The CAARs over the period (+1,+12) and (-12,+12) are negative at -49.50% and -1.80%; and negative at -90.60% and positive at 27.30%, as estimated from the market and zero-one models, respectively. All the reported results are consistent with past studies, on the whole. It can be concluded that before the announcement and the announcement month, the unsuccessful takeovers result in substantial positive and negative abnormal returns, estimated from the zero-one and market models respectively, for the bidding firm’s shareholders. After the announcement month, for the period (+1,+12) and (-12,+12), the unsuccessful takeovers lead to small, and substantial and enormous negative abnormal returns, when estimated from the zero-one and market models respectively, and substantial positive abnormal returns, estimated from the zero-one model, for the bidding firm’s shareholders.
5.1.1.9 Comparisons between successful and unsuccessful bidding firms during the bid period

To study takeover effects on the bidding firms for the bid period (-12,+12), in addition to separately investigating the performances of the successful and unsuccessful bidding firms, a comparison of the effects of the takeovers on the successful and unsuccessful bidding firms was undertaken and the results are presented in Tables 1, 2, 3, and 4 (also see figure 3).

The results demonstrate that in month 0, the monthly AARs for the successful bidding firm’s shareholders are insignificantly negative at -0.80% when estimated from the zero-one model and -1.80% when estimated from the market model. The CAARs over the period (-12,0) have the values of 2.10% as estimated from the market model and 26.20%, when estimated from the zero-one model. Meanwhile, the monthly AARs for the unsuccessful bidding firm’s shareholders are insignificantly negative at -0.35% as estimated from the market model and insignificantly positive at 0.80% as estimated from the zero-one model. The CAARs are negative at -41.10% estimated from the market model and positive at 29.10% when estimated from the zero-one model.

Before month 0, there is evidence that the successful bidding firm’s shareholders share prices respond to the takeover news some four months prior, when estimated from the zero-one model, and three months prior, when estimated from the market model, in terms of the takeover announcement month, gaining positive abnormal returns of 17% and 9.10% respectively. Meanwhile, the unsuccessful bidding firm’s shareholders share prices show reaction to the potential news four months prior, when estimated from the zero-one model, and two months prior, when estimated from the market model, gaining positive abnormal returns of 2.50% and suffering negative abnormal returns of -15.30% respectively. Also, the unsuccessful bidding firm’s shareholders display concerns about the takeover outcomes four months, at least, before the announcement month, and are affected by the volatility of the monthly AARs ranging from -8% to 5.40%, when estimated from the market model, and -4.70% to 5.60%, when estimated from the zero-one model. The CAARs over the period (-4,-1) are negative at -15.10% and positive at 2.50% as estimated from the market and zero-one models respectively. The CAARs over the period (-12,-1) for the successful bidding
firm's shareholders are positive at 3.90% when estimated from the market model and 26.90% when estimated from the zero-one model. Meanwhile, those for the unsuccessful bidding firm's shareholders are negative at -37.60% as estimated from the market model and positive at 28.30% as estimated from the zero-one model.

Subsequent to month 0, the CAARs over the period (+1,+12) and (-12,+12) for the successful bidding firm's shareholders are negative at -26.10% when estimated from the market model and -8.60% when estimated from the zero-one model; and negative at -24% when estimated from the market model and positive at 17.60% when estimated from the zero-one model, consecutively. Meanwhile, those for the unsuccessful bidding firm's shareholders are negative at -49.50% from the market model and -1.80% from the zero-one model; and negative at -90.60% from the market model and positive at 27.30% from the zero-one model, respectively.

It is noted that the CAARs calculated from the market model for the unsuccessful bidding firm's shareholders are enormously negative in each time period, before the announcement (-12,-1), the announcement (-12,0), and after the announcement month (+1,+12) or (-12,+12). Moreover the magnitude of these CAARs decreases all the time during these periods, being negative at -37.60% over the period (-12,-1), -41.10% over the period (-12,0), -49.50% over the period (+1,+12), and -90.60% over the period (-12,+12) respectively. Meanwhile, the successful bidding firm's shareholders gain small positive abnormal returns of 3.90% and 2.10% over the period (-12,-1) and (-12,0) respectively; and at the same time, they suffer negative abnormal returns approximately one and four times less than those for the unsuccessful bidding firm's shareholders over the period (+1,+12) and (-12,+12) respectively, negative -26.10% compared with -49.50% over the period (+1,+12) and -24% compared with -90.60% over the period (-12,+12). Meanwhile, the CAARs estimated from the zero-one model show that before the announcement and the announcement month, or over the period (-12,-1) and (-12,0), the unsuccessful bidding firm's shareholders gain greater positive abnormal returns than those for the successful bidding firm's shareholders, 28.30% and 29% compared with 26.90% and 26.20%. At the same time, the unsuccessful bidding firm's shareholders suffer much less negative abnormal returns for the period (+1,+12) than the successful bidding firm's shareholders, negative at -1.80% compared with -8.60%, and gain much greater positive returns for the period (-12,+12)
than the successful bidding firm's shareholders, positive 27.30% compared with 17.60%. A possible explanation of the persistent increase of the CAARs after the takeover announcement could be that it is due to the average effect across bidding firms, where abnormal returns from greenmail occur at different points in time relative to the initial takeover announcement (Dodd and Officer, 1987, p. 369).

In conclusion, in month 0, the monthly AARs for the successful bidding firm's shareholders are insignificant and small with negative values at -0.80%, estimated from the zero-one model, and -1.80, estimated from the market model. Meanwhile, those for the unsuccessful bidding firms' shareholders are insignificant and small and negative at -3.50% when estimated from the market model and small and positive at 0.80% when estimated from the zero-one model. The CAARs for the successful bidding firm's shareholders are positive at 2.10% as estimated from the market model and positive at 26.20% as estimated from the zero-one model, compared with substantial negative values of -41.10% estimated from the market model and substantial positive values at 29.10% estimated from the zero-one model for the unsuccessful bidding firm's shareholders. Before month 0, the successful bidding firm's shareholders react to the takeover news four months prior, suggested by the zero-one model and three months prior by the market model before the announcement month, gaining positive abnormal returns. Meanwhile, in the case of the unsuccessful bidding firms, the market responds to the potential takeover news four months prior, estimated from the zero-one model and two months prior, estimated from the market model, gaining and suffering abnormal returns respectively. Also, the unsuccessful bidding firm's shareholders display concerns about the potential takeover outcomes four months, at least, prior to the announcement month. After month 0, for the period (+1,+12), both successful and unsuccessful bidding firms' shareholders suffer negative CAARs meanwhile, for the period (-12,+12), the two sets of firms show positive and negative CAARs. Finally, the results are consistent with those of previous studies. It is concluded that the results estimated from the market model suggest that the successful bidding firm's shareholders benefit from the takeover announcement more than the unsuccessful bidding firm's shareholders in each time period; the results estimated from the zero-one model indicate that the unsuccessful bidding firm's shareholders experience much greater benefits from the takeover than the successful bidding firm's shareholders in each time period, before the announcement (-12,-1), the announcement (-12,0), and after the announcement...
month (+1, +12) or (-12, +12). In addition, the patterns of the monthly AARs and CAARs for each month estimated from the market model for the successful and total bidding firms' shareholders, and those estimated from the zero-one model for the successful and total bidding firms' shareholders show the same performance patterns, respectively, on the whole.
This table presents the monthly average abnormal returns (AARs) and the cumulative average abnormal returns (CAARs) to target and bidding firms for tender offers occurring from 1992-2002. The measurement of the takeover announcement effects on the firms, the realised returns for the target and bidding firms' shareholders for the bid period (-12,+12) were measured by the market model. Three years (36 months) (-48,-12) was determined for the estimation period and 25 months (-12,0,+12) was given for the event window. The AARs are monthly abnormal returns for the target and bidding firms' shareholders from 12 months before the event month until 12 months after the event month. These were estimated then, cross-sectional averages in each month were calculated over the number of the firms. The CAARs are the AARs which are accumulated from the first month of the investigation period until the last month of the period. For comparison, this table demonstrates the performances of total target firms, successful and unsuccessful target firms. Also, the performances of total bidding firms, successful, and unsuccessful bidding firms are shown in this table. The sample sizes (N) for the target and bidding firms for each alternative are presented in the parentheses.

<table>
<thead>
<tr>
<th>Event Month</th>
<th>Target Firms</th>
<th>Bidding Firms</th>
<th>Market Model</th>
</tr>
</thead>
<tbody>
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<td>Successful (50 firms)</td>
<td>Unsuccessful (2 firms)</td>
</tr>
<tr>
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<td>AARs</td>
<td>CAARs</td>
<td>AARs</td>
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<td>0.021</td>
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</tr>
<tr>
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<td>0.013</td>
<td>0.034</td>
<td>0.011</td>
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<td>0.003</td>
<td>0.037</td>
<td>0.003</td>
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<td>-0.019</td>
<td>0.019</td>
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<tr>
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<td>-0.033</td>
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<td>0.010</td>
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<tr>
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<td>0.003</td>
<td>0.001</td>
<td>0.008</td>
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<td>0.028</td>
<td>0.028</td>
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<tr>
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<td>0.420</td>
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<tr>
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</table>
### Table 2

**Target and Bidding Firm Investigation (Bid Period)**

This table presents the monthly average abnormal returns (AARs) and the cumulative average abnormal returns (CAARs) to target and bidding firms for tender offers occurring from 1992-2002. The measurement of the takeover announcement effects on the firms, the realised returns for the target and bidding firms' shareholders for the bid period (-12, +12) were measured by the market-adjusted (zero-one) model. The AARs are monthly abnormal returns for the target and bidding firms' shareholders from 12 months before the event month until 12 months after the event month were estimated. The cross-sectional averages in each month calculated by the number of the firms are shown. The CAARs are the AARs which are accumulated from the first month of the investigation period until the last month of the period. For comparison, this table demonstrates the performances of total target firms, successful, and unsuccessful target firms. Also, the performances of total bidding firms, successful, and unsuccessful bidding firms are shown in this table. The sample sizes (N) for the target and bidding firms for each alternative are presented in the parentheses.

<table>
<thead>
<tr>
<th>Event Month</th>
<th>Total (52 firms)</th>
<th>Successful (50 firms)</th>
<th>Unsuccessful (2 firms)</th>
<th>Total (42 firms)</th>
<th>Successful (39 firms)</th>
<th>Unsuccessful (3 firms)</th>
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<td>CAARs</td>
<td>AARs</td>
<td>CAARs</td>
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<td>0.001</td>
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Table 3

**Target and Bidding Firm Investigation (Bid Period)**

This table presents the cross-sectional total and average monthly standardised abnormal returns (residuals) for the bid period (-12,+12) for tender offers occurring from 1992-2002. Specifically, to compare target and bidding firms' performances, the realised returns for the firms' shareholders for the bid period (-12,+12) were estimated from the market model. The monthly abnormal returns for the target and bidding firm’s shareholders from 12 months before the event month until 12 months after the event month were calculated. Then, the monthly abnormal returns were standardised and cross-sectionally summed and averaged to form the monthly total or the sum of the standardised residuals (TSRs) and the average event-period standardised residuals (ASRs) respectively. The results show the monthly TSRs and ASRs for the target and bidding firms’ shareholders. For comparison, this table demonstrates the performances of total target firms, successful, and unsuccessful target firms. Also, the performances of total bidding firms, successful, and unsuccessful bidding firms are shown in this table. To test the significance of the monthly abnormal returns, the standardised-residual and standardised cross-sectional tests were applied. The t-statistics were calculated by means of the standardised-residual test and the standardised cross-sectional test respectively. The t-statistics are the sum of the standardised residuals divided by (approximately) the square root of the number of sample firms, and the average event-period standardised residual divided by its contemporaneous cross-sectional standard error respectively. The standardised residual equals the event-period residual divided by the standard deviation of the estimation-period residuals, adjusted to reflect the forecast error.

The formulas are as follows:

\[ t = \frac{\sum_{i=1}^{N} SR_{i}}{\sqrt{N}} \quad \text{and} \quad \frac{1}{N(N-1)} \sum_{i=1}^{N} (SR_{i} - \sum_{i=1}^{N} SR_{i}/N)^2. \]

The sample sizes (N) for the target and bidding firms for each alternative are presented in the parentheses, 36 and 25 months were selected for the estimation-period and event-window consecutively. The test statistics are shown in the parentheses below the values of the TSRs and ASRs.

<table>
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<tr>
<th>Event Month</th>
<th>Total (52 firms)</th>
<th>Target Firms Successful (50 firms)</th>
<th>Unsuccessful (2 firms)</th>
<th>Total (42 firms)</th>
<th>Bidding Firms Successful (39 firms)</th>
<th>Unsuccessful (3 firms)</th>
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<td>TSRs</td>
<td>ASRs</td>
<td>TSRs</td>
<td>ASRs</td>
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<td>(2.37)*</td>
<td>(0.81)</td>
<td>(2.84)*</td>
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<td>(0.41)</td>
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TSRs = Total or the sum of standardised residuals  
ASRs = Average event-period standardised residuals

*significant at 5% level  
**significant at 1% level  
***significant at 0.1% level  
****significant at 0.01% level
Table 4

Target and Bidding Firm Investigation (Bid Period)

This table presents the cross-sectional total and average monthly standardised abnormal returns (residuals) for the bid period (-12,+12) for tender offers occurring from 1992-2002. Specifically, to compare target and bidding firms’ performances, the realised returns for the firms’ shareholders for the bid period (-12,+12) were estimated from the market-adjusted (zero-one) model. The monthly abnormal returns for the target and bidding firm’s shareholders from 12 months before the event month until 12 months after the event month were calculated. Then, the monthly abnormal returns were standardised and summed in cross-sectional and averaged to form the monthly total or the sum of the standardised residuals (TSRs) and the average event-period standardised residuals (ASRs) respectively. The results show the monthly TSRs and ASRs for the target and bidding firms’ shareholders. For comparison, this table demonstrates the performances of total target firms, successful, and unsuccessful target firms. Also, the performances of total bidding firms, successful, and unsuccessful bidding firms are shown in the table. To test the significance of the monthly abnormal returns, the standardised-residual and standardised cross-sectional tests were applied. The t-statistics were calculated by means of the standardised-residual test and standardised cross-sectional test respectively. The t-statistics are the sum of the standardised residuals divided by (approximately) the square root of the number of sample firms, and the average event-period standardised residual divided by its contemporaneous cross-sectional standard error respectively. The standardised residual equals the event-period residual divided by the standard deviation of the estimation-period residuals, adjusted to reflect the forecast error. The formulas are as follows: $t = \frac{1}{\sqrt{N}} \sum_{i=1}^{N} \frac{SR_i}{\sqrt{1/N(N-1) \sum_{i=1}^{N} (SR_i - \bar{SR})^2}}$. The sample sizes (N) for the target and bidding firms for each alternative are presented in the parentheses, 36 and 25 months were selected for the estimation-period and event-window consecutively. The test statistics are shown in the parentheses below the values of the TSRs and ASRs.

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<th>Target Firms</th>
<th>Successful (50 firms)</th>
<th>Unsuccessful (2 firms)</th>
<th>Market-Adjusted Model</th>
<th>Bidding Firms</th>
<th>Successful (39 firms)</th>
<th>Unsuccessful (3 firms)</th>
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TSRs = Total of the sum of standardised residuals
ASRs = Average event-period standardised residuals
*significant at 5% level
**significant at 1% level
***significant at 10% level
****significant at 20% level
This table shows the monthly average abnormal returns (AARs), the percentages of stocks with positive AARs, the cumulative average abnormal returns (CAARs), and the percentages of stocks with positive CAARs to target and bidding firms for tender offers occurring from 1992-2002. The measurement of the takeover announcement effects on the firms, the realised returns for the target and bidding firms' shareholders for the bid period (-12,+12) were measured by the market and market-adjusted (zero-one) models. The AARs are monthly abnormal returns for the target and bidding firms' shareholders from 12 months before the event month until 12 months after the event month were estimated. These were estimated then, cross-sectional averages in each month were calculated over the number of the firms. The CAARs are the AARs which are accumulated from the first month of the investigation period until the last month of the period. The positive AARs and CAARs for the target and bidding firms' shareholders for each month were counted and calculated to form the percentages for each month respectively. Thus, the percentages of stocks with positive or negative abnormal returns indicate the proportion of the stocks or firms experienced positive or negative abnormal returns to total stocks or firms. The sample sizes (N) are 52 target firms and 42 bidding firms.

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5.2 RESULTS OF THE MARKET AND MARKET-ADJUSTED (ZERO-ONE) MODEL ANALYSES FOR THE PRE-BID PERIOD

5.2.1 Results of the Analyses of Bidding Firms

5.2.1.1 Overall Average Abnormal Returns (AARs) and Cumulative Average Abnormal Returns (CAARs)

5.2.1.1.1 Bidding firm abnormal returns (pre-bid period)

Table 6 demonstrates the monthly abnormal returns for the tender offers occurring from 1992-2002. The expected returns for the bidding firm’s shareholders for the pre-bid period (-12,-1) were measured by means of the market and zero-one models respectively. The monthly abnormal returns for the bidding firm’s shareholders from 12 months before the event month until the month before the event month were calculated. Also, the cumulative abnormal returns for each month for the bidding firm’s shareholders from 12 months before the event month until the month before the event month were calculated. Table 7 presents cross-sectional total and average monthly standardised abnormal returns estimated from the market and zero-one models respectively for the pre-bid period (-12,-1) for the tender offers occurring from 1992-2002. The findings suggest that in the last month of the pre-bid period (-12,-1) (month -1), the monthly AARs estimated from the market model are insignificantly positive at 0.80%, and the CAARs over the period (-3,-1) starting twelve months before the event month and including the month before the event month, are positive at 4.00%. Table 6 shows that in month -1, the percentage of stocks with positive AARs is 38.10% which is lower than the average percentage 42.26%, but the percentage of stocks with positive CAARs is 50.00% which is higher than the average percentage 43.26%. There is evidence that the takeover information transmits into the market starting in month -3, at least, resulting in positive CAARs over the period (-3,-1) of 8.20% for the bidding firm’s shareholders. Accordingly, the average three month (-3,-1) percentage of stocks with positive monthly AARs is 46.83% compared with the average percentage of 42.26%.
For further comparison and analysis, Table 6 also shows that in month -1, the monthly AARs estimated from the zero-one model are significant and positive at 3.90% compared with the insignificant and positive values of 0.80% estimated from the market model. Table 7 confirms the significance tests by showing that in month -1, both TSRs and ASRs estimated from the zero-one model for the bidding firm’s shareholders are positive, and the TSRs are statistically significant. The CAARs over the period (-12,-1) are significant and substantially positive up to 27% compared with the insignificant positive value of 4.00% estimated from the market model (see Appendix C, Table C1).

Table 6 shows that in month -1, the average percentage of stocks with positive monthly AARs estimated from the zero-one model is 52.38% which is similar to the average percentage 52.58%, and compared with 38.10% estimated from the market model. The percentage of stocks with positive CAARs is 66.67% which is higher than the average percentage 57.54%, and compared with 50.00% estimated from the market model. The sustainability of the significant and positive monthly AARs during the period (-4,-1), at least, explains that the market perceives the takeovers as being good news and the information is available to the market four months, at least, before the takeover announcement, which is one month earlier than that estimated from the market model. The average four month (-4,-1) percentage of stocks with positive monthly AARs is 59.52% compared with the average percentage 52.58%. The CAARs over the period (-4,-1) are positive at 16% compared with the positive CAARs over the period (-3,-1) of 8.20% estimated from the market model.

In conclusion, the monthly AARs and CAARs in month -1 are 0.80% and 3.90%; and 4% and 27% as estimated from the market and zero-one models, respectively. This is completely consistent with the results over the same time period (-12,-1) from the bid period investigations for the total bidding firms and successful bidding firms, as earlier discussed. The results are also consistent with Malatesta (1983) who applies the market model and uses monthly data in the same manner as this study, and Brown and da Silva Rosa (1998) who use different methodologies from this study. In addition, there is evidence that the takeover news leaks into the market four months, estimated from the zero-one model, and three months, estimated from the market model, at least, before the announcement month. Finally, it is concluded that before the announcement month, the effect of a takeover results in positive abnormal returns for the bidding firm’s shareholders.
5.2.1.1.2 Successful bidding firm abnormal returns (pre-bid period)

Table 6 demonstrates the monthly abnormal returns for tender offers occurring from 1992-2002. The expected returns for the successful bidding firm’s shareholders for the pre-bid period (-12,-1) were measured by means of the market and zero-one models respectively. The monthly abnormal returns for the successful bidding firm’s shareholders from 12 months before the event month until the month before the event month were calculated. Also, the cumulative abnormal returns for each month for the successful bidding firm’s shareholders from 12 months before the event month until the month before the event month were calculated. Table 7 presents cross-sectional total and average monthly standardised abnormal returns estimated from the market and zero-one models respectively for the pre-bid period (-12,-1) for the successful tender offers occurring from 1992-2002. The findings show that in month -1, the monthly AARs estimated from the market model for the successful bidding firm’s shareholders are insignificantly positive at 1.40%. The evidence indicates that the takeover information spreads into the market in month -3, at least. The CAARs over the period (-3,-1) are positive at 9.60%. Therefore, the market reflects the takeover news as being good news offering positive abnormal returns to the successful bidding firm’s shareholders. The CAARs over the period (-12,-1), starting from month -12 and including month -1 are positive at 5.90%.

For further comparison and analysis, Tables 6 and 7 also show that in month -1, the monthly AARs are significant and positive at 4.10% compared with insignificant and positive at 1.40% when estimated from the market model. The CAARs over the pre-bid period (-12,-1), starting from month -12 and including month -1 are significant and positive at 26.90% compared with the insignificant and positive values of 5.90% estimated from the market model (also see Appendix C, Table C1). The sustainability of significant and positive monthly AARs explains that the market perceives the takeovers as being good news and this information is available to the market four months, at least, before the takeover announcement, which is one month earlier than estimated from the market model. The CAARs over the period (-4,-1) are positive at 17% compared with the 9.60% over the period (-3,-1) estimated from the market model. The CAARs over the period (-12,-1) are positive at 26.90% estimated from the zero-one model compared with 5.90% estimated from the market model.
In conclusion, in month-1, the monthly AARs are positive at 1.40% estimated from the market model and 4.10% estimated from the zero-one model. There is evidence that the takeover information transmits into the market about four months, when estimated from the zero-one model, and three months, when estimated from the market model, at least, before the announcement month. The CAARs over the period (-12,-1) are positive at 5.90% estimated from the market model and 26.90% estimated from the zero-one model. The results are completely consistent with those over the same time period (-12,-1) from the bid period investigations for the successful bidding firms and total bidding firms, as previously presented in the section on the successful and total bidding firm abnormal returns (bid period) respectively. Finally, it is concluded that prior to the announcement month, the effect of takeovers creates positive wealth gains for the successful bidding firm’s shareholders.

5.2.1.1.3 Unsuccessful bidding firm abnormal returns (pre-bid period)

Table 6 demonstrates the monthly abnormal returns for tender offers occurring from 1992-2002. The expected returns for the unsuccessful bidding firm’s shareholders for the pre-bid period (-12,-1) were measured by means of the market and zero-one models respectively. The monthly abnormal returns for the unsuccessful bidding firm’s shareholders from 12 months before the event month until the month before the event month were calculated. Also, the cumulative abnormal returns for each month for the unsuccessful bidding firm’s shareholders from 12 months before the event month until the month before the event month were calculated. Table 7 presents cross-sectional total and average monthly standardised abnormal returns estimated from the market and zero-one models respectively for the pre-bid period (-12,-1) for the unsuccessful tender offers occurring from 1992-2002. The results demonstrate that in month -1, the monthly AARs estimated from the market model for the unsuccessful bidding firm’s shareholders are insignificantly negative at -6.40%. There is evidence that the takeover information leaks into the market six months, at least, before the announcement month, resulting in positive abnormal returns for the unsuccessful bidding firm’s shareholders of 6.30%. This implies the market’s negative reaction due to bad news of unsuccessful takeovers. At the same time, the high volatility of the monthly AARs during the period (-7,-1), ranging from positive 10.40% to negative -7.30%, indicates that the market has doubts about the outcomes of the takeovers. As a result, the CAARs over the period (-12,-1) are positive at 5.90% estimated from the market model and 26.90% estimated from the zero-one model. The results are completely consistent with those over the same time period (-12,-1) from the bid period investigations for the successful bidding firms and total bidding firms, as previously presented in the section on the successful and total bidding firm abnormal returns (bid period) respectively. Finally, it is concluded that prior to the announcement month, the effect of takeovers creates positive wealth gains for the successful bidding firm’s shareholders.
7,-1) are negative at -4.40%. This explains that there is uncertain takeover news perceived by the unsuccessful bidding firm's shareholders before the announcement month. In addition, the largest positive monthly AARs of 10.40% for the unsuccessful bidding firm's shareholders occur in month -7. The CAARs over the period (-12,-1), starting from month -12 and including month -1 are negative at -20.70%.

For further comparison and analysis, Tables 6 and 7 also show that in month -1, the monthly AARs estimated from the zero-one model are insignificantly positive at 1.70% compared with insignificantly negative at -6.40% when estimated from the market model. The market responds to the takeover news four months, at least, before the announcement month, which is two months later than the time estimated from the market model, offering positive CAARs of 2.50% and 6.30%, respectively, to the unsuccessful bidding firm's shareholders. At the same time, the uncertainty of takeover outcomes is also perceived by the market before the announcement month. The volatility of the monthly AARs ranges from positive 11% to negative -4.70% during the period (-8,-1), compared with ranges from positive 10.40% to negative -7.30% during the period (-7,-1) as estimated from the market model. However, the unsuccessful bidding firm's shareholders experience more volatile returns when estimated from the zero-one model as compared with the market model. The CAARs over the period (-8,-1) and (-7,-1) are positive at 21.70% and negative at -4.40% respectively. The monthly AARs in month -7 are the largest positive monthly AARs of the pre-bid period (-12,-1) which are insignificant and positive at 11% compared with significant and positive at 10.40% when estimated from the market model. The CAARs over the period (-12,-1), starting from month -12 and including month -1 are positive at 28.30% compared with negative at -20.70% when estimated from the market model.

In conclusion, in month -1, the monthly AARs estimated from the market model are insignificant and negative at -6.40% compared with insignificant and positive at 1.70% when estimated from the zero-one model. There is evidence that the market responds to the takeover news six months in advance, as estimated from the market model, and four months, as estimated from the zero-one model, at least, before the announcement month, leading to negative and positive abnormal returns respectively. The market also displays concerns about the uncertainty of takeover outcomes eight months prior, when estimated from the zero-one model, and seven months, when
estimated from the market model, before the announcement month. Most of the positive abnormal returns for the unsuccessful bidding firm’s shareholders occur in month -7. The CAARs over the period (-12,-1) estimated from the market model are negative at -20.70% compared with the positive 28.30% estimated from the zero-one model. The results are consistent with those over the same time period (-12,-1) of -37.60% and 28.30% respectively from the bid period investigations for the unsuccessful bidding firms, as previously reported. Therefore, it is concluded that for the pre-bid period, the takeover announcement results in increased and decreased wealth gains for the unsuccessful bidding firm’s shareholders, estimated from the zero-one and market models respectively.

5.2.1.1.4 Comparisons between successful and unsuccessful bidding firms during the pre-bid period

To study takeover effects on the bidding firms for the pre-bid period (-12,-1), in addition to separately investigating the performances of the successful and unsuccessful bidding firms, a comparison of the effects of the takeovers on the successful and unsuccessful bidding firms was undertaken, the differences were analysed and the results are presented in Tables 6 and 7 (also see figure 3).

The results show that in month -1, the successful bidding firm’s shareholders realise insignificant and positive monthly AARs of 1.40% as estimated from the market model and significant and positive of 4.10% as estimated from the zero-one model. The CAARs over the period (-12,-1) are positive at 5.90% estimated from the market model and 26.90% when estimated from the zero-one model. The unsuccessful bidding firm’s shareholders earn insignificant and negative monthly AARs of -6.40% estimated from the market model and insignificant positive monthly AARs of 1.70% estimated from the zero-one model; and negative CAARs of -20.70% as estimated from the market model plus positive CAARs of 28.30% when estimated from the zero-one model. The successful bidding firm’s shareholders positively react to the takeovers as potential good news four months prior, according to the zero-one model, and three months prior, as indicated by the market model, at least, before the announcement month, gaining positive CAARs of approximately 17% and 9.60% suggested by the zero-one and market models respectively. The unsuccessful bidding firm’s shareholders respond to
the takeover news six months prior, by the market model's metrics, and four months
prior, according to the zero-one model, at least, before the announcement month,
earning positive abnormal returns of about 6.30% and 2.50% consecutively. Given the
market's concerns about takeover outcomes, the monthly AARs fluctuate all the time
during the period (-8,-1), as indicated by the zero-one model, and (-7,-1), suggested by
the market model, resulting in positive and negative CAARs of 21.70% and -4.40%,
respectively, for the unsuccessful bidding firm's shareholders. Most of the positive
abnormal returns to the unsuccessful bidding firm's shareholders occur in month -7,
with the significant and positive monthly AARs of 10.40%, (market model), and
insignificant and positive monthly AARs of 11%, (zero-one model). As for the period
(-12,-1), the successful and unsuccessful bidding firms' shareholders earn positive
CAARs of 5.90% and 26.90%; and negative CAARs of -20.70% and positive CAARs
of 28.30%, as indicated by the market and zero-one models, respectively.

In conclusion, most of the results for the successful and unsuccessful bidding
firms' shareholders are different. In month -1, the monthly AARs for the successful
bidding firm's shareholder are positive at 1.40% and 4.10%, (market and zero-one
models respectively), compared with positive 1.70% and negative -6.40%, estimated
from the zero-one and market models consecutively, for the unsuccessful bidding firm's
shareholders. The CAARs over the period (-12,-1) are positive at 5.90% and 26.90%
estimated from the market and zero-one models respectively for the successful bidding
firm's shareholders, compared with positive 28.30% and negative -20.70% estimated
from the zero-one and market models consecutively for the unsuccessful bidding firm's
shareholders. Even though, there is similar evidence about the available takeover news
in the market before the announcement month, the market reactions are relatively
different. Also, the unsuccessful bidding firm's shareholders' apparent concerns are
displayed in uncertainty about takeover outcomes eight months beforehand, estimated
from the zero-one model, and seven months prior, estimated from the market model, in
relation to the announcement month. Meanwhile, this evidence is not paralleled in the
successful bidding firm investigations. Finally, the results coincide with those over the
same time period (-12,-1) from successful and unsuccessful bidding firms investigations
for the bid period. It is concluded that for the pre-bid period, the takeover announcement
offers positive wealth gains to the successful bidding firm's shareholders and
substantially increases and decreases in wealth gains, estimated from the zero-one and market models respectively, for the unsuccessful bidding firm’s shareholders.

**Summary of results of the market and market-adjusted (zero-one) model analyses for the bid and pre-bid periods for the target and bidding firms**

In conclusion, the findings from the bid period investigations suggest that on average, a takeover typically results in substantial positive gains for the target firm’s shareholders and substantial positive gains, but on a smaller scale than the gains for the target firm’s shareholders, when estimated from the zero-one model, and small losses, when estimated from the market model, for the bidding firm’s shareholders. Both successful and unsuccessful takeovers enhance the positive abnormal returns for the target firm’s shareholders in each time period: before the announcement, in the announcement, and after the announcement month. Meanwhile, the results estimated from the market model suggest that the successful bidding firm’s shareholders benefit from the takeover announcement more than the unsuccessful bidding firm’s shareholders in each time period; the results estimated from the zero-one model suggest that the unsuccessful bidding firm’s shareholders receive much greater benefits from the attempted takeover than the successful bidding firm’s shareholders in each time period: before the announcement (-12,-1), in the announcement (-12,0), and after the announcement month (+1,+12) or (-12,+12).

The findings from the pre-bid period investigations suggest that before the announcement month, the effect of a potential takeover leads to positive abnormal returns for the bidding firm’s shareholders. Also, the results present that the takeover announcement offers positive wealth gains to the successful bidding firm’s shareholders and substantially increases and decreases in wealth gains, when estimated from the zero-one and market models respectively, for the unsuccessful bidding firm’s shareholders.
The first panel presents the monthly average abnormal returns (AARs) and the cumulative average abnormal returns (CAARs) to bidding firms for tender offers occurring from 1992-2002. The measurement of the takeover announcement effects on the firms, the realised returns for the bidding firms' shareholders for the bid period (-12,-1) were measured by the market and market-adjusted (zero-one) models. Two years (24 months) (-36,-12) was determined for the estimation period and one year (12) months (-12,-1) was given for the event window. The AARs are monthly abnormal returns for the bidding firm's shareholders from 12 months before the event month until the month before the event month. These were estimated then, cross-sectional averages in each month were calculated over the number of the firms. The CAARs are the AARs which are accumulated from the first month of the investigation period until the last month of the period. For comparison, this table demonstrates the performances of total bidding firms, successful, and unsuccessful bidding firms. The sample sizes (N) for the bidding firms for each alternative are presented in the parentheses. The second panel shows the percentages of stocks with positive AARs and CAARs. The positive AARs and CAARs for the bidding firm's shareholders in each month were counted and calculated to form the percentages for each month respectively. Thus, the percentages of stocks with positive or negative abnormal returns indicate the proportion of the stocks or firms experienced positive or negative abnormal returns in total stocks or firms. The sample size (N) is 42 firms.

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<td>0.008</td>
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<table>
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<tr>
<th>Event Month</th>
<th>Percentage of stocks with positive AARs</th>
<th>CAARs</th>
<th>Percentage of stocks with positive CAARs</th>
<th>AARs</th>
<th>Percentage of stocks with positive AARs</th>
<th>CAARs</th>
<th>Percentage of stocks with positive CAARs</th>
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<tr>
<td>-12</td>
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<td>0.066</td>
<td>52.38</td>
<td>0.066</td>
<td>52.38</td>
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<tr>
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<td>-0.028</td>
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<td>35.71</td>
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<tr>
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<td>35.71</td>
<td>-0.028</td>
<td>35.71</td>
<td>-0.028</td>
<td>35.71</td>
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<td>61.90</td>
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<td>66.67</td>
<td>0.029</td>
<td>66.67</td>
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</tbody>
</table>

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Table 7

Bidding Firm Investigation (Pre-bid Period)

This table presents the cross-sectional total and average monthly standardised abnormal returns (residuals) for the pre-bid period (-12,-1) for tender offers occurring from 1992-2002. Specifically, the realised returns for the bidding firm’s shareholders for the bid period (-12,-1) were estimated from the market and market-adjusted (zero-one) models. The monthly abnormal returns for the bidding firm’s shareholders from 12 months before the event month until the month before the event month were calculated. Then, the monthly abnormal returns were standardised and cross-sectionally summed and averaged to form the monthly total or the sum of the standardised residuals (TSRs) and the average event-period standardised residuals (ASRs) respectively. The results show the monthly TSRs and ASRs for the bidding firm’s shareholders. For comparison, this table demonstrates the performances of total bidding firms, successful, and unsuccessful bidding firms. To test the significance of the monthly abnormal returns, the standardised-residual and standardised cross-sectional tests were applied. The t-statistics were calculated by means of the standardised-residual test and the standardised cross-sectional test respectively. The t-statistics are the sum of the standardised residuals divided by (approximately) the square root of the number of sample firms, and the average event-period standardised residual divided by its contemporaneous cross-sectional standard error respectively. The standardised residual equals the event-period residual divided by the standard deviation of the estimation-period residuals, adjusted to reflect the forecast error. The formulas are as follows:

\[
t = \frac{\sum_{i=1}^{N} SR_{it}}{\sqrt{N}}
\]

\[
t = \frac{1}{N} \sum_{i=1}^{N} SR_{it} \sqrt{\frac{1}{N(N-1)} \sum_{i=1}^{N} (SR_{it} - \bar{SR})^2}
\]

The sample sizes (N) for the bidding firms for each alternative are presented in the parentheses, 24 and 12 months were selected for the estimation-period and event-window consecutively. The test statistics are shown in the parentheses below the values of the TSRs and ASRs.

<table>
<thead>
<tr>
<th>Event Month</th>
<th>Total (42 firms)</th>
<th>Market Model</th>
<th>Market and Market-Adjusted Models</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TSRs ASRs</td>
<td>Successful (39 firms)</td>
<td>TSRs ASRs</td>
</tr>
<tr>
<td>-12</td>
<td>18.802 0.448</td>
<td>20.994 0.538</td>
<td>-2.192 -0.731</td>
</tr>
<tr>
<td></td>
<td>(2.77)** (1.34)</td>
<td>(3.21)** (1.51)</td>
<td>(-1.21) (-4.45)*</td>
</tr>
<tr>
<td>-11</td>
<td>112.986 2.690</td>
<td>113.917 2.921</td>
<td>-0.932 -0.314</td>
</tr>
<tr>
<td></td>
<td>(16.62)**(1.41)</td>
<td>(17.39)**(1.42)</td>
<td>(-0.31) (-0.33)</td>
</tr>
<tr>
<td>-10</td>
<td>-23.394 -0.567</td>
<td>-21.975 -0.563</td>
<td>-1.819 -0.606</td>
</tr>
<tr>
<td></td>
<td>(-3.50)**(-2.06)*</td>
<td>(-3.36)**(-1.94)</td>
<td>(-1.00) (-5.98)</td>
</tr>
<tr>
<td>-9</td>
<td>20.027 0.477</td>
<td>19.673 0.504</td>
<td>0.354 0.118</td>
</tr>
<tr>
<td></td>
<td>(2.95)** (0.53)</td>
<td>(3.00)** (0.52)</td>
<td>(0.19) (0.37)</td>
</tr>
<tr>
<td>-8</td>
<td>-13.320 -0.317</td>
<td>-13.975 -0.338</td>
<td>0.694 0.216</td>
</tr>
<tr>
<td></td>
<td>(-1.96) (-0.60)</td>
<td>(-2.13)* (-0.68)</td>
<td>(0.36) (0.12)</td>
</tr>
<tr>
<td>-7</td>
<td>6.867 0.164</td>
<td>2.862 0.073</td>
<td>4.005 1.335</td>
</tr>
<tr>
<td></td>
<td>(1.91) (0.47)</td>
<td>(4.44) (0.20)</td>
<td>(2.20) (1.73)</td>
</tr>
<tr>
<td>-6</td>
<td>13.901 0.331</td>
<td>6.303 0.162</td>
<td>7.598 2.533</td>
</tr>
<tr>
<td></td>
<td>(2.05)** (0.90)</td>
<td>(4.06) (0.67)</td>
<td>(4.18) (0.55)</td>
</tr>
<tr>
<td>-5</td>
<td>9.820 -0.234</td>
<td>-8.294 -0.213</td>
<td>-1.326 -0.509</td>
</tr>
<tr>
<td></td>
<td>(-1.44) (-1.29)</td>
<td>(-1.27) (-1.12)</td>
<td>(-0.84) (-0.75)</td>
</tr>
<tr>
<td>-4</td>
<td>3.444 0.082</td>
<td>5.366 0.138</td>
<td>-1.922 -0.641</td>
</tr>
<tr>
<td></td>
<td>(0.51) (0.42)</td>
<td>(8.82) (0.68)</td>
<td>(-1.06) (-1.61)</td>
</tr>
<tr>
<td>-3</td>
<td>65.433 1.538</td>
<td>64.270 1.648</td>
<td>1.164 0.388</td>
</tr>
<tr>
<td></td>
<td>(9.63)** (1.70)</td>
<td>(9.87)** (1.67)</td>
<td>(0.64) (0.60)</td>
</tr>
<tr>
<td></td>
<td>TSRs</td>
<td>ASRs</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>------</td>
<td>------</td>
<td>---</td>
</tr>
<tr>
<td>2</td>
<td>22.489</td>
<td>0.537</td>
<td>25.935</td>
</tr>
<tr>
<td>(3.31)**</td>
<td>(1.01)</td>
<td>(3.96)**</td>
<td>(1.19)</td>
</tr>
<tr>
<td>-1</td>
<td>9.604</td>
<td>0.229</td>
<td>12.748</td>
</tr>
<tr>
<td>(1.41)</td>
<td>(0.49)</td>
<td>(1.95)</td>
<td>(0.66)</td>
</tr>
</tbody>
</table>

TSRs = Total or the sum of standardised residuals
ASRs = Average event-period standardised residuals
*significant at 5% level
**significant at 1% level
*significant at 10% level
*significant at 20% level
CHAPTER 6
RESULTS OF THE BID, PRE-BID AND POST-BID PERIODS

This chapter discusses the results of the further analyses undertaken to strengthen the findings that were reported in Chapter 5 and also to provide a variety of results from several metrics. It is divided into five sections: the first discusses the results of the characteristic target and bidding firms estimated from the market and market-adjusted (zero-one) models for the bid and pre-bid periods, (-12,+12) and (-12,-1). Specifically, the results of the five and seven specific characteristic target and bidding firms are also presented. It also includes the results of the matched reference portfolio method analyses for the bid and post-bid periods, (-12,+12) and (+1,+16), for both the target and bidding firms, and only the bidding firms, respectively. In addition the total gains available to the target and bidding firms, the combined values of target and bidding firms, and the results of an analysis of the potential motives for the takeovers are presented. The results are shown and explained in terms of the performances of the average abnormal returns (AARs), cumulative average abnormal returns (CAARs), and buy-and-hold average abnormal returns (ABHARs). The main issues are the size and signs of these abnormal returns and whether or not they are significantly different from zero. The first section shows the results of the AARs, CAARs, and ABHARs of the market and market-adjusted (zero-one) model analyses for the characteristic and specific characteristic target and bidding firms for the bid and pre-bid period investigations, and the other results are presented in the remaining sections of the chapter.

6.1 RESULTS OF THE MARKET AND MARKET-ADJUSTED (ZERO-ONE) MODEL ANALYSES FOR THE BID AND PRE-BID PERIODS

6.1.1 Results of the Analyses of Characteristic Target and Bidding Firms

6.1.1.1 Overall Average Abnormal Returns (AARs) and Cumulative Average Abnormal Returns (CAARs)
In this section I will review the performances of the average abnormal returns (AARs) and cumulative average abnormal returns (CAARs) displayed to characteristic target and bidding firms. The key issues are the size and signs of these abnormal returns and whether they are significantly different from zero or not. Only the CAARs over the period (-12,0), or during the announcement month, for the bid period investigations; and over the period (-12,-1), or before the announcement month, for the pre-bid period investigations will be discussed in this section. Meanwhile, the performances post the announcement month will be analysed in the next section. There are 26 alternatives for target firm (bid period) investigations (accordingly, these 26 alternatives or sub-sets of the targets will be called the characteristic target firms) and 79 alternatives for bidding firm (pre-bid and bid periods) investigations (accordingly, these 79 alternatives or sub-sets of the bidders will be called the characteristic bidding firms). To have a comprehensive picture of takeover effects on the wealth of the event firms, these alternatives are classified into three groups for analyses: alternative 1-7, 8-14, and 15-26 for target firm investigations, and alternative 1-12 (excluding alternative 9), 13-23, and 24-79 for bidding firm investigations. Also, the results are presented and explained relative to these three groups of the alternatives. The characteristics of each alternative including only the results of the CAARs, ABHARs, ATSRs, and AASRs analyses over the period (-12,+12) are shown in Appendix B, Table B1 and Appendix C, Table C1 consecutively (also see Table 8 for a summary of the results).

45 Since the alternative 9 is excluded for comparisons because the sample is limited n=1 and df=0, the investigation alternatives reduce from 79 to 78 alternatives.
46 The alternative 9 is excluded for the comparisons because n=1 and df=0.
47 ATSRs are the means of the sum of standardised abnormal returns and AASRs are the means of the average event-period standardised abnormal returns.
Table 8

Summary of Results Estimated from the Market and Market-Adjusted Models for Characteristic Target Firms* (Bid Period) and Characteristic Bidding Firms** (Bid and Pre-bid Periods) Investigations

<table>
<thead>
<tr>
<th>Sample</th>
<th>CAARs (-12,0)</th>
<th>CAARs (-12,+12)</th>
<th>ABHARs (-12,+12)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The characteristic target firms (Bid Period)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market Model</td>
<td>2.50% to 89.70%</td>
<td>41.70% to 88.70%</td>
<td>53%</td>
</tr>
<tr>
<td>Market-Adjusted Model</td>
<td>11.90% to 104.60%*</td>
<td>32.90% to 73.20%</td>
<td>49.80% to 59.40%</td>
</tr>
<tr>
<td><strong>The characteristic bidding firms (Bid Period)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market Model</td>
<td>-124.80% to 76.70%</td>
<td>-33.90% to -90.60%</td>
<td>165.80%, -26.10% to -95.50%</td>
</tr>
<tr>
<td>Market-Adjusted Model</td>
<td>-51.80% to 79.30%</td>
<td>25.40% to 69.10%</td>
<td>43.80%</td>
</tr>
<tr>
<td><strong>Sample</strong></td>
<td>CAARs (-12,-1)</td>
<td>ABHARs (-12,-1)</td>
<td></td>
</tr>
<tr>
<td>Market Model</td>
<td>41.30% to 53.30%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Market-Adjusted Model</td>
<td>8.20% to 79.70%</td>
<td>19.80% to 100.30%</td>
<td></td>
</tr>
</tbody>
</table>

Note: 1. CAARs=cumulative average abnormal returns  
2. ABHARs=average buy-and-hold abnormal returns  
3. According to the conventional t tests, the results of the significance tests for the CAARs and ABHARs over the period (-12,+12) for the bid period investigations, and the CAARs and ABHARs over the period (-12,-1) for the pre-bid period investigations are significant.  
* There are 26 alternatives for target firm (bid period) investigations (accordingly, these 26 alternatives or sub-sets of the targets are called the characteristic target firms).  
** There are 79 alternatives (the alternative 9 is excluded for the comparisons because n=1 and df=0) for bidding firm (pre-bid and bid periods) investigations (accordingly, these 79 alternatives or sub-sets of the bidders are called the characteristic bidding firms).  
* Since only 1 from a total of 26 alternatives shows the negative CAARs of -2.20%, it is inferred that on average, the takeover effects on these firms are positive.
6.1.1.1 Characteristic target and bidding firms

Bid period investigations

(1) The characteristic target firms (bid period)

It is suggested that on average, or in month 0, the takeover announcement results in significant positive monthly AARs for each alternative varying from 7-8% to 37-40%, and the positive cumulative average abnormal returns varying from 3% to 90%, as observed from the market model, and 12% to 105%, as observed from the zero-one model, for the characteristic target firm’s shareholders (see Table 8). Also, the takeover announcement effects are positive around the announcement month, with positive CAARs varying from 28% to 47% for the characteristic target firms’ shareholders. Moreover, it is noted that the findings are strongly consistent with those observed from the total target firm investigations, as earlier discussed in the discussion of target firm abnormal returns (bid period).

(2) The characteristic bidding firms (bid period)

The results explain that on average, the takeover announcement results in significant negative monthly AARs for each alternative varying from -3% to -14%, and both positive and negative cumulative average abnormal returns that vary from -52% to 79%, as observed from the zero-one model, and -125% to 77%, as observed from the market model to the characteristic bidding firms’ shareholders (see Table 8). Moreover, these findings are entirely supportive of those observed from the total bidding firm investigations, as earlier discussed in the section on bidding firm abnormal returns (bid period).

Pre-bid period investigations

(3) The characteristic bidding firms (pre-bid period)

Since the space is limited, twelve tables for the results of AARs, CAARs, TSRs, and ASRs for each alternative of the investigations for target firms (bid period) (26 alternatives), bidding firms (bid period) (79 alternatives), and bidding firms (pre-bid period) (79 alternatives) cannot be shown in this thesis. However, the overview results of the period (-12,+12) for these investigation alternatives are presented in Appendix B, Table B1 and Appendix C, Table C1. Also, some were selected as the interesting characteristic firms for takeover activities on the SET. The graphic forms of these firms’ performances are shown in figures 2, 3, and figures D1-6 in Appendix D.
The results indicate that on average, the takeover announcement results in significant positive monthly abnormal returns varying from 0.30% to 9%, as observed from the market model, 2% to 15%, as observed from the zero-one model, and negative monthly abnormal returns of -3%, as observed from the zero-one model, for the characteristic bidding firms’ shareholders. These findings are partly consistent with those observed from the total bidding firm investigations, as earlier discussed in the section on the bidding firm abnormal returns (pre-bid period), suggesting that in month -1, the monthly AARs are positive. However, they are significantly positive at 4%, as observed from the zero-one model, but they are insignificantly positive at 0.80%, when calculated by the market model. Nevertheless, the more essential results are robust, that is the finding that the takeover announcement leads to significant positive cumulative average abnormal returns varying from 18% to 80% as observed from the zero-one model and 41% to 53% as observed from the market model for the characteristic bidding firm’s shareholders (see Table 8).

6.1.1.2 The Cumulative Average Abnormal Returns (CAARs) and Average Buy-and-Hold Abnormal Returns (ABHARs) post the Announcement Month

In addition to examining the cumulative average abnormal returns (CAARs) over the period (-12,-1), (-12,0), and (-12,+12), as previously reported, it is important to analyse the cumulative average abnormal returns (CAARs) and average buy-and-hold abnormal returns (ABHARs) for the target and bidding firms’ shareholders, especially in terms of establishing the result’s robustness. At the same time, due to the similar basic natures of the two utilised methods, as earlier discussed in chapter 3, the abnormal returns over the period (-12,+12) or after the announcement month, for the bid period investigations; and over the period (-12,-1) or before the announcement month, for the pre-bid period investigations, were measured by means of the cumulative abnormal return (CAR) and buy-and-hold abnormal return (BHar) approaches so as to be able to directly compare them. Therefore, in this section these results were analysed. Moreover, three parametric statistical tests: a standardised-residual, a standardised cross-sectional, and conventional t-tests, were applied to test the significance of the abnormal returns for the target and bidding firms’ shareholders. There are 26 alternatives for target firm (bid period) investigations (as previously mentioned, these 26 alternatives or sub-sets of the targets are called the characteristic target firms) and 79 alternatives for bidding firm
(pre-bid and bid periods) investigations (as earlier mentioned, these 79 alternatives or sub-sets of the bidders are called the characteristic bidding firms). To have a comprehensive picture of takeover effects on the wealth of the event firms, these previously mentioned alternatives are classified into three groups for analyses: alternative 1-7, 8-14, and 15-26 for target firm investigations, and alternative 1-12 (excluding alternative 9), 13-23, and 24-79 for bidding firm investigations. Accordingly, the results are presented and explained relative to these three groups of the alternatives which are summarised in Appendix B, Table B1 and Appendix C, Table C1 respectively (also see Table 8 for a summary of the results).

6.1.1.2.1 Characteristic target and bidding firms

**Bid period Investigations**

*(1) The characteristic target firms (bid period)*

The results suggest that the takeover announcement increases positive abnormal returns over the period (-12,+12) for the characteristic target firms’ shareholders. The significantly positive CAARs and ABHARs vary from 33% to 89% and 50% to 59% consecutively (see Table 8). Moreover, it is worth noting that the findings are consistent with those observed from the all target firm investigations, as shown in Appendix B, Table B1, for all target firms together. The results reported show that the CAARs over the period (-12,+12) are significantly positive at 41% and 47%, the ABHARs over the period (-12,+12) are positive at 38% and 147%, but insignificant, and the ATSRs and AASRs are positive, but insignificant. However, it is noted that about 76.92% (20 alternatives) and 26.92% (7 alternatives) of the CAARs, and the same percentages of approximately 92.31% (24 alternatives) of the ABHARs estimated from the market and zero-one models, respectively, for the characteristic target firms’ shareholders that are insignificant (see details in Appendix B, Table B1).

*(2) The characteristic bidding firms (bid period)*

The results suggest that post the announcement month, the takeover announcement leads to positive and negative abnormal returns for the characteristic bidding firms’ shareholders. That is the significant positive CAARs over the period (-12,+12) vary from 25% to 69%, as observed from the zero-one model, and the
significant negative CAARs over the same time period vary from -34% to -91%, as observed from the market model. The significant positive ABHARs are 44%, when observed from the zero-one model, and 166%, when observed from the market model, and the significant negative ABHARs vary from -26% to -96%, when calculated by the market model (see Table 8). Furthermore, it is noted that these findings are consistent with those observed from the all bidding firm investigations, as summarised in Appendix C, Table C1, for all bidding firms together. The results show that the CAARs over the period (-12,+12) are positive at 18% and negative at -29%, but insignificant, the ABHARs over the period (-12,+12) are positive at 16% and negative at -3%, but insignificant, and the ATS Rs and AASRs are positive, but insignificant. Nevertheless, there are between 60.76% and 86.08% (48 and 68 alternatives) of the CAARs, and approximately 70.89% and 98.73% (56 and 78 alternatives) of the ABHARs estimated from the market and zero-one models, consecutively, for the characteristic bidding firms' shareholders that are insignificant (see details in Appendix C, Table C1).

Pre-bid period investigations

(3) The characteristic bidding firms (pre-bid period)

The results show that the takeover announcement results in positive abnormal returns over the period (-12,-1) for the characteristic bidding firms' shareholders. That is the significant positive CAARs vary from 18% to 80%, as observed from the zero-one model, and 41% to 53%, when calculated by the market model. The significant positive ABHARs vary from 20% to 100%, as observed from the zero-one model (see Table 8). In addition, it seems that the findings are consistent with those observed from the all bidding firm investigations (pre-bid period), as presented in Appendix C, Table C1, for all bidding firms together. The results show that the CAARs and ABHARs over the period (-12,-1) are significantly positive at 27% and 29% consecutively, the ATS Rs are significantly positive also, the AASRs are positive, but insignificant. It is worth noting that about 96.20% (76 alternatives) and 58.23% (46 alternatives) of the CAARs estimated from the market and zero-one models respectively are insignificant. Meanwhile, all results of the ABHARs estimated from the market model and approximately 62.03% (49 alternatives) of those estimated from the zero-one model, for the characteristic bidding firms' shareholders that are insignificant (see details in Appendix C, Table C1).
6.1.2 Results of the Analyses of the Five Specific Characteristic Target and Bidding Firms

6.1.2.1 Overall Average Abnormal Returns (AARs) and Cumulative Average Abnormal Returns (CAARs)

To show the remarkable characteristics of the firms involved in the events taking place on the SET, the five specific characteristic target and bidding firms were selected for an investigation of takeover effects. Therefore, in this section I will review the performances of the average abnormal returns (AARs) and cumulative average abnormal returns (CAARs) for the five specific characteristic target and bidding firms’ shareholders. The key issues are the size and signs of these abnormal returns and whether they are significantly different from zero or not. For the five specific characteristic target firms (bid period) investigations, those firms later placed in “REHABCO”, those later delisted, the total subject to repeated bids, the prior selected repeated, and the later selected repeated target firms were analysed. For the five specific characteristic bidding firms (pre-bid and bid periods) investigations, the single, the consortium, the total repeated, the prior selected, and the later selected repeated bidding firms were analysed. The characteristics of each specific firm including only the results of the CAARs, ATSRs, and AASRs over the period (-12,+12) are shown in Appendix B, Table B1 and Appendix C, Table C1 respectively.

6.1.2.1.1 The five specific characteristic target firms (bid period)

(1) The later placed in “REHABCO” target firms
(2) The later delisted target firms
(3) The total repeated target firms
(4) The prior selected repeated target firms
(5) The later selected repeated target firms

6.1.2.1.2-3 The five specific characteristic bidding firms (bid and pre-bid periods)

(1) The single bidding firms
(2) The consortium bidding firms
(3) The total repeated bidding firms
(4) The prior selected repeated bidding firms
The later selected repeated bidding firms

The results of the five specific characteristic target firms bid period investigations suggest that nearly all or in percentage term about 90% of these target firms gain positive CAARs over the period (-12,0) ranging from 3% to 105%. Only the later placed in “REHABCO” target firm’s shareholders suffer negative CAARs of -2.20%, when estimated from the zero-one model. Furthermore, approximately 80% of the CAARs over the period (-12,+12) realised by these firms are positive explained by the fact that the positive CAARs in month 0 are sustainable until after the announcement month. The positive CAARs vary from 8% to 128%, except for the negative CAARs of -11% to 19% for the companies later in “REHABCO” target firm’s shareholders. Meanwhile, the results of the five specific characteristic bidding firms bid period investigations suggest that 70% of the CAARs over the period (-12,0) are positive ranging from 8% to 79%, and these positive abnormal returns are maintained until after the announcement month. At the same time, the five specific characteristic bidding firms pre-bid period investigations demonstrate that as much as 70% of the CAARs over the period (-12,-1) are positive ranging from 14% to 80%. Thus, it can be concluded that for the bid period investigations, the takeover announcement results in positive abnormal returns for most of the five specific characteristic target and bidding firms’ shareholders in the announcement and after the announcement month. As for the pre-bid period investigations, the takeover announcement leads to positive abnormal returns for most of the five specific characteristic bidding firms’ shareholders before the announcement month (see Figure 2).
Figure 2. CAARs Estimated from the Market and Market-Adjusted (Zero-one) Models Applied to the Five Specific Characteristic Target and Bidding Firms: the Later in "REHABCO", Later Delisted, Total Repeated, Prior Selected, and Later Selected Target Firms (Bid Period); and the Single, Consortium, Total Repeated, Prior Selected, and Later Selected Bidding Firms (Bid and Pre-bid Periods).
6.1.3 Results of the Analyses of the Seven Specific Characteristic Target and Bidding Firms

6.1.3.1 The Cumulative Average Abnormal Returns (CAARs) and Average Buy-and-Hold Abnormal Returns (ABHARs)

It is informative to study the outstanding characteristics of the takeovers taking place on the SET, the seven specific characteristic target and bidding firms were selected to investigate takeover effects. At the same time, to strengthen the results in relation to the abnormal returns available to the event firms, and in addition to measuring the abnormal returns using the cumulative abnormal return (CAR) approach, the buy-and-hold abnormal return (BHAR) approach was also used. The three parametric statistical tests: standardised-residual, standardised cross-sectional, and conventional t-tests, were applied to test the significance of the abnormal returns for the target and bidding firms’ shareholders. Therefore, in this section I will review the performances of the cumulative average abnormal returns (CAARs), average buy-and-hold abnormal returns (ABHARs), the means of the sum of standardised abnormal returns (ATSRs), and the means of the average event-period standardised abnormal return (AASRs) over the period (-12,+12) for the target and bidding firms’ shareholders, especially in terms of the return comparisons. The key issues are the size and signs of these abnormal returns and whether they are significantly different from zero or not. For the seven specific characteristic target firms (bid period) investigations, the successful, the unsuccessful, the later in “REHABCO”, the later delisted, the total repeated, the prior selected repeated, and the later selected repeated target firms were analysed. For the seven specific characteristic bidding firms (pre-bid and bid periods) investigations, the successful, the unsuccessful, the single, the consortium, the total repeated, the prior selected repeated, and the later selected repeated bidding firms were analysed. The characteristics of each specific firm including its results are summarised in Appendix B, Table B1 and Appendix C, Table C1 respectively.

6.1.3.1.1 The seven specific characteristic target firms (bid period)

(1) The successful target firms
(2) The unsuccessful target firms
(3) The later in "REHABCO" target firms
(4) The later delisted target firms
(5) The total repeated target firms
(6) The prior selected target firms
(7) The later selected target firms

6.1.3.1.2-3 The seven specific characteristic bidding firms (bid and pre-bid periods)

(1) The successful bidding firms
(2) The unsuccessful bidding firms
(3) The single bidding firms
(4) The consortium bidding firms
(5) The total repeated bidding firms
(6) The prior selected bidding firms
(7) The later selected bidding firms

The investigations of the seven specific characteristic target firms bid period show that 71% of the results suggest that the takeover effect after the announcement month or over the period (-12,+12) on the seven specific characteristic target firms is positive. Also, about 71% of the abnormal return performances indicate the ABHARs over the period (-12,+12) for the seven specific characteristic target firms' shareholders are greater than the CAARs over the same time period. Meanwhile, the investigations of the seven specific characteristic bidding firms bid period reveal that the takeover effect after the announcement month or over the period (-12,+12) on the seven specific characteristic bidding firms is mixed: positive; positive and negative; and negative, for each of these characteristic firms. However, the evidence indicates that the takeover effect on these firms is positive as well as positive and negative with the same percentage of 43%. In addition, approximately 57% of the abnormal return performances show the ABHARs over the period (-12,+12) for the seven specific characteristic bidding firms' shareholders are greater than the CAARs over the same time period. At the same time, the investigations of the seven specific characteristic bidding firms for pre-bid period suggest that 57% of the results explain that the takeover effect before the announcement month or over the period (-12,-1) on the seven specific characteristic bidding firms is positive. Up to 93% of the abnormal return performances, displayed by the ABHARs over the period (-12,-1), for the seven specific characteristic bidding firms' shareholders are greater than the CAARs over the same time period.
Finally, it is concluded that for the bid period investigations, the takeover results in positive and positive as well as negative effects on the wealth of the most seven specific target and bidding firms' shareholders respectively, after the announcement month. Meanwhile, for the pre-bid period investigations, the takeover leads to positive effects on the wealth of the most seven specific bidding firms' shareholders, before the announcement month (see Appendix B, Table B1 and Appendix C, Table C1 for CAARs and ABHARs performances; see Figure 2 and Figure 3 for CAARs movement; also see Appendix D, Figure D1 and Figure D2 for ABHARs movement of target firms; Figure D3 and Figure D4 for ABHARs movement of bidding firms; Figure D5 and Figure D6 for ABHARs movement of bidding firms (pre-bid period)).

Summary of results of the market and market-adjusted (zero-one) model analyses for the bid period and pre-bid periods for the characteristic target and bidding firms

In conclusion, the results of the investigations for characteristic target and bidding firms for the bid period are strongly consistent with those observed from the total target and bidding firms bid period investigations. Meanwhile, the results of the investigations for characteristic bidding firms for the pre-bid period suggest that in the announcement month, the takeover increases both positive and negative monthly abnormal returns. These findings are partly consistent with those observed from the total bidding firm pre-bid period investigations, showing that in month -1, the monthly AARs are positive. However, the more essential results are robust, in that the takeover announcement leads to significant positive cumulative average abnormal returns for the characteristic bidding firm's shareholders.

Also, the results for the characteristic target firms bid period investigations suggest that the takeover announcement enhances significant positive CAARs and ABHARs over the period (-12, +12) for the characteristic target firms' shareholders, supporting those observed from the all target firm investigations. Likewise, the results for the characteristic bidding firms bid period investigations explain that the takeover announcement leads to significant positive and negative CAARs and ABHARs over the period (-12, +12) for the characteristic bidding firms' shareholders, according to those observed from the all bidding firm investigations. Meanwhile, the results for the characteristic bidding firms pre-bid period investigations indicate that the takeover

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announcement results in significant positive CAARs and ABHARs over the period (-12,-1) for the characteristic bidding firms' shareholders which are consistent with those observed from the all bidding firm pre-bid period investigations.

The results of the investigations for the five specific characteristic target and bidding firms bid period suggest that the takeover announcement generates positive abnormal returns for most of the five specific characteristic target and bidding firms' shareholders in the announcement and after the announcement month. As for the pre-bid period investigations, the takeover announcement increases positive abnormal returns for most of the five specific characteristic bidding firms' shareholders before the announcement month. Moreover, the results of the investigations, indicated by positive CAARs and/or ABHARs, for the seven specific characteristic target and bidding firms bid period show positive and positive as well as negative takeover effects on the wealth of most of the seven specific target and bidding firms' shareholders respectively, after the announcement month or over the period (-12,+12). Meanwhile, the results from the pre-bid period investigations suggest that the takeover effect on the wealth of most of the seven specific bidding firms' shareholders before the announcement month or over the period (-12,-1) is positive. In addition, approximately 74% of the overall results reveal that the ABHARs are greater than CAARs.
Figure 3. CAARs Estimated from the Market and Market-Adjusted (Zero-one) Models Applied to the Successful, Unsuccessful, and All Target Firms (Bid Period); and the Successful, Unsuccessful, and All Bidding Firms (Bid and Pre-bid Periods).
6.2 RESULTS OF THE MATCHED REFERENCE PORTFOLIO METHOD ANALYSES FOR THE BID AND POST-BID PERIODS

6.2.1 Bid Period Investigations

According to the methodologies described in chapter 3, for the bid period investigations, the market and market-adjusted (zero-one) models as well as the matched reference portfolio method were to be used for the abnormal return estimations. Explicitly, in addition to the cumulative abnormal return (CAR) and buy-and-hold abnormal return (BHAR) methods were applied for the measurements of the abnormal returns estimated from the market and zero-one models, these two approaches: the CAR and BHAR (three different formulas) were applied for the measurement of the abnormal returns estimated from the matched reference portfolio method, for the target and bidding firms’ shareholders. Moreover, the simple average method was another selected method for the measurement of the bid period abnormal returns estimated from the matched reference portfolio method.

6.2.1.1 Results of the Investigations for Target and Bidding Firms

6.2.1.1.1 Target firm abnormal returns (bid period)

Tables 9 and 10 demonstrate that for the bid period or the period (-12,+12), the average buy-and hold abnormal returns (ABHARs) estimated from the BHARs(2), or ABHARs (2), and the BHARs (3), or ABHARs (3), for the target firm’s shareholders are positive at 12.60% (method 1) and 10.80% (method2); and 16.10% respectively. Accordingly, Table 11 shows that for the bid period or the period (-12,+12), the monthly average abnormal returns are positive at 1.80% (monthly). These results are confirmed by the percentages of the proportion of positive abnormal returns of 53.97% for the ABHARs(2), 66% for the ABHARs(3), and 74% for the monthly average abnormal returns for the target firm’s shareholders. Moreover, the reported results are further supported by the significance tests which are significant with t statistics of 2.52 and 5.90 for the ABHARs(2) (method 1) and (method 2) respectively, 12.47 for the ABHARs(3), and -8.23 for the monthly average abnormal returns. Therefore, the results
are consistent with each other in terms of both the direction and magnitude, but of
different magnitude when compared with the monthly average abnormal returns.
Furthermore, the positive ABHARs(2) and ABHARs(3) are consistent, in terms of
return direction, with the positive ABHARs of 38.20% estimated from the zero-one
model and 146.60% estimated from the market model for the same time period (-
12,+12), as previously reported (see Appendix B, Table B1). At the same time, Table 12
presents evidence that for the bid period or the period (-12,+12), the average cumulative
abnormal returns (CAARs) estimated from the matched reference portfolio method for
the target firm’s shareholders are positive at 16.20% (method1) and 17.40% (method2),
both are significant with t statistics of 3.94 and 11.43 respectively. Also, it is supported
by the percentage of the positive CAARs of about 59.52%. The results are consistent
with the positive ABHARs(2), ABHARs(3), and monthly average abnormal returns,
even though of different magnitude. Also, the results are coincident, particularly in
terms of return direction, with the positive CAARs of 40.70% estimated from the
market model and 47% estimated from the zero-one model for the same time period (-
12,+12), as previously reported (see Appendix B, Table B1). However, Table 9 reveals
that the average buy-and hold abnormal returns estimated from the BHARs(1), or
ABHARs (1), are significantly negative at -4.80% (t=-23.48). It is also supported by the
percentage of the negative ABHARs (1) of approximately 64%. Nevertheless, each
earlier result is supported by the percentages of the positive and negative skewness-
adjusted t-statistics for the abnormal returns. Table 9 shows that the percentage of the
positive skewness-adjusted t-statistics for the ABHARs(3) is 66%, and the percentage
of the negative skewness-adjusted t-statistics for the ABHARs(1) is 64% meanwhile,
Table 11 shows that the percentage of the positive skewness-adjusted t-statistics for the
monthly average abnormal returns is only 30%.

In conclusion, the results are not completely robust or consistent, when
compared across the same and different methods as well as between the same and
different formulas. The ABHARs(2) for the target firm’s shareholders are strongly
consistent, in terms of both the return direction and magnitude, with the ABHARs(3),
and the CAARs; and consistent in the sense of return direction but not magnitude with
the monthly average abnormal returns. Furthermore, the results are consistent with the
CAARs and ABHARs estimated from the market and zero-one models for the same
time periods (-12,+12), as earlier reported. However, the results are not consistent with
the ABHARs (1) which are significantly negative. Nevertheless, even though the takeover results in positive and negative bid period abnormal returns, as estimated from the matched reference portfolio method, for the target firm's shareholders, most of the findings from this study show that there are positive rather than negative abnormal returns and they are large rather than small in magnitude. Finally, the findings are supportive to each other, on average, even when using different methods for the investigations and it is concluded that the takeover announcement results in positive abnormal returns for the target firm's shareholders.

6.2.1.1.2 Bidding firm abnormal returns (bid period)

Tables 9 and 10 show that for the bid period or the period (-12,+12), the average buy-and-hold abnormal returns (ABHARs) estimated from the BHARs(2), or ABHARs (2), and the BHARs (3), or ABHARs(3), for the bidding firm's shareholders are positive at 14.20% (method1) and 12.90% (method2); and 12.50% respectively. Consistently, Table 11 shows that for the bid period or the period (-12,+12), the monthly average abnormal returns are positive at 0.80% (monthly). These results are strongly supported by the percentages of positive abnormal returns of 56.94% for the ABHARs(2), 68.75% for the ABHARs(3), and 68.75% for the monthly average abnormal returns for the bidding firm's shareholders. The results are further confirmed by the significance tests which are significant with t statistics of 2.48 and 7.84 for the ABHARs(2) (method 1) and (method 2) respectively, and 6.94 for the ABHARs(3), but insignificant for the monthly average abnormal returns. Therefore, the findings are completely consistent with each other in terms of both the return direction and magnitude between the ABHARs(2) and ABHARs (3), but of different magnitude to the monthly average abnormal returns. Moreover, the positive ABHARs(2) and ABHARs (3) give an indication of robustness, in terms of return direction, to the positive ABHARs of 15.60% estimated from the zero-one model for the same time period (-12,+12) as previously reported (see Appendix C, Table C1). Accordingly, Table 12 shows that for the bid period or the period (-12,+12), the cumulative average abnormal returns (CAARs) for the bidding firm's shareholders are positive at 10.20% (method 1) and 11.80% (method 2), both are significant with t statistics of 2.14 and 8.79 respectively. Also, it is supported by the percentage of positive CAARs of approximately 54.17%. This is entirely consistent with the ABHARs(2), ABHARs(3), and the monthly average...
abnormal returns for the bidding firm's shareholders. However, Table 9 shows that the average buy-and-hold abnormal returns estimated from the BHARs(1), or ABHARs(1), are significantly negative at -4.60\% (t=-18.97). It is also confirmed by the percentage of negative ABHARs (1) of about 68.75\%. The results deviate from each other to a degree but the later results are perfectly consistent in the sense of both the return direction and magnitude with the negative ABHARs of approximately -3.20\% estimated from the market model for the same time period (-12,+12), as earlier reported (see Appendix C, Table C1). Furthermore, the results are strongly robust with positive CAARs of 18.30\% estimated from the zero-one model for the same time period (-12,+12), as previously reported (see Appendix C, Table C1). Nevertheless, each of the earlier results are supported by the percentages of the positive and negative skewness-adjusted t-statistics for the abnormal returns. Table 9 shows that the percentage of positive skewness-adjusted t-statistics for the ABHARs(3) is 68.75\%, and the same percentage of 68.75\% represents the negative skewness-adjusted t-statistics for the ABHARs(1). Meanwhile, Table 11 shows that the percentage of positive skewness-adjusted t-statistics for the monthly average abnormal returns is up to 65.63\%.

In conclusion, the findings are positive and negative, and are robust with regard to the same and different methods as well as when calculated with the different formulas. The ABHARs(2) for the bidding firm's shareholders are perfectly consistent in the sense of both the return direction and magnitude with the ABHARs(3), and CAARs; and consistent in terms of return direction but not magnitude with the monthly average abnormal returns. Moreover, these findings are consistent with the positive CAARs and ABHARs estimated from the zero-one models for the same time period (-12,+12), as previously reported. At the same time, the negative ABHARs(1) are consistent with the negative ABHARs estimated from the market model for the same time period (-12,+12), as earlier mentioned. It is clear that the findings are confirmed for both the return direction and magnitude, on average, or are supportive of the previous findings presented in this study, even when using different methods for the examination of abnormal returns. Thus, it can be suggested that the takeover announcement leads to positive and negative abnormal returns for the bidding firm's shareholders.

6.2.2 Post-bid Period Investigations
According to the methodologies described in chapter 3, for long-term or post-event or post-bid period, the matched reference portfolio method was used for calculation of the abnormal return estimations. Specifically, the cumulate abnormal return (CAR) and buy-and-hold abnormal return (BHAR) (three different formulas) methods were employed for measurement of the long-term abnormal returns estimated from the matched reference portfolio method, for the bidding firm's shareholders. In addition, the simple average method was another selected method for the measurement of the long-term abnormal returns estimated from the matched reference portfolio method.

### 6.2.2.1 Bidding firm abnormal returns (post-bid period)

Tables 9 and 10 show that for the post-bid period or the period (+1, +16), the average long-term buy-and-hold abnormal returns (1-t ABHARs) for the bidding firm's shareholders are negative. The long-term average buy-and-hold abnormal returns (1-t ABHARs) estimated from the BHARs(1), or 1-t ABHARs(1), are negative at -6.10%, meanwhile, those estimated from the BHARs(2), or 1-t ABHARs(2), and the BHARs (3), or 1-t ABHARs(3), are negative at -3.50% (method 1) and -3.60% (method 2), and -3.70% respectively. In terms of consistency, these results are strongly supported by the percentages of the negative abnormal returns which are up to 73.17% for the 1-t ABHARs(1), 60.87% for the 1-t ABHARs(2), and 60.98% for the 1-t ABHARs(3). The results are further confirmed by the significance tests which are significant with t statistics of -21.76, -4.89, and -6.58 for the 1-t ABHARs(1), 1-t ABHARs(2) (method 2), and 1-t ABHARs (3) respectively, but insignificant with t statistics of -1.18 for the 1-t ABHARs(2) (method 1). Accordingly, Table 11 shows that for the post-bid period or the period (+1, +16), the monthly average long-term abnormal returns are significantly negative at -0.20% (monthly) (t=-5.36). It is further supported by the percentage of the negative abnormal returns of 58.54%. Therefore, the results of this study are consistent with each other in terms of both the return direction and magnitude. At the same time, Table 12 shows that for the post-bid period or the period (+1, +16), the long-term cumulative average abnormal returns (1-t CAARs) for the bidding firm's shareholders are negative at -0.30% (method 1) and -0.80% (method 2), even though they are insignificant with t statistics of -0.03 and -0.77 respectively. The results are supported by the percentage of the negative 1-t CAARs of 57.97%. Also, the results confirm those
suggesting negative abnormal returns as previously discussed, even though they are of different magnitude.

Furthermore, each earlier result is strongly supported by the percentages of the negative skewness-adjusted t-statistics for the abnormal returns. Table 9 reveals that the percentages of negative skewness-adjusted t-statistics are 73.17% and 60.98% for the l-t ABHARs(1) and l-t ABHARs (3) respectively. Likewise, Table 11 shows that the percentage of negative skewness-adjusted t-statistics for the monthly average l-t abnormal returns is 63.41%. Thus, the results are completely robust and consistent when compared across the same and different methods as well as when calculated with the different formulas. All results are consistent with each other: the l-t ABHARs(1), the l-t BHARs(2), the l-t BHARs(3), the monthly average l-t abnormal returns and the l-t CAARs for the bidding firm's shareholders. Moreover, these results are consistent with past studies which have widespread findings suggesting that the bidding firm's shareholders experience significant negative abnormal returns over one to three or five years after the takeover announcement month, as previously discussed in the section on the evidence relating to the long-term post-event abnormal returns available to bidding firms in chapter 1. Therefore, it is obvious that the post-bid period abnormal returns for the bidding firm's shareholders are certainly negative, and the magnitude of the returns is small or mild at about -0.20% for the l-t monthly average abnormal returns, -0.30% and -0.80% for the l-t CAARs, and varying from -3.50% to -6.10% for the l-t ABHARs. Finally, the findings are entirely supportive to those of previous studies, even when using different samples, different methods, and different time periods for the investigations and it is firmly concluded that the takeover announcement results in negative long-term abnormal returns for the bidding firm's shareholders.
Table 9

The Average Buy-and-Hold Abnormal Returns, ABHARs (1) and ABHARs (3),

Estimated from the Matched Reference Portfolio Method for Target Firms (Bid Period)
and Bidding Firms (Bid and Post-bid Periods) Investigations

A matched reference portfolio method was applied for the measurements of the bid period (-12,+12) abnormal returns for the target and bidding firms’ shareholders. The results estimated from a total 126 reference portfolios for 50 target firms, and from a total 72 reference portfolios for 32 bidding firms for the bid period (-12,+12) investigation were analysed. This table provides the bid period average buy-and hold abnormal returns (ABHARs) for the target and bidding firms’ shareholders, ABHARs(1) which BRi was calculated from BRi(Rbh)=1/n \sum_{i=0}^{n-1} (1+r_{it})\ldots(1) and ABHARs(3) which were calculated from AHPAR=1/n \sum_{i=0}^{n-1} (HPR_i - HPR_{benchmark i})\ldots (3).

The return performances were measured from all tender offers occurring from 1992-2002. Any target firm that was listed at any point of time of the takeovers was selected. Likewise, any bidding firm that was listed at any point of time of the takeovers was selected. Their price data are available over the period (-48,+16) correspondence with the takeover announcement months. The monthly data during the period (-12,+12) was used to estimate the returns to the target and bidding firms and reference portfolios matched on size and book-to-market ratios. After the criteria consideration, the number of the target firms included in the sample reduced from 52 to 50 firms; and the number of the reference portfolios reduced from 156 sets to 126 sets or accounts for approximately 80.77%, meanwhile, the number of the bidding firms included in the sample reduced from 42 to 32 firms; and the number of the reference portfolios reduced from 126 sets to 72 sets or accounts for approximately 57.14%. The bid period buy-and hold returns or compounded monthly returns to obtain a holding period buy-and-hold returns of the target and bidding firms and each subset of the reference portfolios were calculated as in the following formulas: R_{i1}=[1+\prod_{t=0}^{T-1} (1+r_{it})]-1. The bootstrap approach was applied by using 1000 time re-sampling from each subset of the reference portfolios then, randomly selecting five of them which is about 25% of the typical reference portfolios. The returns on the mentioned five reference portfolios were added together and averaged to get the return on one bootstrapped reference portfolio from 1000 simulations. The previously described procedures resulted in the bid period buy-and-hold returns to the target and bidding firms as R_i=\prod_{t=0}^{T-1} (1+r_{it})\ldots(1). The bid period buy-and-hold abnormal returns (AR_i) to the target and bidding firms were estimated from the difference between the bid period buy-and-hold returns to the target firm and the bootstrapped reference portfolios using the following formula, AR_i=R_i-BR_i. Likewise, the bootstrap
approach was applied by using 1000 times re-sampling from each subset of the reference portfolios then, the buy-and-hold abnormal returns to the target and bidding firms were calculated according to the following formula: $\text{AHPAR} = \frac{1}{n} \sum_{i=1}^{n} (HPR_i - HPR_{benchmark}) ... (3)$. Then, the means of the bid period BHARs to the target and bidding firms were calculated. Also, the skewness-adjusted t-statistics were calculated as in the following formula: $t_{sa} = \sqrt{n} \left( S + \frac{1}{3} \hat{\gamma} S^2 + \frac{1}{6n} \hat{\gamma} \right)$, $S = \overline{AR} \sqrt{\sigma} (\overline{AR})^3$, and $\hat{\gamma} = \sum_{i=1}^{n} (AR_i - \overline{AR})^3 / n \sigma (\overline{AR})^3$. At the same time, the average long-term buy-and-hold abnormal returns, $l-t \text{ABHARs(1)}$ and $l-t \text{ABHARs(3)}$, estimated from the matched reference portfolio method for bidding firms (post-bid period) are also presented. The results estimated from total 69 reference portfolios for 41 bidding firms for the post-bid period investigation are analysed. The monthly data during the period (+1,+16) was used to estimate the returns to the bidding firms and the reference portfolios matched on size and book-to-market ratios. After the criteria consideration, the number of the bidding firms included in the sample reduced from 42 to 41 firms; and the number of the reference portfolios reduced from 98 sets to 69 sets or accounting for approximately 70.41%. The bid period buy-and-hold returns or compounded monthly returns to obtain a holding period buy-and-hold returns of the target and bidding firms and each subset of the reference portfolios were calculated as earlier shown in the formulas. Also, the skewness-adjusted t-statistics were calculated as in the previously shown formula. Finally, to test the null hypothesis of zero means at a significance level of $\alpha$, the critical values for the skewness-adjusted t-statistics are based on the tabulated distribution of t-statistics. Significant means at 1% and 5% levels that are shown by ** and * respectively. To compared the results, the bid period ABHARs(1) and ABHARs(3) for the target and bidding firms' shareholders are shown in the table.

<table>
<thead>
<tr>
<th>Sample</th>
<th>ABHARs (1)</th>
<th>Skewness-adjusted t-statistic</th>
<th>ABHARs (3)</th>
<th>Skewness-adjusted t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bid Period</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Target Firms (50 firms)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>-0.048</td>
<td>-23.48**</td>
<td>0.161</td>
<td>12.47**</td>
</tr>
<tr>
<td>% of negative</td>
<td>64.00</td>
<td>64.00</td>
<td>34.00</td>
<td>34.00</td>
</tr>
<tr>
<td>% of positive</td>
<td>36.00</td>
<td>36.00</td>
<td>66.00</td>
<td>66.00</td>
</tr>
<tr>
<td><strong>Bidding Firms (32 firms)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>-0.046</td>
<td>-18.97**</td>
<td>0.125</td>
<td>6.94**</td>
</tr>
<tr>
<td>% of negative</td>
<td>68.75</td>
<td>68.75</td>
<td>31.25</td>
<td>31.25</td>
</tr>
<tr>
<td>% of positive</td>
<td>31.25</td>
<td>31.25</td>
<td>68.75</td>
<td>68.75</td>
</tr>
<tr>
<td><strong>Sample</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l-t ABHARs (1)</td>
<td></td>
<td></td>
<td>l-t ABHARs (3)</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>-0.061</td>
<td>-21.76**</td>
<td>-0.037</td>
<td>-6.58**</td>
</tr>
<tr>
<td>% of negative</td>
<td>73.17</td>
<td>73.17</td>
<td>60.98</td>
<td>60.98</td>
</tr>
<tr>
<td><strong>Post-bid Period</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bidding Firms (41 firms)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>-0.061</td>
<td>-21.76**</td>
<td>-0.037</td>
<td>-6.58**</td>
</tr>
<tr>
<td>% of negative</td>
<td>73.17</td>
<td>73.17</td>
<td>60.98</td>
<td>60.98</td>
</tr>
</tbody>
</table>
The Average Buy-and-Hold Abnormal Returns, ABHARs (2), Estimated from the Matched Reference Portfolio Method for Target Firms (Bid Period) and Bidding Firms

(Bid and Post-bid Periods) Investigations

A matched reference portfolio method was applied for the measurements of the bid period (-12,+12) abnormal returns for the target and bidding firms’ shareholders. The results estimated from a total of 126 reference portfolios for 50 target firms, and from a total 72 reference portfolios for 32 bidding firms for the bid period (-12,+12) were analysed. This table provides the bid period average buy-and hold abnormal returns (ABHARs) for the target and bidding firms’ shareholders, ABHARs(2), which were calculated from BRi(Rrb) = \( \prod_{t=0}^{T-1} \left(1 + \frac{1}{n} \sum_{t=1}^{n} r_{t\text{t}} \right) - 1 \). The return performances were measured from all tender offers occurring from 1992-2002. Any target firm and bidding firm that were listed at any point of time of the takeovers taking place was selected. The bidding firm was either the single bidding firm or a consortium. The target and bidding firms’ price data were available over the period (-48,+16) corresponding with the takeover announcement months. The monthly data during the period (-12,+12) was used to estimate the returns to the target and bidding firms and the reference portfolios matched on size and book-to-market ratios. After the criteria consideration, the number of the target firms included in the sample reduced from 52 to 50 firms; and the number of the reference portfolios reduced from 156 sets to 126 sets or accounting for approximately 80.77%. The number of the bidding firms included in the sample reduced from 42 to 32 firms; and the number of the reference portfolios reduced from 126 sets to 72 sets or accounting for approximately 57.14%. The bid period buy-and hold returns of the target and bidding firms and the set of reference portfolios were calculated as in the following formulas: 

\[ R_i = \prod_{t=0}^{T-1} (1 + r_{i \text{t}}) - 1; \]

\[ BR_i(R_{rb}) = \prod_{t=0}^{T-1} (1 + \frac{1}{n} \sum_{t=1}^{n} r_{t \text{t}}) - 1 \ldots (2) \]

Then, the average bid period BHARs to the target and bidding firms or means were calculated by the simple average method (method 1) and bootstrap approach (method 2). Also, the skewness-adjusted t-statistics were calculated as in the following formula:

\[ t_{u} = \sqrt{n} \left( S^2 + 1/3 \sum (AR_i - \overline{AR_i})^3 / n \sigma (AR_i)^3 \right) \]

At the same time, a matched reference portfolio method was applied for the measurement of the long-term abnormal returns for the bidding firm’s shareholders. This table also provides the post-bid average buy-and hold abnormal returns (ABHARs) for the bidding firm’s shareholders, 1-t ABHARs(2). The results estimated from total 69 reference portfolios for 41 bidding firms for the post-bid period investigation are analysed. The monthly data during the period (+1,+16) were used to estimate the returns to the bidding firms and reference portfolios matched on size and book-to-market ratios. After the criteria consideration, the number of the bidding firms included in the sample reduced from 42 to 41 firms; and the number of the reference portfolios reduced from 98 sets to 69 sets or accounting for approximately 70.41%. The long-term buy-and hold returns of the bidding firms and the set of reference portfolios were calculated as in the earlier...
shown formulas. Then, the average long-term BHARs for the bidding firms or means were calculated by the simple average method (method 1) and the bootstrap approach (method 2). Also, the skewness-adjusted t-statistics were calculated as in the previously shown formula. Finally, to test the null hypothesis of zero means at a significance level of α, the critical values for the skewness-adjusted t-statistics are based on the tabulated distribution of t-statistics. Significant means at 1% and 5% levels and are shown by ** and * respectively.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Measurement¹</th>
<th>ABHARs (2) Method 1</th>
<th>ABHARs (2) Method 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bid Period</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Target Firms</strong></td>
<td>50 firms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>0.126</td>
<td>0.108</td>
<td></td>
</tr>
<tr>
<td>Skewness-adjusted t statistic</td>
<td>2.52*</td>
<td>5.90**</td>
<td></td>
</tr>
<tr>
<td>% of positive difference between BHARs²</td>
<td>53.97</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bidding Firms</strong></td>
<td>32 firms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>0.142</td>
<td>0.129</td>
<td></td>
</tr>
<tr>
<td>Skewness-adjusted t statistic</td>
<td>2.48*</td>
<td>7.84**</td>
<td></td>
</tr>
<tr>
<td>% of positive difference between BHARs³</td>
<td>56.94</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample</th>
<th>l-t ABHARs (2) Method 1</th>
<th>l-t ABHARs (2) Method 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Post-bid Period</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bidding Firms</strong></td>
<td>41 firms</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>-0.035</td>
<td>-0.036</td>
</tr>
<tr>
<td>Skewness-adjusted t statistic</td>
<td>-1.18</td>
<td>-4.89**</td>
</tr>
<tr>
<td>% of negative difference between l-t BHARs⁴</td>
<td>60.87</td>
<td></td>
</tr>
</tbody>
</table>

Note: ¹Method 1 is the simple average method and Method 2 is the bootstrap approach ²The difference between BHARs of the target firm - BHARs of a set of portfolios which are actually averaged by the number of the sub-sets ³The difference between BHARs of the bidding firm - BHARs of a set of portfolios which are actually averaged by the number of the sub-sets ⁴The difference between l-t BHARs of the bidding firm - l-t BHARs of a set of portfolios which are actually averaged by the number of the sub-sets
The Monthly Average Abnormal Returns Estimated from the Matched Reference Portfolio Method for Target Firms (Bid Period) and Bidding Firms (Bid and Post-bid Periods) Investigations

A matched reference portfolio method was applied for the measurement of the bid period abnormal returns for the target and bidding firms’ shareholders. The results estimated from a total of 126 reference portfolios for 50 target firms, and from a total 72 reference portfolios for 32 bidding firms for the bid period (-12,+12) were analysed. This table provides the bid period abnormal returns for the target and bidding firms’ shareholders, the monthly average bid period abnormal returns. The return performances were measured from all tender offers occurring from 1992-2002. Any target firm and bidding firm that were listed at any point of time of the takeovers taking place was selected. The bidding firm was either the single bidding firm or a consortium. The target and bidding firms’ price data were available over the period (-48,+16) corresponding with the event month. The monthly data during the period (-12,+12) was used to estimate the returns to the target and bidding firms and reference portfolios matched on size and book-to-market ratios. After the criteria consideration, the number of the target firms included in the sample reduced from 52 to 50 firms; and the number of the reference of portfolios reduced from 156 sets to 126 sets or approximately 80.77%. The number of the bidding firms included in the sample reduced from 42 to 32 firms; and the number of the reference of portfolios reduced from 126 sets to 72 sets or approximately 57.14%. The monthly bid period abnormal returns for the target and bidding firms’ shareholders were estimated from the difference between the monthly returns to the target and bidding firms and a reference portfolio or each subset of the reference portfolios. The bootstrap approach was applied by means of using 1000 times re-sampling from the monthly returns of each subset of the reference portfolios. Then, the monthly average bid period abnormal returns to the target and bidding firms were calculated which resulted in 1,082 and 604 monthly average abnormal returns (observations) to the total target and bidding firms in the sample, respectively. Also, skewness-adjusted t-statistics were calculated as in the following formula:

\[ t_{sa} = \sqrt{n} \left( S + 1/3 \bar{\gamma} S^3 + 1/6n \bar{\gamma} \right), \quad S = \frac{\overline{AR_T}}{\sigma(AR_T)}, \quad \bar{\gamma} = \frac{\sum_{i=1}^{n} (AR_i - \overline{AR_T})^3}{n\sigma(AR_T)^3}. \]

The means of the monthly bid period abnormal returns and skewness-adjusted t-statistics to each of the target and bidding firms were calculated which are shown in the table. At the same time, the matched reference portfolio method was applied for the measurement of the long-term abnormal returns for the bidding firm’s shareholders. The results estimated from a total of 69 reference portfolios for 41 bidding firms for the post-bid period were analysed. The monthly data during the period (+1,+16) was used to estimate the returns to the bidding firms and the reference portfolios matched on size and book-to-market ratios. After the criteria consideration, the number of the bidding firms included in the sample reduced from 42 to 41 firms; and the number of the reference of portfolios reduced from 98 sets to 69 sets or approximately 70.41%. The monthly long-term abnormal returns available to the bidding firm’s shareholders were estimated following the previously explained procedures. Then, the monthly average
long-term abnormal returns to the bidding firms were calculated which resulted in 498 monthly average abnormal returns (observations) to the total bidding firms in the sample. Also, the skewness-adjusted t-statistics were calculated as in the earlier shown formula. Finally, to test the null hypothesis of zero means at a significance level of \( \alpha \), the critical values for the skewness-adjusted t-statistics are based on the tabulated distribution of t-statistics. Significant means at 1% and 5% levels are shown by ** and * respectively.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Monthly average abnormal returns</th>
<th>Skewness-adjusted t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bid Period</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Target Firms (50 firms)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>0.018</td>
<td>-8.23**</td>
</tr>
<tr>
<td>% of positive</td>
<td>74.00</td>
<td>30.00</td>
</tr>
<tr>
<td><strong>Bidding Firms (32 firms)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>0.008</td>
<td>-0.90</td>
</tr>
<tr>
<td>% of positive</td>
<td>68.75</td>
<td>65.63</td>
</tr>
<tr>
<td><strong>Sample</strong></td>
<td>Monthly average l-t abnormal returns</td>
<td>Skewness-adjusted t-statistic</td>
</tr>
<tr>
<td><strong>Post-bid Period</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bidding Firms (41 firms)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>-0.062</td>
<td>-5.36**</td>
</tr>
<tr>
<td>% of negative</td>
<td>58.54</td>
<td>63.41</td>
</tr>
</tbody>
</table>
A matched reference portfolio method was applied for the measurements of the bid period (-12,+12) abnormal returns for the target and bidding firms' shareholders. The results estimated from a total of 126 reference portfolios for 50 target firms and 72 reference portfolios for 32 bidding firms for the bid period (-12,+12) were analysed. This table provides the bid period cumulative average abnormal returns (CAARs) for the target and bidding firms' shareholders. The return performances were measured from all tender offers occurring from 1992-2002. Any target firm and bidding firm that were listed at any point of time of the takeovers taking place were selected. The bidding firm was either the single bidding firm or a consortium. The target and bidding firms’ price data were available over the period (-48,+16) in correspondence with the event months. The monthly data during the (-12,+12) were used to estimate the returns to the target and bidding firms and reference portfolios matched on size and book-to-market ratios. After the criteria consideration, the number of the target firms included in the sample reduced from 52 to 50 firms; and the number of the reference portfolios reduced from 156 sets to 126 sets or accounting for approximately 80.77%, and the number of the bidding firms included in the sample reduced from 42 to 32 firms; and the number of the reference portfolios reduced from 126 sets to 72 sets or accounting for approximately 57.14%. The cumulative method was applied to estimate the bid period cumulative returns from the target and bidding firms (R_t) and the reference portfolios (E(R_t)). The bid period cumulative average abnormal returns (CAARs) to the target and bidding firms were calculated from the difference between the bid period cumulative returns to the target and bidding firms and the reference portfolios as in the following formulas: \[ \text{CAR} = \sum_{t=1}^{T} [R_t - E(R_t)] \]. Then, the CAARs to the target and bidding firms or means were calculated by the simple average method (method 1) and bootstrap approach (method 2). Also, the skewness-adjusted t-statistics were calculated as in the following formula: \( t_{sd} = \sqrt{n} \left( \frac{S + 1/3}{S^2 + 1/6} \right) \), \( S = \frac{AR_t - \overline{AR}_t}{\sigma} \), and \( \hat{y} = \sum_{i=1}^{n} (AR_{t_i} - \overline{AR}_t)^3 \). At the same time, the matched reference portfolio method was applied to the measurement of the long-term abnormal returns for the bidding firm’s shareholders. The results estimated from total 69 reference portfolios for 41 bidding firms for the post-bid period were analysed. This table also provides the post-bid cumulative average abnormal returns (CAARs) for the bidding firm’s shareholders, i-t CAARs. The monthly data during the (+1,+16) were used to estimate the returns to the bidding firms and reference portfolios matched on size and book-to-market ratios. After the criteria consideration, the number of the bidding firms included in the sample reduced from 42 to 41 firms; and the number of the reference portfolios reduced from 98 sets to 69 sets or accounting for approximately 70.41%. The long-term cumulative average abnormal returns (CAARs) to the bidding firms were calculated from the
difference between the long-term cumulative returns to the bidding firms and the reference portfolios as in the earlier shown formulas. Then, the CAARs to the bidding firms or means were calculated by the simple average method (method 1) and the bootstrap approach (method 2). Also, the skewness-adjusted t-statistics were calculated as in the previously shown formula. Finally, to test the null hypothesis of zero means at a significance level of α, the critical values for the skewness-adjusted t-statistics are based on the tabulated distribution of t-statistics. Significant means at 1% and 5% levels are shown by ** and * respectively.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Measurement</th>
<th>CAARs Method 1</th>
<th>CAARs Method 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bid Period</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Target Firms (50 firms)</strong></td>
<td></td>
<td>0.162</td>
<td>0.174</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skewness-adjusted-t statistic</td>
<td>3.94**</td>
<td>11.43**</td>
<td></td>
</tr>
<tr>
<td>% of positive difference between CARs</td>
<td>59.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bidding Firms (32 firms)</strong></td>
<td></td>
<td>0.192</td>
<td>0.118</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skewness-adjusted-t statistic</td>
<td>2.14*</td>
<td>8.79**</td>
<td></td>
</tr>
<tr>
<td>% of positive difference between CARs</td>
<td>54.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Post-bid Period</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bidding Firms (41 firms)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>-6.003</td>
<td>-0.008</td>
</tr>
<tr>
<td>Skewness-adjusted-t statistic</td>
<td>-0.03</td>
<td>-0.77</td>
<td></td>
</tr>
<tr>
<td>% of negative difference between 1-t CARs</td>
<td>57.97</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: 1 Method 1 is the simple average method and Method 2 is the bootstrap approach
2 The difference between CARs of the target firm - CARs of a set of portfolios which are actually averaged by the number of the sub-sets
3 The difference between CARs of the bidding firm - CARs of a set of portfolios which are actually averaged by the number of the sub-sets
4 The difference between 1-t CARs of the bidding firm - 1-t CARs of a set of portfolios which are actually averaged by the number of the sub-sets
Summary of results of the matched reference portfolio method analyses for the bid and post-bid periods for the target and bidding firms

In conclusion, the results of the matched reference portfolio method analyses suggest that the takeover announcement results in positive ABHARs and CAARs over the period from (-12,+12) of approximately 10.80%-16.10% and 16.20%-17.40% for the target firm's shareholders consecutively. Meanwhile, the monthly average abnormal returns over the same time period (-12,+12) are positive at 1.80% (monthly). The findings are in accordance with those estimated from the market and zero-one models, showing positive ABHARs of 146.60% and 38.20% and positive CAARs of 40.70% and 47% respectively.

At the same time, the matched reference portfolio method analyses suggest that the takeover announcement leads to positive ABHARs and CAARs over the period (-12,+12) of 12.50%-14.20% and 10.20%-11.80% respectively, and negative ABHARs over the period (-12,+12) of -4.60% for the bidding firm's shareholders. Meanwhile, the monthly average abnormal returns over the same time period (-12,+12) are positive at 0.75% (monthly). These findings are consistent with the positive ABHARs of 15.60% and positive CAARs of 18.30%, estimated from the zero-one model, and the negative ABHARs of -3.20%, estimated from the market model. Thus, it can be concluded that the takeover announcement generates positive and negative abnormal returns for the bidding firm's shareholders.

In addition, the matched reference portfolio method analyses clearly indicate that the takeover announcement reduces the wealth gains of the bidding firm's shareholders by inducing negative long-term abnormal returns. The long-term ABHARs over the period from (+1,+16) are negative at about -3.50% to -6.10% and long-term CAARs are -0.30% and -0.80%. Meanwhile, the monthly average long-term abnormal returns over the same time period (+1,+16) are negative at -0.20% (monthly).

6.3 TOTAL GAINS OF TARGET AND BIDDING FIRMS
To measure the total gains of the target and bidding firms, this study used a simple average method similar to that used in Jensen and Ruback (1983) to survey and summarise the findings of past studies. According to the results reported in the previous section on target firm and bidding firm abnormal returns (bid period), the CAARs for the target firm’s shareholders are positive at 30.80% and 31.10% as estimated from the market and zero-one models respectively. The CAARs for the bidding firm’s shareholders are negative at -0.90% and positive at 26.40% estimated from the market and zero-one models consecutively. Even though, the abnormal returns estimated from these two models for the bidding firm’s shareholders are substantial different, either one is consistent with most previous studies as earlier discussed in the section on bidding firm abnormal returns (bid-period). The target firm’s shareholders gain, the bidding firm’s shareholders slightly suffer otherwise, the target firm’s shareholders gain more, the bidding firm’s shareholders gain less compared with the target firm’s shareholders. However, the total gains of the target and bidding firms’ shareholders are positive at 14.95% estimated from the market model and 28.75% estimated from the zero-one model or approximately 21.85%, on average. Thus, on the whole, these total gains indicate that takeovers create values. The results confirm the findings of previous studies including Akbulut and Matsusaka (2003), even when using different methods: simple average, and weighted average, as summarised in chapter 1.

6.4 COMBINED VALUES OF TARGET AND BIDDING FIRMS

To measure the combined values of target and bidding firms, this study applied the weighted average abnormal return method which had been used in a number of studies, as previously discussed in chapter 3. There are two investigated alternatives for target and bidding firms: 5 targets vs. 5 bidders and 4 targets vs. 4 consortia (6 single bidding firms). As the pairs of event firms, 5 targets and 5 correspondent bidders were investigated and the results show that the cumulative average combined values (CACVs) of the target and bidding firms are negative at -1.29% estimated from the market model and are positive at 33.52% estimated from the zero-one model. The other investigated alternative, 4 targets and 4 correspondent consortia bidders were examined and the results show that the CACVs of the target and bidding firms are positive at 16.37% estimated from the market model and 52.15% estimated from the zero-one model. The results are consistent in terms of return direction, but are not for the
magnitude. However, even though the results from these two investigated alternatives are partly supportive, each result is consistent with past studies reporting positive and negative combined values. Nevertheless, the findings of this study show that the combined values of target and bidding firms are positive at 16.12% (as derived from the average of the results estimated from the first alternative as earlier discussed) and 34.26% (derived from the average of the results estimated from the second alternative as previously discussed) or approximately 25.19%, on average. In this view, the results coincide with those of most previous studies suggesting positive combined values of target and bidding firms, even though they are of different magnitude, as earlier summarised in the section on the evidence relating to total gains or combined values of event firms presented in chapter 1.

For further study, these two alternatives of the target and bidding firms are investigated for results after the announcement month for the bid period by applying the cumulative abnormal return (CAR) and buy-and-hold abnormal return (BHAR) approaches. At the same time, three parametric statistic tests: standardised-residual, standardised cross-sectional, and conventional t-tests, were employed to test the significance of the combined values of target and bidding firms. The results are summarised and presented in Table 13.
Table 13

**Combined Values of Target and Bidding Firms**

This table demonstrates abnormal returns for target and bidding firms for tender offers occurring from 1992-2002. The expected returns for the target and bidding firms' shareholders for the bid period (-12,+12) were measured from the market and market-adjusted (zero-one) models. The monthly abnormal returns for the target and bidding firms' shareholders from 12 months before the event month until 12 months after the event month were estimated then, the combined values for each month of the target and bidding firms were obtained using the following equation: \((AR_t \times MV_t + AR_b \times MV_b)/MV_t + MV_b\); \(AR_t\) and \(AR_b\) are the abnormal returns to target and bidding firms; \(MV_t\) and \(MV_b\) are the market capitalisations at the end of the month before the event month of target and bidding firms. The combined values of the target and bidding firms were cumulated from the first month until the last month of the investigation period and averaged or calculated by means of the cumulative abnormal return (CAR) method then, averaged to obtain the cumulative average combined values (CACVs). At the same time, the buy-and-hold abnormal return (BHAR) method was also applied by continuously compounding the combined values from the first month until the last month of the investigation period then, averaging them to be the average buy-and-hold combined values (ABHCVs). Also, the total or the sum of standardised abnormal returns (residuals) (TSRs), and average event-period standardised abnormal returns (residuals) (ASRs) for the target and bidding firms' shareholders were calculated. Then, the means of the TSRs (ATSRs and ASRs (AASRs) were estimated. To compare and strengthen the results about the combined values of target and bidding firms and in addition to investigating the pairs of event firms or 5 target firms and 5 correspondent bidding firms, 4 target firms and 4 correspondent consortia (6 single bidding firms) were also examined and the findings are demonstrated in this table. In this case, for each takeover activity, both target and bidding firms were listed companies when the takeover was taking place. Three parametric statistic tests: the standardised-residual, standardised cross-sectional, and conventional t-tests, were applied to test the significance of the average combined values for the event firms' shareholders. The t-statistics were calculated by means of the first two tests with the TSRs and the ASRs respectively, and the last test was applied with the average combined values from the CAR and BHAR methods. The t-statistics are the sum of the standardised residuals divided by (approximately) the square root of the number of sample firms, and the average event-period standardised residual divided by its contemporaneous cross-sectional standard error respectively. The standardised residual equals the event-period residual divided by the standard deviation of the estimation-period residuals, adjusted to reflect the forecast error. The conventional t-test statistic is the average combined value divided by its cross-sectional standard error. All three parametric significance test formulas are shown as follows: 

\[
t = \frac{\sum_{i=1}^{N} SR_{ie}}{\sqrt{N}} \]

\[
t = \frac{1}{N} \sum_{i=1}^{N} SR_{ie} / \sqrt{1/N(N-1)} \sum_{i=1}^{N} (SR_{ie} - \frac{1}{N} \sum_{i=1}^{N} SR_{ie})^2 / N^2; \]

\[
t_{\text{CAR}} = \frac{CACV_{it}}{(\sigma(CACV_{it}) / \sqrt{n})}, \quad t_{\text{BHAR}} = \frac{ABHCV_{it}}{(\sigma(ABHCV_{it}) / \sqrt{n})}.
\]

The CACV and ABHCV in the formulas are the combined values from the CAR and BHAR methods respectively. The sample sizes (N) for each alternative are 5 and 4.
respectively, 36 months and 25 months were selected for the estimation-period and event-window consecutively. The test statistics are provided in the parentheses.

<table>
<thead>
<tr>
<th>Market Model</th>
<th>Market-Adjusted Model</th>
</tr>
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<tbody>
<tr>
<td>CACVs</td>
<td>ABHCVs</td>
</tr>
<tr>
<td>CACVs</td>
<td>ABHCVs</td>
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</tbody>
</table>

5 Targets vs. 5 Bidders

-0.163 -0.200 -0.132 -0.026 0.421 0.317 0.737 0.147
(-0.85) (-1.27) (-0.06) (-0.45) (4.50)* (2.69) (0.32) (0.62)

4 Targets vs. 4 Consortia (6 single bidding firms)

0.007 0.062 1.539 0.357 0.680 0.821 2.296 0.414
(0.02) (0.19) (0.72) (1.01) (8.59)** (9.72)** (0.94) (0.60)

*significant at 5% level **significant at 1% level

The pairs of event firms or 5 target firms and 5 correspondent bidding firms were investigated, and the results estimated from the market model show that the CACVs over the period (-12+12) of the target and bidding firms are negative at -16.30% and the ABHCVs over the same time period are negative at -20%. The ABHCVs are smaller than the CACVs. At the same time, the ATSRs and AASRs are also negative at -13.20% and -2.60% respectively. However, all results are insignificant. For further comparison and analysis, the results estimated from the zero-one model shows that the CACVs over the period (-12+12) of the target and bidding firms are significantly positive at 42.10% and the ABHCVs over the same time period are insignificantly positive at 31.70%. The ABHCVs are smaller than the CACVs. Accordingly, the ATSRs and AASRs are positive at 73.70% and 14.70% consecutively. Therefore, the findings are consistent with each other for each model, even when each of them have opposite return directions. However, since the results of the significance tests for the findings estimated from the zero-one model are significant, it is suggested that the CACVs of the target and bidding firms are positive at 42.10%. Alternatively, 4 target firms and 4 correspondent consortia (6 single bidding firms) were examined, and the findings estimated from the market model show that the CACVs over the period (-12,+12) of the target and bidding firms are positive at 0.70% and the ABHCVs over the same time period are positive at 6.20%. The ABHCVs are greater than the CACVs.
Meanwhile, the ATSRs and AASRs are also positive at 153.90% and 35.70% respectively. Nevertheless, all results are insignificant. For further comparison and analysis, the findings estimated from the zero-one model show that the CACVs over the period (-12+12) of the target and bidding firms are significantly positive at 68% and the ABHCVs over the same time period are significantly positive at 82.10%. The ABHCVs are greater than the CACVs. Supportively, the ATSRs and AASRs are positive at 229.60% and 41.40% consecutively, but are statistically insignificant. The findings are consistent in terms of return direction. Likewise, since the results of the significance tests for the findings are significant, it is suggested that the average combined values of the target and bidding firms are positive at 68% for the CACVs and 82% for the ABHCVs. Obviously, the two investigated alternatives give some consistency and it can be concluded that the average combined values of the target and bidding firms are positive varying from 42% to 68% for the CACVs and 82% for the ABHCVs. Consistently, past studies report that takeovers result in positive combined returns. Therefore, the results of this study are confirmed particularly in terms of return direction, even though they are of a different magnitude.

6.5 TAKEOVER MOTIVE INVESTIGATION

According to the methods of takeover motive investigation discussed in chapter 4, this study used the abnormal return direction (and magnitude) or sign (and size) for indicating the motives for takeovers. The results of the bid period investigations in the previous section show that the target firm’s shareholders earn positive CAARs of 30.80% estimated from the market model and 31.10% estimated from the zero-one model (also see Tables 1 and 2), and the bidding firm’s shareholders earn negative CAARs of -0.90% estimated from the market model and positive CAARs of 26.40% estimated from the zero-one model. As a result, the previous section proposes that the total gains of the target and bidding firms are positive at 14.95% estimated from the market model and 28.75% estimated from the zero-one model or approximately 21.85%, on average. Specifically, the 28.75%, estimated from the zero-one model, derive from the positive CAARs of 31.10% and 26.40% to the target and bidding firms respectively and this clearly explains that the motive for takeovers is most consistent with the synergy one. Meanwhile, the 14.95%, estimated from the market model, derive
from the positive CAARs of 30.80% and negative CAARs of -0.90%\textsuperscript{49} available to the target and bidding firms consecutively and this obviously suggests that agency problems induce the takeovers. It is argued that there are non-hubris factors because the negative abnormal returns for the bidding firm's shareholders are more than offset by the positive abnormal returns for the target firm's shareholders. However, to strengthen the results, this study further investigated the hubris motive to try to establish whether it is a motive for takeovers or not. Therefore, the methods used in Bradley, Desai, and Kim (1983) and Asquith (1983) were adopted for investigating the performances of the unsuccessful target firms in and after the takeover announcement month. The findings from the bid period investigations in the previous section show that in the takeover announcement month, the unsuccessful target firm's shareholders gain positive abnormal returns of 7.70% and 22.90% estimated from the zero-one and market models respectively. At the same time, the returns are strongly sustainable as well as positively increased after the announcement month or the period (+1,+12) and (-12,+12). The CAARs over the period (+1, +12) are positive at 54.80% and 65.80% and those over the period (-12,+12) are positive at 62.50% and 88.70%, estimated from the zero-one and market models respectively. This suggests that there is no hubris motive for the takeovers. Accordingly, this study also finds that the successful bidding firms earn positive CAARs over the period (-12,-1) of 3.90% estimated from the market model and 26.90% estimated from the zero-one model, and the unsuccessful bidding firms earn the negative CAARs over the period (-12,-1) of -37.60% estimated from the market model and the positive CAARs over the period (-12,-1) of 28.30% estimated from the zero-one model. The results are mixed, due to the inconsistent larger abnormal returns to the successful bidding firms, thus the evidence does not indicate that hubris is a motive for the takeovers.

Nevertheless, the performance of the CAARs for the successful bidding firm's shareholders in the announcement month is considered to be another indicator for the takeover motive investigations. The results show that the CAARs over the period (-12,0) for the successful bidding firm's shareholders are positive at 2.10% and 26.20% estimated from the market and zero-one models respectively. At the same time, it is

\textsuperscript{49} See Appendix A, Table A2 (A2.1) demonstrates that 16 from 31 studies or in percentage terms about 51.61% report small negative abnormal returns less than -1% for the bidding firm's shareholders. These 16 studies or in percentage terms up to 100% present the return magnitude ranges between -0.01% and -0.85%. Meanwhile, only 2 samples of these 16 studies show the negative returns of -0.91% and -0.92%. Therefore, the negative CAARs of -0.90%, as reported, is essential to be taken into account.
suggested that evidence from studies using monthly data is more difficult to interpret, but the patterns are likely to be consistent with a negative return movement between the merger announcement and successful outcome, and the merger outcome date could be included somewhere in the sample period. In this view, the results suggest that the CAARs over the period (+1,+12) for the successful bidding firm’s shareholders are negative at -8.60% and -26.10% estimated from the zero-one and market models consecutively. Another supportive result is that the CAARs over the period (0,+12) for the successful bidding firm’s shareholders are negative at -9.40% and -27.90% estimated from the zero-one and market models respectively. Thus, it is clear that the evidence from these perspectives is robust and consistent with that of Asquith (1983) which implies that this study also finds that hubris induces the takeovers.

In addition, it is worth noting that since the notification of the SEC determines that the period for tender offers shall be between 25 and 45 business days, as previously proposed in the section on regulations in chapter 2, the tender offer outcome is supposed to be known during the three months subsequent to the announcement. Also, there is evidence that the monthly AARs for the successful bidding firm’s shareholders are significant in month +4, +5, and +6 (see Tables 1, 2, 3 and 4). This is further supported by previous studies that show there is no significant market reaction for the first few months after a takeover. In this aspect, this study shows that the CAARs over the period (-12,+3) for the successful bidding firm’s shareholders are negative at -6.40% estimated from the market model and positive at 21% estimated from the zero-one model then, these abnormal returns dramatically decline to about -17.60% and -3.40% to negative CAARs over the period (-12,+12) of -24% and 17.6% respectively. The findings are further coincident in the sense that there is no immediate market reaction after a takeover, but within a year there are large negative abnormal returns. Therefore, this completely gives agreement with the previous reported results and it is firmly suggested that this study also provides evidence indicating hubris is a plausible takeover motive. Hence, on the whole, in addition to synergy being a main motive for takeovers, the evidence also suggests that the agency and hubris rationales induce takeovers too.
CHAPTER 7
CONCLUSION

This thesis focuses on the takeover announcement effects experienced by the target and bidding firms. The event study method was used and the analysis involves calculating the average abnormal returns (AARs), cumulative average abnormal returns (CAARs), and average buy-and-hold abnormal returns (ABHARs) for the event firms' shareholders. Other metrics applied include the total standardised abnormal returns (TSRs) and the average event-period standardised abnormal returns (ASRs). These are included due to the correlation of the significance tests of the abnormal returns. The investigations are associated with the bid period (-12,+12), the pre-bid period (-12,-1), and the post-bid period (+1,+16) (in monthly terms). The market and market-adjusted (zero-one) models were applied to calculate the abnormal return measurements for the bid and pre-bid periods. Meanwhile, the matched reference portfolio method was employed for the abnormal return estimations for the bid and post-bid periods. The cumulative abnormal return (CAR) and buy-and-hold abnormal return (BHAR) methods were also used for the measurement of the returns to the target and bidding firms. An additional method: monthly average abnormal returns, was applied to measure the returns estimated by the matched reference portfolio method. Parametric and non-parametric statistical tests were used to undertake the mean abnormal return significance tests. There are three parametric statistical tests: the standardised-residual, standardised cross-sectional, and conventional t-tests; and the bootstrapped skewness-adjusted t-statistic tests. The total of 52 target firms and 42 bidding firms were included in each major sample of the studies and were examined. Meanwhile, only bidding firms were investigated for the pre-bid and post-bid periods. To strengthen the findings, the characteristic target firms (26 alternatives, which excluded the total targets alternative, for target firms) and bidding firms (79 alternatives, which excluded the total bidders alternative, for bidding firms) were also examined. Also, to cover all combinations of circumstances and to ensure a comprehensive variety of findings, the outstanding characteristics of all takeovers taking place on the Stock Exchange of Thailand (SET) were analysed: the five and seven specific characteristic target firms (five sub-sets of the targets: later in "REHABCO", later delisted, total repeated, prior selected, and later selected target firms; seven sub-sets: five sub-sets of the targets plus the successful and unsuccessful target firms) and the five and seven specific characteristic bidding firms.
(five sub-sets of the bidders: single, consortium, total repeated, prior selected and later selected bidding firms; seven sub-sets: five sub-sets of the bidders plus the successful and unsuccessful bidding firms), or successful and unsuccessful takeovers were studied. Therefore, 27 investigative alternatives for target firms and 80 investigative alternatives for bidding firms are included in this thesis. In addition, to be a complete study, the total gains and combined values, which included the investigations of the combined values after the announcement month by means of the CAR and BHAR approaches, of the event firms as well as the motives for takeovers were also studied.

The thesis gives light to many results which are robust with respect to the different samples, methods, and time periods of the investigations. Explicitly, the findings are consistent with each other, particularly in terms of the return direction at least, when comparisons are made between the market and zero-one models, and comparisons across these two models and the matched reference portfolio method; compared across pre-bid, bid, and post-bid periods, and compared between the pre-bid period and before the announcement month of the bid period; compared between the CAR and BHAR methods, and also with the monthly average abnormal return method (for the returns calculated by the matched reference portfolio method). The results are internally consistent when compared within this study itself and also with most of the findings of previous studies of the developed stock markets and the limited existing studies of the Thai stock market. However, it is noted that the takeover effects on the bidding firm’s shareholders are significantly different or are in contrast (especially in terms of the return direction) when estimated by either the market or the zero-one models. Specifically, the CAARs during the announcement month or over the period (-12,0), are (-1% and 26%), and post the announcement month or over the period (-12,+12), are (-29% and 18%), (see Table 14). Nevertheless, each result is consistent with past studies suggesting both negative and positive abnormal returns for the bidding firm’s shareholders, on average, as previously discussed in Chapter 1.

The first findings indicate the results of the bid period investigations which suggest that in the takeover announcement month, in addition to the positive and negative monthly abnormal returns, or AARs of 13-14% and -1 to -2% (as estimated from the zero-one and market models respectively) for the target and bidding firms’ shareholders consecutively, the takeover also results in substantial positive cumulative
average abnormal returns, or CAARs, for the target firm’s shareholders, and substantial positive CAARs and small negative CAARs for the bidding firm’s shareholders. The CAARs are approximately 31%; and 26% and -1% respectively (see Table 14). It is clear that even though the positive CAARs are considerable for the bidding firm’s shareholders, they are smaller than those for the target firm’s shareholders. Also, the takeover results in positive CAARs of 28-31% immediately around the announcement month for the target firm’s shareholders. There is similar evidence from the target and bidding firms’ investigations indicating that the market reacts to the takeover news as being likely good news before the announcement month, some two months, and four and three months, at least, with evidence of positive CAARs of 13-14%, and 8-16% for the target and bidding firms’ shareholders respectively. At the same time, the unsuccessful target and bidding firm’s shareholders are doubtful about the future including potential takeover outcomes approximately six months and four months (at least), respectively, prior to the announcement month. Accordingly, in the announcement month, both successful and unsuccessful takeovers enhance the wealth of the target firm’s shareholders, on average to the extent of 31-32% and 8-23% consecutively (see Tables 1 and 2). Meanwhile, after the takeover announcement month, the unsuccessful takeover results in much greater positive CAARs for the target firm’s shareholders than those from the successful takeover, about 63-89% and 39-46% respectively. However, the successful takeover increases the positive CAARs to about 27-30% around the announcement month for the target firm’s shareholders. Moreover, most of the positive AARs for the successful target firm’s shareholders occur in month -1 which are significant and positive at 10-11% meanwhile those for the unsuccessful target firm’s shareholders arise in month +1 which are significant and positive at around 26-29%. At the same time, in the period (-12,0), the successful takeover leads to small and substantial positive CAARs for the bidding firm’s shareholders meanwhile, the unsuccessful takeover results in substantial positive and negative CAARs for the bidding firm’s shareholders. They are approximately 2% and 26%; and 29% and -41% consecutively (see Tables 1 and 2).

The results of the further investigations of the characteristic target firms for the bid period demonstrate that on average, the takeover announcement results in significant positive monthly AARs for each alternative varying from 7-8% to 37-40%, and positive CAARs which vary from 3% to 105% for the characteristic target firm’s shareholders.
Furthermore, these positive revaluations are sustainable until after the takeover announcement month, varying from 33% to 89% (see Table 8). At the same time, the takeover effects are positive around the announcement month. These findings are strongly consistent with those over the period (-12,0) as observed from the total target firm bid period investigations, as previously reported (also see Table 14). Also, the results show that in addition to the significant negative monthly AARs for each alternative varying from -3% to -14% for the characteristic bidding firm’s shareholders, the takeover announcement also leads to positive and negative CAARs varying from 77% to 79% and -52% to -125% respectively for the characteristic bidding firm’s shareholders (see Table 8). These findings are entirely supportive to those over the period (-12,0) as observed from the total bidding firm bid period investigations, as previously discussed (also see Table 14).

For the purposes of continuing the comparisons and to strengthen the results estimated from the market and zero-one models, for the post-takeover announcement month, or over the period (-12,+12), and in addition to using the CAR approach for calculating the return measurements, the BHAR approach was also used. Consequently, the results of the characteristic target firms bid period investigations explain that the takeover announcement increases the significant positive CAARs and ABHARs over the period (-12,+12) for the characteristic target firms’ shareholders. They vary from 33% to 89% and 50% to 59% consecutively (see Table 8). The findings are consistent with those over the period (-12,+12) as observed from the all target firm investigations, which reported that the CAARs are significantly positive at 41-47%, whilst the ABHARs are insignificantly positive at 38-147%, and the ATSR and AASR are insignificantly positive (see Table 14). Meanwhile, the results for the characteristic bidding firms bid period investigations describe that on average, the takeover announcement results in significant positive and negative CAARs and ABHARs over the period (-12,+12) for the characteristic bidding firms’ shareholders. The positive CAARs vary from 25% to 69%, as observed from the zero-one model, and the negative CAARs vary from -34% to -91%, as observed from the market model; the positive ABHARs are 44%, as observed from the zero-one model, and 166%, as observed from the market model, and the negative ABHARs vary from -26% to -96%, as observed from the market model (see Table 8). The findings are consistent with those over the period (-12,+12) as observed from the all bidding firm investigations suggesting that the
CAARs are positive at 18% and negative at -29%, the ABHARs are positive at 16% and negative at -3%, and the ATSRs and AASRs are positive, but all are insignificant (see Table 14).

To check the robustness of the results estimated from the market and zero-one models for the post-announcement month, or over the period (-12,+12), the results estimated from the matched reference portfolio method for the same time period were also estimated and show positive rather than negative abnormal returns for the target firm's shareholders. The CAARs, ABHARs, and monthly average abnormal returns over the period (-12,+12) are significantly positive at 16-17%, and significantly positive varying from 11% to 16%, and 1.80% (monthly), respectively (see Table 14). Meanwhile, the results estimated from the matched reference portfolio method present positive and negative abnormal returns for the bidding firm's shareholders. The CAARs and ABHARs over the period (-12,+12) are significantly positive at 10-12%; and significantly positive varying from 13% to 14% and significantly negative at -4.60% respectively (see Table 14). The results are supportive to each other for each target firm and bidding firm investigation, even when they result from the use of different methods for the estimation and examination. They are also consistent with the results of past studies, on the whole, despite the fact that these typically used different samples, methods, and time periods for their examinations.

The second findings show the results of the pre-bid period investigations which explain that before the announcement month, in addition to positive AARs of 1-4%, the takeover announcement also results in positive CAARs over the period (-12,-1) of 4-27% for the bidding firm's shareholders (see Table 14). Like the results from the bid period investigations, the takeover news leaks into the market and is anticipated between four and three months, at least, before the announcement month enhancing positive CAARs of approximately 8-16% for the bidding firm's shareholders. At the same time, the takeover announcement increases the wealth of the successful bidding firm's shareholders but increases as well as decreases the wealth of the unsuccessful bidding firm's shareholders. The amounts in question are 6-27%; and 28% and -21% respectively.

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50 Only the ABHARs(1) are significant negative at -4.80% among other six significant positive abnormal returns.
In further investigations, the results of the analyses of the characteristic bidding firms for the pre-bid period suggest that on average, the takeover announcement results in significant positive and negative monthly AARs for each alternative varying from 0.30% to 14.50% and -3%, respectively for the characteristic bidding firms' shareholders. The findings are partly consistent with those observed from the total bidding firm pre-bid period investigations made in this study. Nevertheless, the more essential results are robust, that is the finding that the takeover announcement leads to positive CAARs over the period (-12,-1) varying from 18% to 80% for the characteristic bidding firms' shareholders (see Table 8).

For the purposes of continuation, extension, comparison and to strengthen the results of the abnormal returns investigations, as estimated from the market and zero-one models, for the pre-bid period or over the period (-12,-1), and in addition to using the CAR approach for the returns measurement, the BHAR approach was also used. Consequently, the results of the characteristic bidding firms pre-bid period investigations suggest that the takeover announcement leads to significant positive abnormal returns over the period (-12,-1) to the characteristic bidding firms' shareholders. The positive CAARs vary from 18% to 80%, as observed from the zero-one model, and 41% to 53%, as observed from the market model; the positive ABHARs vary from 20% to 100%, as observed from the zero-one model (see Table 8). The findings are consistent with those over the period (-12,-1), as indicated by the all bidding firm pre-bid period investigations showing that the CAARs and ABHARs are significantly positive at 27% and 29% respectively, the ATSRs are significantly positive but the AASRs are insignificantly positive (see Table 14).

The third set of findings show the results of the post-bid period investigations demonstrating that the takeover leads to certainly negative abnormal returns for the bidding firm's shareholders. The 1-t ABHARs and monthly average 1-t abnormal returns over the period (+1,+16) are significantly negative varying from -4% to -6%, and -0.20% (monthly) respectively (see Table 14). The findings are strongly supportive to each other for each bidding firm investigation and with those of past studies.
The fourth set of results give light to the understanding of the takeover effects on the five specific characteristic target and bidding firms' shareholders. It is suggested that for the bid period investigations, the takeover announcement results in positive CAARs for the most of the five specific characteristic target and bidding firms' shareholders in the announcement and after the announcement month; for the pre-bid period investigations, the takeover announcement leads to positive CAARs for the most of the five specific characteristic bidding firms' shareholders before the announcement month. At the same time, the findings from the investigations of the seven specific characteristic target firms for the bid period indicate that the takeover results in positive and positive as well as negative effects on the wealth of the most of the seven specific target and bidding firms' shareholders after the announcement month. Meanwhile, those results from the investigations of the pre-bid period explain that the takeover leads to positive effects on the wealth of the most of the seven specific bidding firms' shareholders before the announcement month. In addition, clearly, the ABHARs over the period (-12,+12) and/or (-12,-1) are greater than the CAARs over the same time period.

The further results suggest that the total gains of the target and bidding firms are positive at 21.85%, on average, which are consistent with those reported in previous studies suggesting that takeovers generate positive values. Also, the combined values of the target and bidding firms are positive at 25.19% which again are consistent with most previous studies findings presenting positive combined values of target and bidding firms. In further confirmation, the results of the further investigations for the combined values of the target and bidding firms after the announcement month show that the cumulative average combined values (CACVs) and average buy-and-hold combined values (ABHCVs) are significantly positive varying from 42% to 68% and 82% respectively. Consistently, the results of this study are seemingly robust especially in the sense of the revealed return direction.

This study used the abnormal return sign and sizes as a means of indicating the potential motives for takeovers. The total gains of the target and bidding firms are positive at 28.75% (estimated from the zero-one model) derived from the positive CAARs of 31.10% and 26.40% to the target and bidding firms respectively, obviously suggesting that synergy is most likely candidate as a major motive for the takeovers.
The 14.95% (estimated from the market model) developed from the positive CAARs of 30.80% and negative CAARs of -0.90% available to the target and bidding firms consecutively, clearly suggests that agency problems may also play a role in inducing the takeovers. In addition, the methods used in Bradley, Desai, and Kim (1983) and Asquith (1983) were adopted for investigating the performances of the unsuccessful target firms and the successful bidding firms. The evidence is robust and consistent with that of Asquith (1983) which implies that this study also finds that hubris is a potential rationale for Thai takeovers. Thus, the last results suggest that synergy is the major motive for the takeovers studied and that the agency and hubris rationales also provide potential explanations of Thai takeovers.

Finally, it is concluded that the Thai takeovers studied in this thesis result in positive wealth gains for the target and bidding firms' shareholders.

Obviously, this thesis contributes to the understanding of the impact of takeover effects on the target and bidding firms traded on the SET. Also, it enriches the Thai financial literature in terms of greatly enhancing the existing literature given the limited number of prior studies involved and the variety of their results. For future research, the thesis offers a number of potential pointers for further study and exploration. A specific research topic closely related to this thesis would be to analyse the sources of funds used for takeovers made on the SET, and another related research topic would be an examination of takeover effects before and after the financial crisis in the year 1997 on the SET.
Table 14

Summary of Results Estimated from the Market, Market-Adjusted Models, and Matched Reference Portfolio Method for Target Firms (Bid Period) and Bidding Firms (Bid, Pre-bid, and Post-bid Periods) Investigations

<table>
<thead>
<tr>
<th>Sample</th>
<th>Market Model (-12,+12)</th>
<th>Market-Adjusted Model (-12,+12)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAARs (-12,0)</td>
<td>CAARs (-12,0)</td>
</tr>
<tr>
<td>All target firms (52 firms)</td>
<td>0.308</td>
<td>0.311</td>
</tr>
<tr>
<td></td>
<td>(2.14)*</td>
<td>(NA)</td>
</tr>
<tr>
<td>All bidding firms (42 firms)</td>
<td>-0.009</td>
<td>0.264</td>
</tr>
<tr>
<td></td>
<td>(NA)</td>
<td>(NA)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>ABHARs</th>
<th>ATSRs</th>
<th>AASRs</th>
</tr>
</thead>
<tbody>
<tr>
<td>All target firms (52 firms)</td>
<td>1.466</td>
<td>1.42</td>
<td>(1.43)</td>
</tr>
<tr>
<td>All bidding firms (42 firms)</td>
<td>0.288</td>
<td>0.172</td>
<td>(0.64)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>ABHARs</th>
<th>ATSRs</th>
<th>AASRs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matched reference portfolio method (-12,+12)</td>
<td>0.470</td>
<td>(1.88)</td>
<td>(0.42)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>CAARs</th>
<th>ABHARs</th>
<th>ATSRs</th>
<th>AASRs</th>
</tr>
</thead>
<tbody>
<tr>
<td>All bidding firms (42 firms)</td>
<td>0.040</td>
<td>0.131</td>
<td>18.885</td>
<td>0.450</td>
</tr>
<tr>
<td></td>
<td>(0.36)</td>
<td>(1.04)</td>
<td>(2.78)**</td>
<td>(0.36)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>ABHARs</th>
<th>ATSRs</th>
<th>AASRs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matched reference portfolio method (-12,-1)</td>
<td>0.162</td>
<td>0.174</td>
<td>0.048</td>
</tr>
<tr>
<td></td>
<td>(3.94)**</td>
<td>(-11.43)**</td>
<td>(-25.48)**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>CAARs</th>
<th>ABHARs</th>
<th>ABHARs</th>
<th>ABHARs</th>
<th>ABHARs</th>
<th>Monthly average abnormal returns</th>
</tr>
</thead>
<tbody>
<tr>
<td>All target firms (50 firms)</td>
<td>0.162</td>
<td>0.174</td>
<td>0.126</td>
<td>0.108</td>
<td>0.161</td>
<td>0.018</td>
</tr>
<tr>
<td></td>
<td>(3.94)**</td>
<td>(-11.43)**</td>
<td>(-25.48)**</td>
<td>(2.52)**</td>
<td>(5.90)**</td>
<td>(12.47)**</td>
</tr>
<tr>
<td>All bidding firms (32 firms)</td>
<td>0.102</td>
<td>0.118</td>
<td>-0.046</td>
<td>0.129</td>
<td>0.125</td>
<td>0.008</td>
</tr>
<tr>
<td></td>
<td>(2.14)*</td>
<td>(8.79)**</td>
<td>(-18.97)**</td>
<td>(2.48)**</td>
<td>(7.84)**</td>
<td>(6.94)**</td>
</tr>
</tbody>
</table>

|                        | ABHARs                  | ABHARs                           | ABHARs                           | ABHARs                           | ABHARs                           |
| Matched reference portfolio method (+1,+16) | -0.035                 | -0.036                           | -0.037                           | -0.036                           | -0.002                           | -0.037                           |
| Monthly average l-t abnormal returns |                            |                                |                                |                                |                                |                                |
| Post-bid Period        |                         |                                 |                                 |                                 |                                 |                                 |
| All bidding firms (41 firms) | -0.003                 | -0.008                           | -0.061                           | -0.035                           | -0.036                           | -0.037                           |
|                         | (-0.03)                 | (-0.77)                          | (-21.76)**                       | (-1.18)                          | (-4.89)**                        | (-6.58)**                        |

Note: CAARs=cumulative average abnormal returns; ABHARs=average buy-and-hold abnormal returns; ATSRs=the means of total or the sum of standardised residuals; AASRs=the means of the average event-period standardised residuals (also, see Table 9, 10, 11, 12 for details of the CAARs', and CAARs'; ABHARs1, ABHARs2, ABHARs3, and ABHARs3). Monthly average abnormal returns, including those of Jong term). The test statistics are provided in the parentheses below the values of the abnormal returns.

1 When excluded Q: UQXT which has the remarkable substantial stock price returns in the sample, the ABHARs are significant positive at 47.13% (t=2.12).
2 Method 1 is the simple average method. Method 2 is the bootstrap approach. *significant at 5% level. **significant at 1% level.
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Kalay, A., & Lowenstein, U. (1985). Predictable events and excess returns: The case of


standardized market model prediction errors. *Journal of Accounting Research, 22*, 34-54.


Business School, University of Aberdeen.


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The Stock Exchange of Thailand. (n.d.). *Rules, Conditions, and Procedures Governing the Listing and Delisting of Securities; Guidelines on Announcing Names of Listed Companies that is Subject to Preparing a Rehabilitation Plan; Rules, Conditions, and Procedures for Tender Offer for Delisting of Securities*. Bangkok, Thailand.


TABLE A1

Summary of Studies of Mergers and Acquisitions: Abnormal Returns for Target Firm's Shareholders

The table summarises the findings of 39 studies that examine the impact of mergers and acquisitions around the announcement date (month). The studies report that target firm shareholders' cumulative average abnormal returns are significantly positive, despite variations in time period, observation period, industry involved, country coverage, type of deals (mergers vs. tender offers), and measurement of returns. This survey concludes that merger and acquisition transaction delivers a premium return to target firm's shareholders. The target firm's shareholders receive cumulative average abnormal returns in the 20-30% range.

<table>
<thead>
<tr>
<th>Study</th>
<th>Cumulative Abnormal Returns (%)</th>
<th>Sample Size</th>
<th>Sample Period</th>
<th>Event Window (days)</th>
<th>Positive Returns</th>
<th>Industry Coverage</th>
<th>Country Coverage</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dodd &amp; Ruback ('77)*</td>
<td>+20.58% (25.81) (+15.75)</td>
<td>133</td>
<td>1958-1978</td>
<td>(0,0)m</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Tender offers; offer announcement month</td>
</tr>
<tr>
<td>Kummer &amp; Hoffmeister ('78)*</td>
<td>+16.85 (10.88)</td>
<td>161</td>
<td>1962-1969</td>
<td>(-20,+20)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Tender offers; offer announcement month</td>
</tr>
<tr>
<td>Langseth ('78)*</td>
<td>+10.63% (7.66)</td>
<td>149</td>
<td>1929-1969</td>
<td>(-120,0)</td>
<td>71.6%</td>
<td>-</td>
<td>U.S.</td>
<td>Mergers; uses effective date as event date</td>
</tr>
<tr>
<td>Bradley ('80)*</td>
<td>+32.18% (26.68)</td>
<td>161</td>
<td>1962-1977</td>
<td>(-20,+20)</td>
<td>-</td>
<td>-</td>
<td>U.S.</td>
<td>Tender offers</td>
</tr>
<tr>
<td>Jarrel &amp; Bradley ('80)*</td>
<td>+34.06% (25.48)</td>
<td>147</td>
<td>1962-1977</td>
<td>(-40,+20)</td>
<td>-</td>
<td>-</td>
<td>U.S.</td>
<td>Tender offers</td>
</tr>
<tr>
<td>Dodd ('80)*</td>
<td>+13.41% (23.40) (+11.93)</td>
<td>71</td>
<td>1970-1977</td>
<td>(-1,0)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Mergers; 1 month announcement effect Mergers</td>
</tr>
<tr>
<td>Bradley, Desai &amp; Kim ('82)*</td>
<td>+31.80% (36.52)</td>
<td>162</td>
<td>1962-1980</td>
<td>(-10,+10)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Tender offers</td>
</tr>
<tr>
<td>Asquith ('83)*</td>
<td>+6.20% (23.57) (+11.30%)</td>
<td>211</td>
<td>1962-1976</td>
<td>(-1,0)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Mergers</td>
</tr>
<tr>
<td>Authors</td>
<td>Year</td>
<td>Percentage</td>
<td>Market Segment</td>
<td>Observations</td>
<td>Time Period</td>
<td>Methodology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>------</td>
<td>------------</td>
<td>----------------</td>
<td>--------------</td>
<td>-------------</td>
<td>----------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eckbo ('83)</td>
<td>1963-1978</td>
<td>+6.24%</td>
<td>57</td>
<td>U.S. Mergers</td>
<td>+5.50%</td>
<td>Earnings announcement (1m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asquith, Bruner &amp; Mullins ('83)</td>
<td>1963-1979</td>
<td>+20.50%</td>
<td>35</td>
<td>U.S. Mergers</td>
<td>+14.08%</td>
<td>Earnings announcement (1m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malatesta ('83)</td>
<td>1969-1974</td>
<td>+16.80%</td>
<td>83</td>
<td>U.S. Mergers</td>
<td>+9.54%</td>
<td>Earnings announcement (1m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dennis &amp; McConnell ('86)</td>
<td>1962-1980</td>
<td>+8.56%*</td>
<td>76</td>
<td>U.S. Tender offers</td>
<td>+28.04%*</td>
<td>Earnings announcement (1m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bradley, Desai &amp; Kim ('88)</td>
<td>1963-1984</td>
<td>+31.77%*</td>
<td>236</td>
<td>U.S. Tender offers</td>
<td>+28.99%*</td>
<td>Earnings announcement (1m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jarre &amp; Poulsen ('89)</td>
<td>1963-1986</td>
<td>+28.99%*</td>
<td>526</td>
<td>U.S. Tender offers</td>
<td>+40.30%*</td>
<td>Earnings announcement (1m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lang, Stulz &amp; Walkling ('89)</td>
<td>1968-1986</td>
<td>+25.04%*</td>
<td>87</td>
<td>U.S. Tender offers</td>
<td>+28.04%*</td>
<td>Earnings announcement (1m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Franks, Harris &amp; Titman ('91)</td>
<td>1975-1984</td>
<td>+23.64%*</td>
<td>399</td>
<td>U.S. Tender offers</td>
<td>+21.81%**</td>
<td>Earnings announcement (1m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Servaes ('91)</td>
<td>1972-1987</td>
<td>+6.61%**</td>
<td>704</td>
<td>U.S. Mergers</td>
<td>+14.60%**</td>
<td>Earnings announcement (1m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Datta, Pinches &amp; Narayan ('92)</td>
<td>1978-1987</td>
<td>+21.81%**</td>
<td>33</td>
<td>U.S. Mergers</td>
<td>+14.60%**</td>
<td>Earnings announcement (1m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Banerjee &amp; Owers ('92)</td>
<td>1978-1987</td>
<td>+$ 137.10MM*</td>
<td>33</td>
<td>White Knight bids</td>
<td>+2.82%**</td>
<td>Earnings announcement (1m)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
- * denotes statistically significant results.
- ** denotes very significant results.
- (O,0) observations from 41 studies which used different time periods (dating as far back as 1948).
- (1-10,+10) or (0,0) observations from 41 studies which used different time periods (dating as far back as 1948).
- (10,-10) or (0,0) observations from 41 studies which used different time periods (dating as far back as 1948).
- (10,2) or (1,0) observations from 41 studies which used different time periods (dating as far back as 1948).
- (10,-2) or (1,0) observations from 41 studies which used different time periods (dating as far back as 1948).
<table>
<thead>
<tr>
<th>Study</th>
<th>Return</th>
<th>Observations</th>
<th>Period</th>
<th>Success/Failure</th>
<th>Location</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healy, Palepu, &amp; Kuback ('92)¹</td>
<td>+45.60%</td>
<td>50</td>
<td>1979-1984</td>
<td>(-5,+5)</td>
<td>N/A</td>
<td>U.S. Largest US mergers during period</td>
</tr>
<tr>
<td>Kaplan &amp; Weisbach ('92)¹</td>
<td>+26.90%</td>
<td>209</td>
<td>1971-1982</td>
<td>(-5,+5)</td>
<td>94.7%</td>
<td>Mergers and tender offers</td>
</tr>
<tr>
<td>Berkovitch &amp; Narayanan ('93)¹</td>
<td>+$130.10MM*</td>
<td>330</td>
<td>1963-1988</td>
<td>(-5,+5)</td>
<td>95.8%</td>
<td>Tender offers</td>
</tr>
<tr>
<td>Smith &amp; Kim ('94)¹</td>
<td>+30.10%*</td>
<td>177</td>
<td>1980-1986</td>
<td>(-5,+5)</td>
<td>N/A</td>
<td>Successful &amp; unsuccessful tender offers</td>
</tr>
<tr>
<td>Schwert ('96)¹</td>
<td>+23.40%*</td>
<td>1,814</td>
<td>1975-1991</td>
<td>(-42,+126)</td>
<td>N/A</td>
<td>All successful &amp; unsuccessful mergers and tender offers; segment data available for various transaction attributes</td>
</tr>
<tr>
<td>Loughran &amp; Vijn ('97)¹</td>
<td>+29.60%*</td>
<td>419</td>
<td>1970-1989</td>
<td>(-2,+1250)</td>
<td>N/A</td>
<td>5 yr. post-acquisition; segment data also available on form of payment</td>
</tr>
<tr>
<td>Maquieira, Megginson, &amp; Nail ('98)¹</td>
<td>+41.65%*</td>
<td>47</td>
<td>1963-1996</td>
<td>(-60,+60)</td>
<td>61.8%</td>
<td>Diversified U.S. Study of returns for stock-for-stock mergers</td>
</tr>
<tr>
<td>Eckbo &amp; Thorburn ('00)¹</td>
<td>+7.45%*</td>
<td>332</td>
<td>1964-1983</td>
<td>(-40,0)</td>
<td>N/A</td>
<td>Canada Canadian targets</td>
</tr>
<tr>
<td>Leeth &amp; Borg ('00)¹</td>
<td>+13.27%*</td>
<td>72</td>
<td>1919-1930</td>
<td>(-40,0)</td>
<td>N/A</td>
<td>U.S. N/A</td>
</tr>
<tr>
<td>Mulherin &amp; Boone ('00)²</td>
<td>+21.20%*</td>
<td>376</td>
<td>1990-1999</td>
<td>(-1,+1)</td>
<td>N/A</td>
<td>Financial &amp; non financial U.S. Incomplete acquisitions</td>
</tr>
<tr>
<td>Mulherin ('00)²</td>
<td>+10.14%*</td>
<td>202</td>
<td>1962-1997</td>
<td>(-1.0)</td>
<td>70%</td>
<td>Diversified U.S.</td>
</tr>
<tr>
<td>Schwert ('00)²</td>
<td>+20.00%</td>
<td>2,296</td>
<td>1975-1996</td>
<td>(-63,+126)</td>
<td>N/A</td>
<td>Diversified U.S.</td>
</tr>
<tr>
<td>Karceski, Ongena, &amp; Smith ('00)²</td>
<td>+8.48%*</td>
<td>39</td>
<td>1983-1996</td>
<td>(-7.0)</td>
<td>N/A</td>
<td>Banking Norway</td>
</tr>
<tr>
<td>DeLong ('91)¹</td>
<td>+16.61%*</td>
<td>285</td>
<td>1988-1995</td>
<td>(-10,+1)</td>
<td>88.6%</td>
<td>Banking U.S. Studied deals in which at least one party is a bank</td>
</tr>
<tr>
<td>Houston, James, &amp;</td>
<td>+15.58%*</td>
<td>27</td>
<td>1985-1990</td>
<td>(-4,+1)</td>
<td>N/A</td>
<td>Banking U.S. Deals in which both parties</td>
</tr>
<tr>
<td>Author</td>
<td>Year(s)</td>
<td>Announcements</td>
<td>Returns (%)</td>
<td>Sample Size</td>
<td>Country</td>
<td>Merger Type</td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
<td>---------------</td>
<td>-------------</td>
<td>-------------</td>
<td>---------</td>
<td>----------------</td>
</tr>
<tr>
<td>Ryngaert ('01)</td>
<td>1991-1996</td>
<td>+24.60%</td>
<td>37</td>
<td>Diversified non-financial</td>
<td>U.S.</td>
<td>Pooling of interests versus purchases</td>
</tr>
<tr>
<td>Martinez-Jerez ('02)</td>
<td>1990-1998</td>
<td>+13.62%</td>
<td>335</td>
<td>Diversified non-financial</td>
<td>OECD countries</td>
<td>AD first announcement date of any bid for US target and the announcement date of the acquirer's first bid for foreign acquirers</td>
</tr>
<tr>
<td>Kuipers, Miller, &amp; Patel ('02)</td>
<td>1982-1991</td>
<td>AD-20 to ED+5</td>
<td>181</td>
<td>N/A</td>
<td>Diversified U.K.</td>
<td>Domestic acquisitions</td>
</tr>
<tr>
<td>Danbolt ('02)</td>
<td>1946-1991</td>
<td>(-8,-3) m</td>
<td>474</td>
<td>N/A</td>
<td>Diversified U.K.</td>
<td>Cross-Border acquisitions</td>
</tr>
<tr>
<td>Beitel, Schiereck, &amp; Wahrenburg ('02)</td>
<td>1985-2000</td>
<td>(-20,0) (-10,0)</td>
<td>98</td>
<td>Financial, Insurance</td>
<td>Developed &amp; Developing countries</td>
<td>Targets worldwide being acquired by European banks</td>
</tr>
<tr>
<td>Goergen &amp; Renneboog ('04)</td>
<td>1993-2000</td>
<td>+9.01%</td>
<td>129</td>
<td>N/A</td>
<td>Diversified</td>
<td>Large acquisitions (over US$ 100 million)</td>
</tr>
</tbody>
</table>

**Note:** The figures in parentheses are t-statistics. Unless otherwise noted, event date is announcement date of merger/bid.  
Source:  
1 Bruner (2002)  
2 Datta, Pinches, and Narayanan (1992)  
3 Campa and Hernando (2004)  
4 Jensen and Ruback (1983)  
* Significant at 5% level or better  
** Significant at 0.1% level
Summary of Studies of Mergers and Acquisitions: Abnormal Returns for Bidding Firm's Shareholders

(A2.1) Studies reporting negative abnormal returns for bidding firm's shareholders

The table summarises the findings of 34 studies that examine the impact of mergers and acquisitions around the announcement date. These studies report that bidding firm shareholders' cumulative average abnormal returns are negative and range between -0.01 and -7.22%. The returns are consistent, despite variations in time period, observation period, industry involved, country coverage, type of deals (merger vs. tender offer), and measurement of returns. 14 of these studies report significantly negative returns ranging from -0.14 to -7.22%, which are very small compared with the reported cumulative average abnormal returns to target firms in Table A1.

<table>
<thead>
<tr>
<th>Study</th>
<th>Cumulative Abnormal Returns (%)</th>
<th>Sample Size</th>
<th>Sample Period</th>
<th>Event Window (days)</th>
<th>Positive Returns</th>
<th>Industry Coverage</th>
<th>Country Coverage</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Langetieg (78)(^1)</td>
<td>-1.61%</td>
<td>149</td>
<td>1929-1969</td>
<td>(-120,0)</td>
<td>47.6%</td>
<td>-</td>
<td>U.S.</td>
<td>Mergers, uses effective date as event date</td>
</tr>
<tr>
<td>Dodd (80)(^1),(^4)</td>
<td>-1.09%* , -7.22%</td>
<td>60</td>
<td>1970-1977</td>
<td>(-1,0);(-10,+10(outcome))</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Successful mergers</td>
</tr>
<tr>
<td></td>
<td>-1.24%* ; -5.50%</td>
<td>66</td>
<td></td>
<td>(-1,0);(-10,+10(outcome))</td>
<td></td>
<td></td>
<td></td>
<td>Unsuccessful mergers</td>
</tr>
<tr>
<td>Asquith (83)(^4)</td>
<td>-0.10% (-0.05) ; -5.90% (-3.15)</td>
<td>196</td>
<td>1962-1976</td>
<td>-1,0</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Successful mergers</td>
</tr>
<tr>
<td>Asquith et al. (87)(^1)</td>
<td>-0.85%*</td>
<td>343</td>
<td>1973-1983</td>
<td>(-1,0)</td>
<td>41%</td>
<td>-</td>
<td>U.S.</td>
<td>-</td>
</tr>
<tr>
<td>Varaiya &amp; Ferris (87)(^1)</td>
<td>-2.15%* , -3.90%*</td>
<td>96</td>
<td>1974-1983</td>
<td>(-1,0)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>-</td>
</tr>
<tr>
<td>Morck, Shleifer, &amp; Vishny (90)(^1)</td>
<td>-0.70%</td>
<td>326</td>
<td>1975-1987</td>
<td>(-1,1)</td>
<td>41.4%</td>
<td>-</td>
<td>U.S.</td>
<td>Measured return by comparing change in bidder MV to MV of target's equity</td>
</tr>
<tr>
<td>Morck, Shleifer, &amp; Vishny (90)(^3)</td>
<td>-1.89% , -4.09%</td>
<td>235</td>
<td>1975-1987</td>
<td>(-2,1)</td>
<td>N/A</td>
<td>-</td>
<td>-</td>
<td>No common 4D in top 3</td>
</tr>
<tr>
<td>Franks, Harris, &amp; Titman (91)(^1)</td>
<td>-1.45%</td>
<td>399</td>
<td>1975-1984</td>
<td>(-5,5)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Mergers and tender offers; segment data available on means of payment and competition</td>
</tr>
<tr>
<td>Study</td>
<td>Abnormal Return</td>
<td>N</td>
<td>Year Period</td>
<td>Methodology</td>
<td>Industry</td>
<td>Location</td>
<td>Notes</td>
<td></td>
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<tr>
<td>-------------------------------------------</td>
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<td>------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Servaes ('91)</td>
<td>-1.07%*</td>
<td>384</td>
<td>1972-1987</td>
<td>(-,Close)</td>
<td>N/A</td>
<td>U.S.</td>
<td>Mergers and tender offers; segment data by payment method</td>
<td></td>
</tr>
<tr>
<td>Jennings &amp; Mazzeo ('91)</td>
<td>-0.80%*</td>
<td>352</td>
<td>1979-1985</td>
<td>(-,0)</td>
<td>37%</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Datta, Pinches, &amp; Narayanan ('92)</td>
<td>-0.54%**</td>
<td>31</td>
<td>N/A</td>
<td>(1,6)</td>
<td>N/A</td>
<td>U.S.</td>
<td>Mergers and Tender offers, using 409 observations from 4 studies which used different time period (dating as far back as 1948)</td>
<td></td>
</tr>
<tr>
<td>Baeurlee &amp; Owens ('92)</td>
<td>-3.30%*</td>
<td>57</td>
<td>1978-1987</td>
<td>(-,0)</td>
<td>21%</td>
<td>-</td>
<td>White knight bids</td>
<td></td>
</tr>
<tr>
<td>Byrd &amp; Hickman ('92)</td>
<td>-1.20%*</td>
<td>128</td>
<td>1980-1987</td>
<td>(-,0)</td>
<td>33%</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Healy, Palepu, &amp; Ruback ('92)</td>
<td>-2.20%</td>
<td>50</td>
<td>1979-1984</td>
<td>(-,5,+5)</td>
<td>N/A</td>
<td>U.S.</td>
<td>50 largest US mergers during period</td>
<td></td>
</tr>
<tr>
<td>Eckbo ('92)</td>
<td>-0.41%</td>
<td>59</td>
<td>1965-1981</td>
<td>(-,20,+10)</td>
<td>N/A</td>
<td>Mining and manufacturing</td>
<td>U.S.</td>
<td>Target top 4D different from bidder Top 4 D</td>
</tr>
<tr>
<td>Kaplan &amp; Weisbach ('92)</td>
<td>-1.49%*</td>
<td>271</td>
<td>1971-1982</td>
<td>(-,5,+5)</td>
<td>38%</td>
<td>-</td>
<td>Mergers and tender offers</td>
<td></td>
</tr>
<tr>
<td>Kaplan &amp; Weisbach ('92)</td>
<td>-1.46%</td>
<td>177</td>
<td>N/A</td>
<td>No financial and railroad firms</td>
<td>U.S.</td>
<td>No common 3 D in top 4 D; T&gt;$100 M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Berkovitch &amp; Narayanan ('93)</td>
<td>-$10MM</td>
<td>330</td>
<td>1963-1988</td>
<td>(-,5,+5)</td>
<td>49.4%</td>
<td>-</td>
<td>Tender offer:</td>
<td></td>
</tr>
<tr>
<td>Sirower ('94)</td>
<td>-2.3%*</td>
<td>168</td>
<td>1979-1990</td>
<td>(-,1,+1)</td>
<td>35%</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Maqueirea et al. ('98)</td>
<td>-4.79%</td>
<td>47</td>
<td>1977-1996</td>
<td>(-,2,+2)</td>
<td>N/A</td>
<td>-</td>
<td>Different primary 2D; stock only</td>
<td></td>
</tr>
<tr>
<td>Chevalier ('00)</td>
<td>-1.92%</td>
<td>289</td>
<td>1980-1995</td>
<td>(-,5,+5)</td>
<td>N/A</td>
<td>-</td>
<td>No 2D in common</td>
<td></td>
</tr>
<tr>
<td>Eckbo &amp; Thornburn ('00)</td>
<td>-0.30%</td>
<td>390</td>
<td>1964-1983</td>
<td>(-,0)</td>
<td>N/A</td>
<td>U.S.</td>
<td>US acquirers of Canadian targets</td>
<td></td>
</tr>
<tr>
<td>Mulherin &amp; Boone ('00)</td>
<td>-0.37%</td>
<td>281</td>
<td>1990-1999</td>
<td>(-,1,+1)</td>
<td>N/A</td>
<td>Diversified non-financial</td>
<td>U.S.</td>
<td>-</td>
</tr>
<tr>
<td>Mitchell &amp; Stafford ('00)</td>
<td>-0.14%*</td>
<td>356</td>
<td>1961-1993</td>
<td>(-,1)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td></td>
</tr>
<tr>
<td>Walker ('00)</td>
<td>-0.84%*</td>
<td>278</td>
<td>1980-1996</td>
<td>(-2,+2)</td>
<td>41.4%</td>
<td>Non-financial &amp; non-utilities</td>
<td>U.S.</td>
<td>-</td>
</tr>
<tr>
<td>DeLong ('01)</td>
<td>-1.68%*</td>
<td>280</td>
<td>1988-1995</td>
<td>(-,10,+1)</td>
<td>33.6%</td>
<td>Banking</td>
<td>Deals in which at least one party is a bank</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Return</td>
<td>Event Window</td>
<td>Industry</td>
<td>Country</td>
<td>Source</td>
<td>Notes</td>
<td></td>
<td></td>
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<td>-----------------------------</td>
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<td>----------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Houston, James, &amp;</td>
<td>-4.64%*</td>
<td>1985-1990</td>
<td>Banking</td>
<td>U.S.</td>
<td>(01)</td>
<td>Deals in which both parties are banks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ryngaert</td>
<td>-2.61%</td>
<td>1991-1996</td>
<td>Deal</td>
<td>U.S.</td>
<td></td>
<td>New Compustat segment; A&gt;$100M; A has only 1 segment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyland &amp; Dilts ('02)</td>
<td>-0.01%</td>
<td>1978-1979</td>
<td>N/A</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martinez-Jerez ('02)</td>
<td>-2.93%</td>
<td>1990-1998</td>
<td>N/A</td>
<td>Diversified</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kuipers et al. ('02)</td>
<td>-2.12%</td>
<td>1990-1998</td>
<td>32%</td>
<td>Diversified countries</td>
<td>OECD</td>
<td>AD first announcement date of any bid for US target and the announcement date of the acquirer's first bid for foreign acquirers ED corresponding effective date of the final bid for the target</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beitel et al. ('02)</td>
<td>-0.14%</td>
<td>1985-2000</td>
<td>Financial, Insurance</td>
<td>Developed &amp; Developing countries</td>
<td></td>
<td>Diversifying acquisitions display negative returns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doukas, Holmen, &amp;</td>
<td>-2.37%</td>
<td>1980-1995</td>
<td>46%</td>
<td>Diversified</td>
<td>Sweden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travlos ('02)</td>
<td>-1.12%</td>
<td>AD-20 to ED+5</td>
<td>N/A</td>
<td>Diversified</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Akbulut &amp; Matsusaka ('03)</td>
<td>-0.42%</td>
<td>1950-2002</td>
<td>44%</td>
<td>Diversified</td>
<td>U.S.</td>
<td>No 2-digit SIC code in common</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goergen &amp; Renneboog ('04)</td>
<td>+0.70%</td>
<td>1990-2000</td>
<td>N/A</td>
<td>Diversified</td>
<td>18 European countries</td>
<td>Large acquisitions (over US$ 100 million)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The figures in parentheses are t-statistics; Unless otherwise noted, event date is announcement date of merger/bid.

* Top return is based on an equal-weighted benchmark portfolio. Bottom return is based on a value-weighted benchmark portfolio; ** Top return is a return adjusted for average market returns. Boxcar return is adjusted for return on a matched firm. 4D means 4-digit SIC code; Top 3 means the firm's three most important business; T represents target and A represents acquirer; = the return is not adjusted for market movements and is divided by the value of the target; d = event window ends 2 months after completion of merger; *= monthly returns.

Source:
2. Datta, Pinches, and Narayanan (1992)

* Significant at 5% or better
** Significant at 1%
Table A2

Summary of Studies of Mergers and Acquisitions: Abnormal Returns for Bidding Firm's Shareholders

(A2.2) Studies reporting zero or positive abnormal returns for bidding firm's shareholders

The table summarises the finding of 36 studies that examine the impact of mergers and acquisitions around the announcement date. These studies report that bidding firm shareholders' cumulative average abnormal returns are zero or positive and range between zero and 6.66%. The returns are consistency, despite variations in time period, observation period, industry involved, country coverage, type of deals (merger vs. tender offer), and measurement of returns. 18 of these studies report significantly positive returns range from 0.57 to 6.66% which are very small compared with the reported cumulative average abnormal returns for target firm's shareholders in Table A1.

<table>
<thead>
<tr>
<th>Study</th>
<th>Cumulative Abnormal Returns (%)</th>
<th>Sample Size</th>
<th>Sample Period</th>
<th>Event Window (days)</th>
<th>Positive Returns</th>
<th>Industry Coverage</th>
<th>Country Coverage</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dodd &amp; Ruback ('77)$^1$</td>
<td>+2.83%*</td>
<td>124</td>
<td>1958-1978</td>
<td>N/A</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Tender offers, monthly data</td>
</tr>
<tr>
<td></td>
<td>(Successful)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>+0.58%</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Unsuccessful)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kummer &amp; Hoffmeister ('78)$^1$</td>
<td>+5.20%*</td>
<td>17</td>
<td>1956-1974</td>
<td>N/A</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Tender offers, monthly data</td>
</tr>
<tr>
<td></td>
<td>(Successful)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bradley ('80)$^1$</td>
<td>+4.36%*</td>
<td>88</td>
<td>1962-1977</td>
<td>(20, +20)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Tender offers</td>
</tr>
<tr>
<td></td>
<td>(Successful)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>-2.96%</td>
<td>46</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td>(Unsuccessful)</td>
<td></td>
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</tr>
<tr>
<td>Jarrel &amp; Bradley ('80)$^1$</td>
<td>-6.66%*</td>
<td>88</td>
<td>1962-1977</td>
<td>(-40, +20)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Tender offers</td>
</tr>
<tr>
<td></td>
<td>(Successful)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+0.80%</td>
<td>60</td>
<td>1970-1977</td>
<td>1m</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Mergers</td>
</tr>
<tr>
<td></td>
<td>(0.67)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>(Successful)</td>
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<tr>
<td></td>
<td>+3.13%</td>
<td>66</td>
<td></td>
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<td></td>
<td>(2.05)</td>
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</tr>
<tr>
<td></td>
<td>(Unsuccessful)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bradley, Desai &amp; Kim ('82)$^1$</td>
<td>+2.35%*</td>
<td>161</td>
<td>1962-1980</td>
<td>(-10, +10)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Tender offers</td>
</tr>
<tr>
<td></td>
<td>(Successful)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asquith ('83)$^1$</td>
<td>+0.20%; +0.20%</td>
<td>196</td>
<td>1962-1976</td>
<td>(1, 0); lm</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Mergers</td>
</tr>
<tr>
<td></td>
<td>(0.78), (0.25)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Successful)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+0.50%; +1.30%</td>
<td>89; 87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Unsuccessful)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>Methodology, Comment</td>
<td>Sample Size</td>
<td>Time Period</td>
<td>Return</td>
<td>N/A</td>
<td>U.S.</td>
<td>Industry/Comment</td>
<td></td>
</tr>
<tr>
<td>------------------------------</td>
<td>-----------------------------------------------------------</td>
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<td>----------------------------------</td>
<td></td>
</tr>
<tr>
<td>Asquith, Bruner, &amp; Mullins ('83)</td>
<td>Successful, (1.92); (1.49) Unsuccessful</td>
<td>170</td>
<td>1963-1979</td>
<td>(-20,+1)</td>
<td>N/A</td>
<td>U.S. Mergers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eckbo ('83)</td>
<td>Successful, +0.70% (Unsuccessful)</td>
<td>102</td>
<td>1963-1978</td>
<td>(-1.0);1m</td>
<td>N/A</td>
<td>U.S. Mergers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malatesta ('83)</td>
<td>Successful, +0.90% (Unsuccessful)</td>
<td>256</td>
<td>1969-1974</td>
<td>(0,0)</td>
<td>N/A</td>
<td>U.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wier ('83)</td>
<td>Successful, +3.99% (Unsuccessful)</td>
<td>16</td>
<td>1962-1979</td>
<td>(-10, cancellation date)</td>
<td>N/A</td>
<td>U.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dennis &amp; McConnell ('86)</td>
<td>Successful, -0.12%; +3.24% Unsuccessful</td>
<td>90</td>
<td>1962-1980</td>
<td>(-1.0); (+6)</td>
<td>52%</td>
<td>U.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bradley, Desai, &amp; Kim ('88)</td>
<td>Successful, +1% Unsuccessful</td>
<td>236</td>
<td>1863-1984</td>
<td>(-5,+5)</td>
<td>47%</td>
<td>U.S. Tender offers</td>
<td>Bidder returns decreased from +4% to -3% overtime</td>
<td></td>
</tr>
<tr>
<td>Jarrell, Brickley, &amp; Netter ('88)</td>
<td>Successful, +1.14% (2.49)</td>
<td>405</td>
<td>1962-1985</td>
<td>(-10,+5)</td>
<td>N/A</td>
<td>U.S.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jarrel &amp; Poulsen ('89)</td>
<td>Successful, +0.92% (3.31)</td>
<td>461</td>
<td>1963-1986</td>
<td>(-5,+5)</td>
<td>N/A</td>
<td>U.S. Tender offers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lang, Stulz, &amp; Walkling ('89)</td>
<td>Successful, 0%</td>
<td>87</td>
<td>1968-1986</td>
<td>(-5,+5)</td>
<td>N/A</td>
<td>U.S. Tender offers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lodder &amp; Martin ('90)</td>
<td>Successful, +1.72%; +2.57% +0.07% Unsuccessful</td>
<td>970</td>
<td>1966-1968</td>
<td>(-5.0)</td>
<td>N/A</td>
<td>U.S. Mergers</td>
<td>Mergers and tender offers; segment data available on size of acquisition</td>
<td></td>
</tr>
<tr>
<td>Morck, Shleifer, &amp; Vishny ('90)</td>
<td>Successful, 0.23%</td>
<td>120</td>
<td>1975-1979</td>
<td>(-2,+1)</td>
<td>N/A</td>
<td>U.S. Tender offers</td>
<td>No common 4D in top 3</td>
<td></td>
</tr>
<tr>
<td>Datta, Pinches, &amp;</td>
<td>Successful, +0.60%**</td>
<td>32</td>
<td>N/A</td>
<td>(-10,-2)</td>
<td>N/A</td>
<td>U.S.</td>
<td>Mergers and tender offers; using 409</td>
<td></td>
</tr>
</tbody>
</table>

Note: N/A indicates data not available.
<table>
<thead>
<tr>
<th>Researcher(s)</th>
<th>Year</th>
<th>Sample</th>
<th>Time Period</th>
<th>N/A</th>
<th>Industry</th>
<th>Country</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narayanan ('92)</td>
<td>+0.17%</td>
<td>51</td>
<td>(-1,6)</td>
<td></td>
<td>Mining and manufacturing</td>
<td>Canada</td>
<td>Target top 4D different from bidder top 4 4D</td>
</tr>
<tr>
<td>Eckbo ('92)</td>
<td>+0.62%</td>
<td>62</td>
<td>1964-1982</td>
<td>(0)^*</td>
<td>N/A</td>
<td>Canada</td>
<td>Stock only</td>
</tr>
<tr>
<td>Matsusaka ('93)</td>
<td>+1.23%</td>
<td>67</td>
<td>1968, 71, 74</td>
<td>(-5,5)</td>
<td>N/A</td>
<td>U.S.</td>
<td>Stock only</td>
</tr>
<tr>
<td>Smith &amp; Kim ('94)</td>
<td>+0.50%</td>
<td>177</td>
<td>1980-1986</td>
<td>(5,5)</td>
<td>N/A</td>
<td>U.S.</td>
<td>Successful &amp; unsuccessful tender offers</td>
</tr>
<tr>
<td>Schwen ('96)</td>
<td>+1.40%</td>
<td>666</td>
<td>1975-1991</td>
<td>(-5,126)</td>
<td>N/A</td>
<td>U.S.</td>
<td>Mergers and tender offers</td>
</tr>
<tr>
<td>Maquieira, Megginson, &amp; Nail ('98)</td>
<td>-4.79%</td>
<td>47</td>
<td>1963-1996</td>
<td>(60,60)</td>
<td>N/A</td>
<td>U.S.</td>
<td>Stock for stock mergers</td>
</tr>
<tr>
<td>Hubbard and Falia ('99)</td>
<td>+0.24%</td>
<td>N/A</td>
<td>1961-1970</td>
<td>(-5,5)</td>
<td>N/A</td>
<td>U.S.</td>
<td>No 2D in common</td>
</tr>
<tr>
<td>Lyroudi, Lazaridis, &amp; Subeniotis ('99)</td>
<td>0%</td>
<td>50</td>
<td>1989-1991</td>
<td>(-5,5)</td>
<td>N/A</td>
<td>-</td>
<td>Intertional acquisitions by European and Japanese firms</td>
</tr>
<tr>
<td>Eckbo &amp; Thorburn ('00)</td>
<td>+1.71%*</td>
<td>1,261</td>
<td>1964-1983</td>
<td>(40,0)</td>
<td>N/A</td>
<td>Canada</td>
<td>Canadian bidders and targets</td>
</tr>
<tr>
<td>Leech &amp; Borg ('00)</td>
<td>+3.12%*</td>
<td>466</td>
<td>1919-1930</td>
<td>(40,0)</td>
<td>N/A</td>
<td>U.S.</td>
<td>-</td>
</tr>
<tr>
<td>Mullerin ('00)</td>
<td>+0.85%*</td>
<td>161</td>
<td>1962-1997</td>
<td>(1,0)</td>
<td>49%</td>
<td>U.S.</td>
<td>Incomplete acquisitions</td>
</tr>
<tr>
<td>Kohers &amp; Kohers ('00)</td>
<td>+1.37%*</td>
<td>961</td>
<td>1987-1996</td>
<td>(0,1)</td>
<td>N/A</td>
<td>U.S.</td>
<td>Mergers among high-tech firms</td>
</tr>
<tr>
<td>Floreani &amp; Rigamonti ('01)</td>
<td>+3.65%</td>
<td>56</td>
<td>(96-2000)</td>
<td>(-20,-2)</td>
<td>N/A</td>
<td>U.S., Europe, Australia</td>
<td>Financial, Insurance Developed &amp; Developing countries</td>
</tr>
<tr>
<td>Beitel et al. ('02)</td>
<td>+0.42%</td>
<td>98</td>
<td>1985-2000</td>
<td>(-20,0)</td>
<td>53%</td>
<td>U.S.</td>
<td>Targets worldwide being acquired by European banks</td>
</tr>
</tbody>
</table>

*Observations from 41 studies which used different time period (dating as far back as 1948)
<table>
<thead>
<tr>
<th>Study</th>
<th>5-Year Return</th>
<th>Date</th>
<th>t-Statistic</th>
<th>N/A</th>
<th>Country</th>
<th>Segment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doukas et al. ('02)¹</td>
<td>+0.24%</td>
<td>1980-1995</td>
<td>(-18, +10)</td>
<td>52%</td>
<td>Diversified</td>
<td>Sweden</td>
<td>Diversified acquisitions display positive returns</td>
</tr>
<tr>
<td></td>
<td>+2.74%</td>
<td></td>
<td>(-5, +5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+1.38%</td>
<td></td>
<td>(-5, +1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+1.10%</td>
<td></td>
<td>(-1, +i)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+0.83%</td>
<td></td>
<td>(+1, 0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+0.95%</td>
<td></td>
<td>(0, +1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyland and Ditz ('02)²</td>
<td>+0.01%</td>
<td>1978-1992</td>
<td>(-1, 0)</td>
<td>N/A</td>
<td></td>
<td>U.S.</td>
<td>A-&gt;$100 M; A has only 1 segment</td>
</tr>
<tr>
<td></td>
<td>+0.03%</td>
<td>1980-1987</td>
<td>(-5, +1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raj &amp; Forsyth ('02)²</td>
<td>+1.60%</td>
<td>1994-1998</td>
<td>(-15, +15)</td>
<td>N/A</td>
<td>Diversified</td>
<td>U.K.</td>
<td>Related sample</td>
</tr>
<tr>
<td></td>
<td>+0.75%</td>
<td></td>
<td>(0, +1)</td>
<td></td>
<td></td>
<td></td>
<td>Related sample</td>
</tr>
</tbody>
</table>

Note: The figures in parentheses are t-statistics; Unless otherwise noted, event date is announcement date of merger/bid.  
4D means 4-digit SIC code; Top 3 means the firm's three most important business; *= the return is not adjusted for market movements and is divided by the value of the target; **= monthly returns.

Source: The finding summary reported in the following studies. However, the repeated study results were excluded.

¹ Bruner (2002)  
² Campa and Hernando (2004)  
³ Datta, Pinches, and Narayanan (1992)  
⁴ Jensen and Ruback (1983)  
⁵ Akbulut and Matsusaka (2003)  
*Significant at 5% level or better  
**Significant at 1%
Table A2

### Summary of Studies of Mergers and Acquisitions: Abnormal Returns for Bidding Firm's Shareholders

(A2.3) Studies reporting long-term negative abnormal returns for bidding firm's shareholders

The table summarises the findings of 23 studies that examine the impact of mergers and acquisitions after the announcement date or long-term performance. The studies report that bidding firm shareholders' cumulative average abnormal returns are negative, despite variations in time period, observation period, industry involved, country coverage, and measurement of returns. 11 of these studies report significantly negative cumulative average abnormal returns.

<table>
<thead>
<tr>
<th>Study</th>
<th>Cumulative Abnormal Returns (%)</th>
<th>Sample Size</th>
<th>Sample Period</th>
<th>Event Window (days)</th>
<th>Positive Returns</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandelker ('74)</td>
<td>-1.32%1</td>
<td>241</td>
<td>1941-1963</td>
<td>(0,+365)</td>
<td>N/A</td>
<td>Mergers, event date is date of consummation of the deal</td>
</tr>
<tr>
<td></td>
<td>(Successful)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+0.60%2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.31)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-1.40%</td>
<td>241</td>
<td>1941-1962</td>
<td>40m^p</td>
<td>N/A</td>
<td>Mergers; event date is completion date</td>
</tr>
<tr>
<td></td>
<td>(Constant beta)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-2.60%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Moving beta)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dodd &amp; Ruback ('77)</td>
<td>-1.32%1</td>
<td>124</td>
<td>1958-1978</td>
<td>(0,+365)</td>
<td>N/A</td>
<td>Tender offers</td>
</tr>
<tr>
<td></td>
<td>(Successful)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-1.60%2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Unsuccessful)</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-5.90%2</td>
<td>124</td>
<td>1858-1976</td>
<td>60m^p</td>
<td>N/A</td>
<td>Tender offers</td>
</tr>
<tr>
<td></td>
<td>(Successful)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-2.62%2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Unsuccessful)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+8.44%2</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>(Clean-up mergers)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Langetieg ('78)</td>
<td>-6.50%1*</td>
<td>149</td>
<td>1929-1969</td>
<td>(0,+365)</td>
<td>N/A</td>
<td>Mergers</td>
</tr>
<tr>
<td></td>
<td>(Successful)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-22.30 to -26.15%**2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firth ('80)'</td>
<td>+0.1%</td>
<td>434</td>
<td>1969-1975</td>
<td>36m^p</td>
<td>N/A</td>
<td>Mergers and tender offers</td>
</tr>
<tr>
<td></td>
<td>(Successful)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-3.50%</td>
<td>129</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Unsuccessful)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asquith ('83)'</td>
<td>-7.20%*</td>
<td>196</td>
<td>1962-1976</td>
<td>(0,+240)</td>
<td>N/A</td>
<td>Mergers</td>
</tr>
<tr>
<td>Study</td>
<td>Methodology</td>
<td>Sample Size</td>
<td>Event Date</td>
<td>Event Date Type</td>
<td>Results</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>-------------</td>
<td>------------</td>
<td>----------------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>Bradley, Desai, &amp; Kim ('83)</td>
<td>Tender offers</td>
<td>94</td>
<td>1962-1980</td>
<td>(0, +365)</td>
<td>N/A</td>
<td>-7.85%* (Successful) -9.60%* (Unsuccessful)</td>
</tr>
<tr>
<td>Malatesta ('83)</td>
<td>Mergers, event date is date of approval</td>
<td>121</td>
<td>1969-1974</td>
<td>(0, +365)</td>
<td>N/A</td>
<td>-2.90% (Whole sample) -12.70%* (Smaller bidders) -7.70% (Unsuccessful) -7.60%* (Successful) -2.90% (Whole sample)</td>
</tr>
<tr>
<td>Barnes ('84)</td>
<td>Mergers</td>
<td>39</td>
<td>1974-1976</td>
<td>60mP</td>
<td>N/A</td>
<td>-6.30%</td>
</tr>
<tr>
<td>Dodds &amp; Quek ('85)</td>
<td>Mergers</td>
<td>70</td>
<td>1974-1976</td>
<td>60mP</td>
<td>N/A</td>
<td>-6.80%</td>
</tr>
<tr>
<td>Bradley &amp; Jarrell ('88)</td>
<td>Mergers and tender offers; Bradley &amp; Jarrell (BJ) and Magenbeim &amp; Mueller ('88)</td>
<td>78</td>
<td>1976-1981</td>
<td>36mP</td>
<td>N/A</td>
<td>-16.00%</td>
</tr>
<tr>
<td>Magenbeim &amp; Mueller ('88)</td>
<td>Muller (MM) use the same data but different methodologies, reach opposite results. Agrawal and Jaffe ('99) are inclined to put more weight on BJ's results because of their approach avoids MM's methodological problem.</td>
<td>51</td>
<td>1976-1981</td>
<td>36mP</td>
<td>N/A</td>
<td>-24.37% (Mergers) -6.32% (Tender offers)</td>
</tr>
<tr>
<td>Franks, Harris, &amp; Mayer ('88)</td>
<td>Mergers and tender offers; event date is completion date</td>
<td>392</td>
<td>1955-1984</td>
<td>24mP</td>
<td>N/A</td>
<td>-1.80 to 18.80% (Successful) -3.60 to +9.40% (Unsuccessful) -9.40 to +4.20% (UK, Equity) +1.75 to +17.50% (UK, Cash)</td>
</tr>
<tr>
<td>Franks and Harris ('89)</td>
<td>UK mergers and tender offers; event date is completion date</td>
<td>1,058</td>
<td>1955-1985</td>
<td>24mP</td>
<td>N/A</td>
<td>-12.60 to 4.80%* (UK, Equity) -12.80%* (UK, Cash)</td>
</tr>
<tr>
<td>Limmack ('91)</td>
<td>UK mergers and tender offers; the results from two of three methods are statistically significant</td>
<td>448</td>
<td>1977-1986</td>
<td>24mP</td>
<td>N/A</td>
<td>-14.96 to -4.67% (Successful) -26.25 to -7.38% (Unsuccessful)</td>
</tr>
<tr>
<td>Franks, Harris, &amp; Titman ('91)</td>
<td>Mergers and tender offers</td>
<td>399</td>
<td>1975-1984</td>
<td>36mP</td>
<td>N/A</td>
<td>-3.96% (Event time) +1.80%</td>
</tr>
<tr>
<td>Study</td>
<td>Sample Period</td>
<td>5-Year Post-merger Performance</td>
<td>Event Date</td>
<td>Event Completion Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>-----------------</td>
<td>--------------------------------</td>
<td>------------</td>
<td>-----------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agrawal, Jaffe, &amp; Mandelker ('92)</td>
<td>1955-1987</td>
<td>-10.26%*</td>
<td>(0, +1250)</td>
<td>Event is completion date</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>+2.20%*</td>
<td>60m²</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loderer &amp; Martin ('92)</td>
<td>1965-1986</td>
<td>+1.5%*</td>
<td>(0, +1250)</td>
<td>Event is completion date</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-0.75%*</td>
<td>60m²</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loderer &amp; Martin ('92)</td>
<td>1966-1986</td>
<td>+1%</td>
<td>(0, +1250)</td>
<td>Event is completion date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anderson &amp; Mandelker ('93)</td>
<td>1966-1987</td>
<td>-31%**</td>
<td>60m²</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kennedy &amp; Limmack ('96)</td>
<td>1980-1989</td>
<td>-5.08%</td>
<td>23m²</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gregory ('97)</td>
<td>1984-92</td>
<td>-12% to -18%*</td>
<td>(0, +500)</td>
<td>31 to 37%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loughran &amp; Vigh ('97)</td>
<td>1970-1989</td>
<td>-14.20%*</td>
<td>(1, +1250)</td>
<td>Event is completion date</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>+61.30%*</td>
<td>60m²</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-0.10%*</td>
<td>135</td>
<td>Event is completion date</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-15.90%**</td>
<td>(Combined)</td>
<td>Event is completion date; reported marginal statistical significance (t=1.67)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>+43.00%*</td>
<td>(Tender offers)</td>
<td>Event is completion date; reported marginal statistical significance (t=1.67)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rau &amp; Vermaelen ('96)</td>
<td>1980-1991</td>
<td>-4%*</td>
<td>(0, +36)²</td>
<td>3 yr post acquisition returns, with insights into value and glamour investing strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>+9%*</td>
<td>348</td>
<td>3 yr post acquisition returns, with insights into value and glamour investing strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mitchell &amp; Stafford ('98)</td>
<td>1961-1993</td>
<td>-2.00%**</td>
<td>(0, +36)²</td>
<td>3 yr post acquisition returns, with insights into value and glamour investing strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-7.90%**</td>
<td>(Fama-French)</td>
<td>3 yr post acquisition returns, with insights into value and glamour investing strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regression</td>
<td>-1.80%</td>
<td>CAARs-size &amp; b/m adj</td>
<td>-5.40%**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>--------</td>
<td>----------------------</td>
<td>---------</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The figures in parentheses are t-statistics
m = Number of post-event months
ABHAR = Average buy and hold abnormal return, CAAR = Cumulative average abnormal return, b/m = book/market, adj = adjust-

Unless otherwise noted, event date is announcement date of merger/bid.

Source:
2. Agrawal and Jaffe (1999)

*Significant at 5% or better
**Significance results reported by2
### Summary of Studies of Mergers and Acquisitions: Combined Returns of Target and Bidding Firms

The table summarises the findings of 24 studies that examine the impact of mergers and acquisitions around the announcement date. A number of studies examine this by forming a portfolio of the target and bidding firms then, investigate either their weighted average returns (weighted by the relative sizes of the two firms) or absolute dollar value of returns. The studies report that combined cumulative average abnormal returns for target and bidding firms' shareholders are positive, despite variations in time period, observation period, industry involved, country coverage, type of deals (mergers vs. tender offers), and measurement of returns. 11 of these studies report significantly positive returns. These surveys conclude that merger and acquisition transaction results in a total increase in the combined value of the event firms.

<table>
<thead>
<tr>
<th>Study</th>
<th>Cumulative Abnormal Returns (%)</th>
<th>Sample Size</th>
<th>Sample Period</th>
<th>Event Window (days)</th>
<th>Positive Returns</th>
<th>Industry Coverage</th>
<th>Coverage Country</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halpern (73)</td>
<td>+$27.35 MM</td>
<td>77</td>
<td>1950-1965</td>
<td>(-140,0)</td>
<td>N/A</td>
<td>-</td>
<td>-</td>
<td>Mergers</td>
</tr>
<tr>
<td>Langetieg (78)</td>
<td>0%</td>
<td>149</td>
<td>1929-1969</td>
<td>(0,+60)</td>
<td>46%</td>
<td>-</td>
<td>U.S.</td>
<td>Mergers; uses effective date as event baseline</td>
</tr>
<tr>
<td>Firth (80)</td>
<td>-$36.60 MM</td>
<td>434</td>
<td>1969-1975</td>
<td>(-20,0)</td>
<td>N/A</td>
<td>-</td>
<td>U.K.</td>
<td>U.K. acquisitions</td>
</tr>
<tr>
<td>Bradley, Desai, &amp; Kim (82)</td>
<td>+$17 MM</td>
<td>162</td>
<td>1962-1980</td>
<td>(-20,+5)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Tender offers; referenced through Jensen &amp; Ruback (83)</td>
</tr>
<tr>
<td>Bradley, Desai, &amp; Kim (83)</td>
<td>+$33.90 MM</td>
<td>161</td>
<td>1963-1980</td>
<td>(-20,+5)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Referenced through Weidenbaum &amp; Vogt (87)</td>
</tr>
<tr>
<td>Malatesta (83)</td>
<td>+$32.40 MM*</td>
<td>30</td>
<td>1969-1974</td>
<td>(-20,+20)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Mergers</td>
</tr>
<tr>
<td>Varaiya (85)</td>
<td>+$60.70 MM, -3.90%</td>
<td>N/A</td>
<td>N/A</td>
<td>(-60,+60)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Referenced through Weidenbaum &amp; Vogt (87)</td>
</tr>
<tr>
<td>Bradley, Desai, &amp; Kim (88)</td>
<td>+$117 MM, +7.43%*</td>
<td>236</td>
<td>1963-1984</td>
<td>(-5,+5)</td>
<td>75%</td>
<td>-</td>
<td>U.S.</td>
<td>Tender offers; sub-period data available for 7/63-6/68, 7/68-12/80, 1/81-12/84; combined returns have not changed significantly over time</td>
</tr>
<tr>
<td>Lang, Stulz, &amp; Walkling (89)</td>
<td>+11.30%*</td>
<td>87</td>
<td>1968-1986</td>
<td>(-5,+5)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Tender offers</td>
</tr>
<tr>
<td>Franks, Harris, &amp; Tatman (91)</td>
<td>+3.9%*</td>
<td>399</td>
<td>1975-1984</td>
<td>(-5,+5)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Mergers and tender offers</td>
</tr>
<tr>
<td>Seraes (91)</td>
<td>+3.66%*</td>
<td>384</td>
<td>1972-1987</td>
<td>(-1,Close)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Mergers and tender offers</td>
</tr>
<tr>
<td>Banerjee &amp; Owers (92)</td>
<td>+$9.95 MM</td>
<td>33</td>
<td>1978-1987</td>
<td>(-1,0)</td>
<td>N/A</td>
<td>-</td>
<td>-</td>
<td>White knight bids</td>
</tr>
<tr>
<td>Healy, Palepu, &amp; Ruback (92)</td>
<td>+9.10%*</td>
<td>50</td>
<td>1979-1984</td>
<td>(-5,+5)</td>
<td>N/A</td>
<td>-</td>
<td>U.S.</td>
<td>Largest US mergers during period</td>
</tr>
<tr>
<td>Study</td>
<td>Sample Size</td>
<td>Year Range</td>
<td>Event Window</td>
<td>N/A</td>
<td>U.S.</td>
<td>Methodology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------</td>
<td>------------------</td>
<td>--------------</td>
<td>-----</td>
<td>-------</td>
<td>-------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kaplan &amp; Weisbach ('92)¹</td>
<td>209</td>
<td>1971-1982</td>
<td>(-5,+5)</td>
<td>66%</td>
<td>U.S.</td>
<td>Mergers and tender offers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Berkovitch &amp; Narayanan ('93)³</td>
<td>330</td>
<td>1963-1988</td>
<td>(-5,+5)</td>
<td>75%</td>
<td>U.S.</td>
<td>Tender offers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smith &amp; Kim ('94)¹</td>
<td>177</td>
<td>1980-1986</td>
<td>(-5,+5)</td>
<td>79.1%</td>
<td>U.S.</td>
<td>Tender offers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leeth &amp; Borg ('00)¹</td>
<td>53</td>
<td>1919-1930</td>
<td>(-40,0)</td>
<td>56.6%</td>
<td>U.S.</td>
<td>In 1998 dollars</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulherin &amp; Boone ('00)³</td>
<td>281</td>
<td>1990-1999</td>
<td>(-1,+1)</td>
<td>N/A</td>
<td>U.S.</td>
<td>Diversified non-financial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mulherin ('00)¹</td>
<td>116</td>
<td>1962-1997</td>
<td>(-1,0)</td>
<td>66%</td>
<td>U.S.</td>
<td>Incomplete acquisitions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Houston, James, &amp; Ryngaert ('01)³</td>
<td>37</td>
<td>1985-1990</td>
<td>(-4,+1)</td>
<td>N/A</td>
<td>U.S.</td>
<td>Banking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aktas et al. ('02)²</td>
<td>80</td>
<td>1995-1999</td>
<td>(-5,0)</td>
<td>37%</td>
<td>Diversified</td>
<td>France</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kuipers et al. ('02)³</td>
<td>120</td>
<td>1982-1991</td>
<td>AD-20 to ED+5</td>
<td>N/A</td>
<td>OECD countries</td>
<td>Value creating business Combinations N=37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For Mulherin ('00)³, in 1998 dollars.

For Houston, James, & Ryngaert ('01)³, both parties are banks.

For Aktas et al. ('02)², the event window is AD-20 to ED+5.

For Kuipers et al. ('02)³, the event window is AD-20 to AD-6.
<table>
<thead>
<tr>
<th>Source</th>
<th>Period</th>
<th>ED Corresponding Effective Date</th>
<th>Financial, Insurance</th>
<th>Target Date World Wide Being Acquired by European Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beitel et al. ('02)&lt;sup&gt;2&lt;/sup&gt;</td>
<td>1985-2000</td>
<td>ED corresponding effective date of the final bid for the target</td>
<td>Financial, Insurance Developed &amp; Developing countries</td>
<td>Targets worldwide being acquired by European banks</td>
</tr>
<tr>
<td>Akbulut &amp; Matsusaka ('03)</td>
<td>1950-2002</td>
<td>ED corresponding effective date of the final bid for the target</td>
<td>Financial, Insurance Developed &amp; Developing countries</td>
<td>Targets worldwide being acquired by European banks</td>
</tr>
</tbody>
</table>

**Note:** The figures in parentheses are t-statistics; Unless otherwise noted, event date is announcement date of merger/bid.

**Source:** The finding summary reported in the following studies. However, the repeated study results were excluded.

1 Bruner (2002)
2 Campa and Hernando (2004)
*Significant at 5% or better
**Significant at 1%
Table B1

Results of the Analyses of Characteristic Target Firms (Bid Period)

This table demonstrates abnormal returns to target firms for tender offer occurring from 1992-2002. The expected returns for the target firm’s shareholders for the bid period (-12,+12) were measured from the market and market-adjusted (zero-one) models. The monthly abnormal returns to the target firm’s shareholders from 12 months before the event month until 12 months after the event month were estimated then, cross-sectional averaged in each month by the number of the firms to be AARs. The AARs are accumulated from the first month until the last month of the investigation period to be the cumulative average abnormal returns (CAARs) for the target firm’s shareholders, or using the cumulative abnormal return (CAR) method. For further comparison, the buy-and-hold abnormal return (BHAR) method was applied by continuously compounded the abnormal returns from the first month until the last month of the investigation period then, averaged to be the average buy-and-hold abnormal returns (ABHARs) for the target firm’s shareholders. Also, total or the sum of standardised abnormal returns (residuals) (TSRs), and average event-period standardised abnormal returns (residuals) (ASRs) for the target firm’s shareholders were calculated. Then, the means of the TSRs (ATSRs) and ASRs (AASRs) were estimated and are shown in the table. To study as many characteristic target firms as taking place on the Stock exchange of Thailand (SET), the target firms were comprehensively classified by the target firm itself and/or the tender offer characteristics as well as these combinations into the subsets of the target firms. There are a total of 27 alternatives, including all target firms investigative alternative, for the target firm investigations for the bid period (-12,+12). Three parametric statistic tests: standardised-residual, standardised cross-sectional, and conventional t-tests, were applied to test the significance of the average abnormal returns for the target firm’s shareholders. The t-statistics were calculated by using the first two tests with the ATSRs and the AASRs respectively, meanwhile, the last test was applied with the CAARs and ABHARs. The t-statistics are the sum of the standardised residuals divided by (approximately) the square root of the number of sample firms, and the average event-period standardised residual divided by its contemporaneous cross-sectional standard error respectively. The standardised residual equals the event-period residual divided by the standard deviation of the estimation-period residuals, adjusted to reflect the forecast error. The conventional t-test statistic is the average abnormal return divided by its cross-sectional standard error. All three parametric significance test formulas are shown as follows: \( t = \frac{\sum_{i=1}^{N} SR_{it}}{\sqrt{N}} \); \( t = \frac{N \sum_{i=1}^{N} SR_{it}}{\sqrt{1/N(N-1) \sum_{i=1}^{N} (SR_{it} - \sum_{i=1}^{N} SR_{it}/N)^2}} \); and \( t_{CAAR} = \frac{CAAR_{it}}{(\sigma(CAAR_{it})/\sqrt{n})} \), \( t_{BHAR} = \frac{BHAR_{it}}{(\sigma(BHAR_{it})/\sqrt{n})} \). The sample sizes (N) for the target firms for each alternative are presented in the parentheses, 36 months and 25 months were selected for the estimation-period and event-window consecutively. The test statistics are provided in the parentheses below the abnormal return values.

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Market Model (-12,+12)</th>
<th>Market-Adjusted Model (-12,+12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAARs</td>
<td>ABHARs</td>
<td>ATSRs</td>
</tr>
</tbody>
</table>

340
<table>
<thead>
<tr>
<th>All target firms (52)</th>
<th>0.407</th>
<th>1.466</th>
<th>10.558</th>
<th>0.203</th>
<th>0.470</th>
<th>0.382</th>
<th>7.316</th>
<th>0.141</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2.14)*</td>
<td>(1.43)</td>
<td>(1.42)</td>
<td>(0.64)</td>
<td></td>
<td>(3.69)**</td>
<td>(1.94)</td>
<td>(0.98)</td>
<td>(0.36)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Targets included only</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 2.1 (2)</td>
<td>0.887</td>
<td>1.071</td>
<td>0.527</td>
<td>0.264</td>
<td>0.625</td>
<td>0.750</td>
<td>0.191</td>
<td>0.096</td>
</tr>
<tr>
<td>(3.36)</td>
<td>(1.94)</td>
<td>(0.91)</td>
<td>(0.36)</td>
<td>(0.59)</td>
<td>(0.89)</td>
<td>(0.64)</td>
<td>(0.13)</td>
<td>(0.98)</td>
</tr>
<tr>
<td>2. 2.2 (2)</td>
<td>0.157</td>
<td>0.075</td>
<td>0.069</td>
<td>0.025</td>
<td>0.584</td>
<td>0.375</td>
<td>0.164</td>
<td>0.052</td>
</tr>
<tr>
<td>(0.25)</td>
<td>(0.14)</td>
<td>(0.05)</td>
<td>(0.06)</td>
<td>(0.66)</td>
<td>(2.03)</td>
<td>(2.60)</td>
<td>(0.07)</td>
<td>(22.24)*</td>
</tr>
<tr>
<td>3. 2.3.1 (6)</td>
<td>0.966</td>
<td>8.642</td>
<td>2.372</td>
<td>0.395</td>
<td>1.275</td>
<td>2.035</td>
<td>2.305</td>
<td>0.584</td>
</tr>
<tr>
<td>(0.82)</td>
<td>(0.91)</td>
<td>(0.94)</td>
<td>(0.48)</td>
<td></td>
<td>(1.72)</td>
<td>(1.44)</td>
<td>(0.91)</td>
<td>(0.52)</td>
</tr>
<tr>
<td>4. 2.3.2 (6)</td>
<td>0.830</td>
<td>0.927</td>
<td>1.597</td>
<td>0.330</td>
<td>0.423</td>
<td>0.110</td>
<td>0.717</td>
<td>0.119</td>
</tr>
<tr>
<td>(2.69)*</td>
<td>(1.54)</td>
<td>(0.78)</td>
<td>(0.23)</td>
<td></td>
<td>(1.43)</td>
<td>(0.38)</td>
<td>(0.28)</td>
<td>(0.13)</td>
</tr>
<tr>
<td>5. 2.3.3 (12)</td>
<td>0.898</td>
<td>4.784</td>
<td>4.351</td>
<td>0.363</td>
<td>0.849</td>
<td>1.072</td>
<td>3.021</td>
<td>0.252</td>
</tr>
<tr>
<td>(1.62)</td>
<td>(1.06)</td>
<td>(1.22)</td>
<td>(0.56)</td>
<td></td>
<td>(2.19)</td>
<td>(1.48)</td>
<td>(0.85)</td>
<td>(0.36)</td>
</tr>
<tr>
<td>6. 2.4 (8)</td>
<td>0.114</td>
<td>0.258</td>
<td>0.651</td>
<td>0.081</td>
<td>-0.192</td>
<td>-0.255</td>
<td>0.331</td>
<td>0.041</td>
</tr>
<tr>
<td>(-0.26)</td>
<td>(0.36)</td>
<td>(0.22)</td>
<td>(0.15)</td>
<td></td>
<td>(-0.95)</td>
<td>(-1.91)</td>
<td>(0.11)</td>
<td>(-0.30)</td>
</tr>
<tr>
<td>7. 2.5 (15)</td>
<td>0.128</td>
<td>0.129</td>
<td>1.819</td>
<td>0.121</td>
<td>0.078</td>
<td>-0.139</td>
<td>0.185</td>
<td>0.012</td>
</tr>
<tr>
<td>(0.56)</td>
<td>(0.56)</td>
<td>(0.46)</td>
<td>(0.17)</td>
<td></td>
<td>(0.46)</td>
<td>(-0.99)</td>
<td>(0.05)</td>
<td>(0.16)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All targets but excluded</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8. 2.1 (50)</td>
<td>0.388</td>
<td>1.482</td>
<td>10.031</td>
<td>0.201</td>
<td>0.464</td>
<td>0.367</td>
<td>7.123</td>
<td>0.142</td>
</tr>
<tr>
<td>(1.96)</td>
<td>(1.39)</td>
<td>(1.38)</td>
<td>(0.59)</td>
<td></td>
<td>(3.52)**</td>
<td>(1.80)</td>
<td>(0.98)</td>
<td>(0.34)</td>
</tr>
<tr>
<td>9. 2.2 (50)</td>
<td>0.417</td>
<td>1.521</td>
<td>10.489</td>
<td>0.210</td>
<td>0.466</td>
<td>0.382</td>
<td>7.212</td>
<td>0.144</td>
</tr>
<tr>
<td>(2.11)*</td>
<td>(1.42)</td>
<td>(1.44)</td>
<td>(0.64)</td>
<td></td>
<td>(3.52)**</td>
<td>(1.86)</td>
<td>(0.99)</td>
<td>(0.34)</td>
</tr>
<tr>
<td>10. 2.3.1 (46)</td>
<td>0.335</td>
<td>0.530</td>
<td>8.185</td>
<td>0.178</td>
<td>0.366</td>
<td>0.167</td>
<td>5.011</td>
<td>0.109</td>
</tr>
<tr>
<td>(1.98)</td>
<td>(2.17)**</td>
<td>(1.17)</td>
<td>(0.49)</td>
<td></td>
<td>(3.35)**</td>
<td>(1.13)</td>
<td>(0.72)</td>
<td>(0.19)</td>
</tr>
<tr>
<td>11. 2.3.2 (46)</td>
<td>0.352</td>
<td>1.536</td>
<td>8.599</td>
<td>0.186</td>
<td>0.477</td>
<td>0.598</td>
<td>6.999</td>
<td>0.143</td>
</tr>
<tr>
<td>(1.66)</td>
<td>(1.32)</td>
<td>(1.23)</td>
<td>(0.59)</td>
<td></td>
<td>(3.39)**</td>
<td>(1.89)</td>
<td>(0.94)</td>
<td>(0.39)</td>
</tr>
<tr>
<td>12. 2.3.3 (40)</td>
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<td>0.470</td>
<td>6.206</td>
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<td>0.357</td>
<td>0.175</td>
<td>4.295</td>
<td>0.107</td>
</tr>
<tr>
<td>(1.38)</td>
<td>(1.75)</td>
<td>(0.95)</td>
<td>(0.45)</td>
<td></td>
<td>(2.98)**</td>
<td>(1.23)</td>
<td>(0.66)</td>
<td>(0.24)</td>
</tr>
<tr>
<td>13. 2.4 (44)</td>
<td>0.502</td>
<td>0.530</td>
<td>9.907</td>
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<td>0.591</td>
<td>0.498</td>
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<tr>
<td>(2.38)*</td>
<td>(2.09)*</td>
<td>(1.45)</td>
<td>(0.65)</td>
<td></td>
<td>(4.23)**</td>
<td>(2.18)*</td>
<td>(1.02)</td>
<td>(0.38)</td>
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<td>14. 2.5 (37)</td>
<td>0.521</td>
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<td>8.739</td>
<td>0.236</td>
<td>0.630</td>
<td>0.594</td>
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<td>0.193</td>
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<tr>
<td>(2.06)*</td>
<td>(1.39)</td>
<td>(1.39)</td>
<td>(0.56)</td>
<td></td>
<td>(3.92)**</td>
<td>(2.23)*</td>
<td>(1.14)</td>
<td>(0.39)</td>
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</table>

<table>
<thead>
<tr>
<th>All targets but excluded</th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<tr>
<td>15. 2.1, 2.2, 2.3.1 (42)</td>
<td>0.317</td>
<td>0.526</td>
<td>7.589</td>
<td>0.181</td>
<td>0.343</td>
<td>0.129</td>
<td>4.74 (1.12)112</td>
<td></td>
</tr>
<tr>
<td>(1.72)</td>
<td>(1.98)</td>
<td>(1.14)</td>
<td>(0.45)</td>
<td></td>
<td>(2.92)**</td>
<td>(0.96)</td>
<td>(0.71)</td>
<td>(0.71)</td>
</tr>
<tr>
<td>16. 2.1, 2.2, 2.3.1, 2.4 (35)</td>
<td>0.422</td>
<td>0.600</td>
<td>7.458</td>
<td>0.213</td>
<td>0.451</td>
<td>0.203</td>
<td>4.639</td>
<td>0.133</td>
</tr>
<tr>
<td>(2.13)*</td>
<td>(1.96)</td>
<td>(1.22)</td>
<td>(0.47)</td>
<td></td>
<td>(3.54)**</td>
<td>(1.29)</td>
<td>(0.76)</td>
<td>(0.18)</td>
</tr>
<tr>
<td>17. 2.1, 2.2, 2.3.1, 2.5 (28)</td>
<td>0.411</td>
<td>0.715</td>
<td>5.336</td>
<td>0.208</td>
<td>0.477</td>
<td>0.263</td>
<td>4.560</td>
<td>0.163</td>
</tr>
<tr>
<td>(1.64)</td>
<td>(1.88)</td>
<td>(1.07)</td>
<td>(0.33)</td>
<td></td>
<td>(3.20)**</td>
<td>(1.42)</td>
<td>(0.84)</td>
<td>(0.15)</td>
</tr>
<tr>
<td>18. 2.1, 2.2, 2.3.1, 2.4, 2.5 (25)</td>
<td>0.474</td>
<td>0.746</td>
<td>5.473</td>
<td>0.219</td>
<td>0.536</td>
<td>0.311</td>
<td>4.206</td>
<td>0.168</td>
</tr>
<tr>
<td>(1.79)</td>
<td>(1.81)</td>
<td>(1.06)</td>
<td>(0.35)</td>
<td></td>
<td>(3.34)**</td>
<td>(1.51)</td>
<td>(0.82)</td>
<td>(0.16)</td>
</tr>
<tr>
<td>19. 2.1, 2.2, 2.3.2 (42)</td>
<td>0.336</td>
<td>1.628</td>
<td>7.983</td>
<td>0.190</td>
<td>0.464</td>
<td>0.404</td>
<td>6.305</td>
<td>0.150</td>
</tr>
</tbody>
</table>
### Note:
- 2.1: = the unsuccessful target firms (2 firms)
- 2.2: = the competitive target firms (the target firms come from competitive tender offers) (2 firms)
- 2.3.1: = the prior selected target firms (the prior selected repeated target firms) (6 firms)
- 2.3.2: = the later selected target firms (the later selected repeated target firms) (6 firms)
- 2.3.3: = the total repeated target firms (12 firms)
- 2.4: = the later “REHABCO” target firms (8 firms)
- 2.5: = the later delisted target firms (15 firms)
- All targets but excluded 2.1: = the successful target firms (50 firms)

*significant at 5% level
**significant at 1% level
*significant at 10% level
#significant at 20% level

When excluded Q: UOXT which has the remarkably substantial stock price returns in the sample, the ABHARs are positive at 44.70% (t=1.94).
APPENDIX C

Table C1

Results of the Analyses of Characteristic Bidding Firms (Bid and Pre-bid Periods)

This table demonstrates abnormal returns to bidding firms for tender offer occurring from 1992-2002. The expected returns for the bidding firm's shareholders for the bid period (-12,+12) and pre-bid period (-12,-1) were measured from the market and market-adjusted (zero-one) models respectively. The monthly abnormal returns for the bidding firm's shareholders from 12 months before the event month until 12 months after the event month, and from 12 months before the event month until the event month before the event month were estimated then, cross-sectionally averaged in each month by the number of the firms to be AARs, respectively. The AARs are cumulated from the first month until the last month of the investigation periods to be the cumulative average abnormal returns (CAARs) for the bidding firm's shareholders, or using the cumulative abnormal return (CAR) method. For further comparison, the buy-and-hold abnormal return (BHAR) method was applied by continuously compounded the abnormal returns from the first month until the last month of the investigation periods then, averaged to be the average buy-and-hold abnormal returns (ABHARs) for the bidding firm's shareholders. Also, total or the sum of standardised abnormal returns (residuals) (TSRs), and average event-period standardised abnormal returns (residuals) (ASRs) for the bidding firm's shareholders were calculated. Then, the means of the TSRs (ATSRs) and ASRs (AASRs) were estimated and are shown in the table. To study as many characteristic bidding firms as taking place on the Stock exchange of Thailand (SET), the bidding firms were comprehensively classified by the bidding firm itself and/or the tender offer characteristics as well as these combinations into the subsets of the bidding firms. There are a total of 80 alternatives, including all bidding firms investigational alternative, for the bidding firm investigations for the bid period (-12,+12) and pre-bid period (-12,-1). Three parametric statistic tests: standardised-residual, standardised cross-sectional, and conventional t-tests, were applied to test the significance of the average abnormal returns for the bidding firm's shareholders. The t-statistics were calculated by using the first two tests with the ATSRs and the AASRs respectively, meanwhile, the last test was applied with the CAARs and ABHARs. The t-statistics are the sum of the standardised residuals divided by (approximately) the square root of the number of sample firms, and the average event-period standardised residual divided by its contemporaneous cross-sectional standard error respectively. The standardised residual equals the event-period residual divided by the standard deviation of the estimation-period residuals, adjusted to reflect the forecast error. The conventional t-test statistic is the average abnormal return divided by its cross-sectional standard error. All three parametric significance test formulas are shown as follows:

\[
\begin{align*}
\hat{t} &= \frac{\sum_{i=1}^{N} \left( \frac{SR_{it}}{\sqrt{N}} \right)}{\sqrt{1/N(N-1)}} \sum_{i=1}^{N} \left( \frac{SR_{it}}{\sqrt{N}} \right)^2; \quad t_{CAAR} = \frac{CAAR_{it}}{\sqrt{\frac{\sum_{i=1}^{N} (\sigma(\hat{CAR}_{it}))^2}{N}}}, \quad t_{BHAR} = \frac{BHAR_{it}}{\sqrt{\frac{\sum_{i=1}^{N} (\sigma(BHAR_{it}))^2}{N}}}
\end{align*}
\]

The sample sizes (N) for the bidding firms for each alternative are presented in the parentheses, 36 and 25 months, and 24 and 12 months were selected for the estimation-period and event-window for the bid period (-12,+12) and pre-bid period (-12,-1) investigations consecutively. The test statistics are provided in the parentheses below the abnormal return values.

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Bidding Firms (Bid Period)</th>
<th>Bidding Firms (Pre-Bid Period)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Market Model (-12,+12)</td>
<td>Market-Adjusted Model (-12,+12)</td>
</tr>
<tr>
<td></td>
<td>CAARs</td>
<td>ABHARs</td>
</tr>
<tr>
<td>All bidding firms (42)</td>
<td>-0.288</td>
<td>-0.032</td>
</tr>
<tr>
<td>Bidders included only</td>
<td>(-1.66)</td>
<td>(-0.22)</td>
</tr>
</tbody>
</table>
l.

2.1 (4)

2.

2.2 (12)

3.

2.2.1 (16)

4.

2.3 (26)

5.

2.4 (2)

6.

2.5 (3)

7.

2.6 (7)

8.

2.7 (2)

9.

2.8 (1)3

10.

2.9 (5)

11.

2.10(6)

12.

2.11(11)

0.791
(2.15)
-0.048
(-0.10)
0.161
(0.44)
-0.565
(-3.70)**
1.719
(3.02)
-0.906
(-2.62) 2
-0.395
(-0.62)
-2.639
(-5.29)
-0.151
(NA)
0.089
(0.14)
0.071
(0.12)
0.079
(0.20)

0.995
(1.44)
0.342
(0.85)
0.505
(1.51)
-0.363
(-3.89)**
1.658
(17.18)*
-0.612
(-5.55) 1
0.047
(0.11)
-0.955
(-61.41)*
NA
(NA)
0.077
(0.17)
0.500
(0.70)
0.308
(0.75)

-0.402
(-2.24)*
-0.384
(-2.36)*
0.161
(0.44)
-0.388
(-2.34)*
-0.240
(-1.31)
-0.267
(-1.51)
-0.170
(-1.07)
-0.291
(-1.64)
-0.339
(-1.86)
-0.348
(-1.90)

-0.141
(-0.96)
-0.182
(-1.31)
0.505
(1.51)
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(-0.45)
0.012
(0.08)
-0.048
(-0.30)
0.014
(0.09)
-0.028
(-0.18)
-0.047
(-0.29)
-0.121
(-0.88)

3.015
(1.46)
9.428
(2.64)*
12.443
(3.02)**
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(-0.99)
3.787
(2.60)
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(-0.59)
0.281
(0.10)
-0.876
(-0.60)
-0.056
(-0.05)
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(1.02)
5.584
(2.21)
7.929
(2.32)*

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(0.00)
0.786
(0.01)
0.778
(0.02)
-0.201
(-1.00)
1.894
(0.02)
-0.354
(-1.07)
0.040
(-0.69)
-0.438
(-3. 78)
-0.056
(NA)
0.469
(-0.35)
0.931
(-0.29)
0.721
(-0.15)

0.550
(1.38)
0.494
(2.18)
0.508
(2.75)*
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(-0.13)
1.180
(2.85)
0.273
(0.62)
0.435
(1.36)
-1.231
(-5.39)
0.166
(NA)
0.425
(1.13)
0.691
(3.23)*
0.570
(3.00)*

0.513
(0.80)
0.306
(1.54)
0.358
(l.83)
0.032
(0.25)
0.227
(0.29)
0.299
(0.56)
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(1.57)
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(-8.49)
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(NA)
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(0.20)
0.730
(2.43)
0.421
(1.98)

1.150
(0.56)
8.026
(2.25)
9.176
(2.23)*
0.246
(0.05)
2.665
(1.83)
0.450
(0.25)
2.000
(0.81)
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(-0.22)
-0.116
(-0.11)
2.316
(1.00)
5.427
(2.15)
7.743
(2.26)*

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(0.04)
0.669
(0.04)
0.573
(0.04)
0.009
(-0.04)
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0.150
(-0.29)
0.314
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(NA)
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(0.36)
0.704
(0.07)

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(4.85)*
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(0.62)
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(1.18)
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(-1.13)
0.440
(0.33)
-0.207
(-0.34)
0.308
(0.69)
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(-1.79)
0.059
<NA)
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(-1.87)
0.532
(1.43)
0.140
(0.57)

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(l.19)
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(0.46)
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(1.08)
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(-3.93)
NA
<NA)
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0.791
(1.46)
0.294
(0.89)

4.214
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(-0.39)
12.443
(3.02)**
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(0.53)
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(1.29)
6.948
(1.14)
8.106
(1.24)
7.285
(1.10)
4.884
(0.78)
1.646
(0.27)

0.111
(-0.39)
-0.073
(-0.85)
0.778
(0.02)
0.086
(-0.67)
0.213
(-0.33)
0.199
(-0.46)
0.203
(-0.34)
0.178
(-0.41)
0.132
(-0.59)
0.046
(-0.40)

0.144
(1.23)
0.059
(0.48)
0.508
(2.66)*
0.133
(1.21)
0.176
(1.50)
0.133
(1.11)
0.254
(2.43)*
0.183
(1.61)
0.150
(1.27)
0.098
(0.82)

0.118
(1.13)
0.096
(0.74)
0.358
(1.83)
0.152
(1.37)
0.145
(1.29)
0.102
(0.86)
0.203
(1.89)
0.162
(1.47)
0.170
(1.43)
0.060
(0.55)

8.272
(1.30)
1.395
(0.25)
9.176
(2.23)*
6.757
(1.04)
8.971
(1.39)
7.222
(l.18)
9.739
(1.49)
33.599
(5.09)**
7.106
(1.13)
3.994
(0.65)

0.218
(0.06)
0.047
(-0.11)
0.573
(0.04)
0.169
(-0.01)
0.230
(0.03)
0.206
(-0.07)
0.243
(0.10)
0.819
(2.09)*
0.192
(-0.01)
0.111
(0.01)

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(-0.10)
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(1.18)
0.020
(0.18)
0.059
(0.52)
-0.013
(-0.13}
0.112
(1.11)
0.040
(0.35)
0.122
(0.74)
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(-0.37)

0.096
(0.70)
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(-0.06)
0.469
(1.61)
0.095
(0.79)
0.146
(1.11)
0.028
(0.28}
0.177
(1.39)
0.134
(1.04)
0.190
(1.36)
0.021
(0.18)

4.953
(l.70)
13.992
(3.85)**
18.944
(4.52)**
-0.059
(-0.01}
0.461
(0.31)
-0.100
(-0.06)
6.582
(2.37)
-0.790

0.051
(0.05)
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(4.74)**
9.888
(2.84)*

1.238
(0.07)
1.166
(0.30)
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(0.28)
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(-0.58)
0.940
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(-1.62)
0.051
(NA)
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(-0.89)
2.030
(0.62)
0.899
(0.11)

0.666
(3.32)*
0.414
(1.85)
0.477
(2.78)*
0 143
(1.78}
0.222
(0.16)
0.283
(0.81)
0.654
(2.84)*
-0.483
(-0.74)
0.452
<NA)
-0.076
(-0.32)
0.797
(4.09)**
0.400
(2.02)

0.608
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(l.98)
0.515
(2.78)*
0.144
(1.61)
0.484
(0.32)
0.290
(0. 71)
0.720
(2.60)*
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(-0.96)
NA
(NA)
-0.079
(-0.40)
1.003
(3.41)*
0.511
(2.08)

3.100
(l.48)
l l.505
(3.17)**
14.605
(3.48)**
6.974
(1.30)
-0.125
(-0.08)
1.554
(0.86)
7.306
(2.63)*
-0.042
(-0.03)
0.109
(0.10)
-1.408
(-0.60)
11.720
(4.56)**
10.312
(2.96)*

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(0.36)
0.959
(0.48)
0.913
(0.45)
0.268
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-0.063
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(-0.14)
1.953
(0.96)
0.937
(0.56)

13.932
(2.16}*
4.893
(0.85)
18.944
(4.52)**
18.424
(2.78)**
18.985
(2.90}**
12.303
(1.98}
19.675
(2.97}**
18.834
(2.80)**
21.176
(3.32)**
6.706
(1.07)

0.367
(0.31)
0.163
(0.05)
1.184
(0.28)
2.632
(1.75)
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(0.40)
0.352
(-0.02)
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(0.42)
0.459
(0.37)
0.572
(0.52)
0.186
(0.13)

0.228
(2.58)*
0.213
(2.67)*
0.477
(2.78)*
0.273
(3.38)**
0.269
(3.05)**
0.193
(2.24)*
0.308
(3.77)**
0.266
(3.10)**
0.317
(3.57)**
0.182
(2.14)*

0.251
(2.57)*
0.206
(2.40)*
0.515
(2.78)*
0.275
(3.15)**
0.285
(2.96)**
0.198
(2.17)*
0.321
(3.50)**
0.283
(3.02)**
0.335
(3.39)**
0.166
(2.02)

10.150
(1.57)
10.074
(1.75)
14.605
(3.48)**
21.704
(3.27)**
20.025
(3.06)**
14.273
(2.30)*
21.621
(3.26)**
21.496
(3.20)**
22.988
(3.60)**
9.859
(1.57)

0.267
(0.49)
0.336
(0.64)
0.913
(0.45)
0.543
(0.84)
0.513
(0.75)
0.408
(0.49)
0.541
(0.82)
0.524
(0.84)
0.621
(0.90)
0.274
(0.46)

c-o.s;n

All bidders but excluded
13. 2.1 (38)
14.

2.2 (30)

15.

2.3 (16)

16.

2.4 (40)

17.

2.5 (39)

18.

2.6 (35)

19.

2.7 (40)

20.

2.8 (41)

21.

2.9 (37)

22.

2.10 (36)

344


### Table: Data Points

<table>
<thead>
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<th>Bidder</th>
<th>Data Points</th>
</tr>
</thead>
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<td>23.11</td>
<td>(31)</td>
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All bidders but excluded

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<tr>
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<td>24.1, 2.9</td>
<td>(33)</td>
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<td>26.1, 2.2, 2.8</td>
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<td>27.1, 2.2, 2.9</td>
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<table>
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### Note

All bidders but excluded.
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<td>0.43</td>
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<td>0.642</td>
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</tr>
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<td>0.43</td>
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<td>0.43</td>
<td>0.32</td>
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<td>0.642</td>
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</tr>
</tbody>
</table>

Note:

1. The alternative 9 is excluded from the comparison because of n=1 and df (degrees of freedom)=0.
2. Significant at 5% level
3. Significant at 1% level
4. Significant at 10% level
5. Significant at 20% level
Figure D1. ABHARs Estimated from the Market and Market-Adjusted (Zero-one) Models Applied to All Target, Successful, Unsuccessful, and Total Repeated Target Firms (Bid Period).
Figure D2. ABHARs Estimated from the Market and Market-Adjusted (Zero-one) Models Applied to the Later in "REHABCO", Later Delisted, Prior Selected, and Later Selected Target Firms (Bid Period).
Average Buy-and-Hold Abnormal Returns Estimated from the Market Model

Average Buy-and-Hold Abnormal Returns Estimated from the Market-Adjusted (Zero-one) Model

Figure D3. ABHARs Estimated from the Market and Market-Adjusted (Zero-one) Models Applied to All Bidding, Successful, Unsuccessful, and Total Repeated Bidding Firms (Bid Period).
Figure D4. ABHARs Estimated from the Market and Market-Adjusted (Zero-one) Models Applied to the Single, Consortium, Prior Selected, and Later Selected Bidding Firms (Bid Period).
Figure D5. ABHARs Estimated from the Market and Market-Adjusted (Zero-one) Models Applied to All Bidding, Successful, Unsuccessful, and Total Repeated Bidding Firms (Pre-bid Period).
Average Buy-and-Hold Abnormal Returns Estimated from the Market Model

Figure D6. ABHARs Estimated from the Market and Market-Adjusted (Zero-one) Models Applied to the Single, Consortium, Prior Selected, and Later Selected Bidding Firms (Pre-bid Period).