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**UNIVERSITY OF NOTTINGHAM**

**Evaluation of the financial performance  
of American bidding companies**

**By**

**Rebecca Korang**

**2012**

**A Dissertation presented in part consideration  
for the degree of MSc Finance and Investments**

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## **Introduction**

In today's globalized economy, companies are now not only competing and keep up with local competitors but foreign competitors too. This continuous international competition in business force companies to improve and change their company's structure in order to survive and thrive. Companies have in many years tried to find ways to compete effectively with corporations worldwide and their desperate search for external and internal growth seek them to the lately merge and acquisition (M&A) activities which now are increasingly used worldwide. Since early 1900s, there have been some abnormal waves of mergers and acquisitions' especially between American industries (Mantravadi and Reddy, 2008a). According to the 2007 research report by Boston consulting group, USA have completed over deals 4,000 between 1992 and 2006 (Mantravadi and Reddy, 2008a). These report figures suggest that merges and acquisitions might occur as a reaction to the period change in economy and industry such as changes in industry structure correlated to periods of restructure, changes in industries technological advances or deregulation (Jensen, 1993; Mitchelle and Mulherin, 1996). Despite Jensen's suggestion, many authors have difficulties explaining the reason why mergers have historically only occurred in industry-specify waves. No matter the reason from occurring waves, the increase in the M&A activity show the drive and need for market share and demand for joining together different components of their value chain to create competitive advantages. Merges and acquisitions have become one of the greatest real methods of corporate restructuring and becoming a crucial part of the longstanding business strategy for corporations in USA.

Economic theory has offered many potential reasons for why mergers might occur; such as economies of scale or other “synergies” that can be established by joining entities together such as reduction of excess costs, and established opportunities for diversification. There have been other theories suggesting the possibility of market power by forming an alliance to compete with bigger competitors (Achampong and Zemedkun, 1995). Furthermore, the importance of a faster growth and new investment opportunities to move into a newer market or acquisition of new technology and competence without building it from scratch are all reasons for M&A activities.

One of the most important reason for M&A activity is the theory of created value which does not only happens for managers but also for the shareholders. Most research on the financial performance of mergers and acquisition has focused on stock returns reaction close to specific public announcement dates to investigate the stock performance of M&A companies. In theory, M&A activities help business maximize shareholders wealth. Due to this view many shareholders would not be opposed by the idea of mergers or acquisition activities in the firms. However, many studies have been studying whether this positive abnormal return might be a short-term gain due to the extremely overexcitements of the announcement which declines after the announcement of the M&A activity, or a positive share return performance that holds on in the long term. The empirical studies are numerous and the results have been mixed. Some studies suggest no significant abnormal return while others suggest a more negative abnormal return, which makes the whole shareholders maximizing value left unanswered. The central question is whether shareholders are better off without M&A activities.

All these potentials methods for bettering firms' financial performances are often the reasons given by practitioners to justify M&A activities. Despite all the positive outcome from deal activities, majority of studies have established that these potential efficiency gains and value creation resulting from M&A rarely materialize after the deals. Consequently, many studies might not support the theory of merges and acquisition, which make one to believe that these theories might not work in reality (Hariharan, 2005; Mallikarjunappa and Nayak, 2007; Tambi, 2005). Nevertheless, no matter how M&A companies are responding to deals, one can argue that these activities signify a new creative strategy to increase performances but could likewise according to Ransariya (2010) be seen as damaging the economy. Regardless of what one thinks of M&A activities, M&A activities do represent a major trend in the global economy. Arguably, this is an area of potential good as well as potential harm in global economy. Therefore, an analysis has to be made regarding the financial performance of merger or acquiring firms to gain some insights into the performances of acquiring firms (ibid).

This research study is aimed at studying the impact of mergers and acquisitions' financial performance in different American industries over the period of 1998 to 2011. By examining the short-term stock performances and the long term accounting performance of public listed and traded companies in US, one can examine the financial performance changes associated with the merge activities in both long and short term. Also, one can argue that post-merged performances might be different depending on the size of the bidder and method of payment. This clearly shows the importance of understanding what factors that determine a positive post acquisition performance. All this might lead to a better understanding of performances of merges and acquiring firms.

The particular questions that are going to be answered by the study are:

- Does the accounting performance of companies improve after mergers and acquisitions activities?
- Does the performance of companies' shareholders stock value improve in short-term after mergers and acquisitions activities?
- Do factors such as firms' size and the type of payment to the target influence the stock performance of the bidder?
- Does acquiring firms, in conclusion perform better after deal activities?

The next section will feature the discussion of relevant literature review as well as some discussion of the conceptual issues on pervious empirical investigations and theories about the topic, likewise the merger and acquisition activities in America throughout those years. Section three deals with the description of data collection, data set used and other methodology such as the description of different used test and definition of variables. In section four the presentation of the result and findings will be outlined. Finally, section five offers some conclusion while section six shows some limitations and recommendation for further work on the subject.



## **2 Literature review**

### **2.1 The motives and reason for why firms involve in M&A activities.**

In the academic literatures there have been many theories and debates about the motives and reasons for why firms involve in M&A activities. All authors concur that M&A is driven by many complex reasons, which can vary with different deal and cannot be fully justified by any single theory or approach. An understanding of the true motives why companies merge and acquirers must be taken a closer look at in order to understand the mind of managers. Despite the many conflicting theories, there are a few main drives for M&A activities. The following section provides the understanding of different reasons and theories behind M&A activities.

#### **2.1.1. Growth, expansion and increase in market share**

The view that two is bigger than one does apply when one considers deals. By combining two companies together one creates a bigger company, which in that case, increases the company's market share. Likewise, an increase in market share, gives the opportunity to control price settings in a monopolistic way. Similarly, an increase in market share also leads to a decline in competitors in the market. However, this tactic is rather criticised for its demolition of customer welfare. Based on the theory of economic competition, fewer players in the market reduce the competitive forces and increase opportunity to control prices. Horizontal merger is an example of a way to reduce possible market competitions (Eckbo,1983). It is also showed through the theory of collusion that the collusive of companies might lead to higher prices for the customers and average gain for the acquiring firms. The theory state that it is not only

acquirer firms that benefits from the acquisition and the reduction of number of players in the market, all competitors would expect to gain from it. In the theory of collusion, both the acquirer and competitors will benefit from the acquisition (ibid). The first discovery of collusive theory was tested by Eckbo (1983) who found that even competitors earn significant abnormal return around the announcement date. However, the test was rejected due to insignificant negative abnormal results.

The main objective of companies is to expand and broaden their product lines or move into an existing market. According to literatures, it gives the possibility to grow and expend easier, which would likely not be achieved if they did not go through M&A strategy (Eckbo, 1983; Brealey and Myers, 2004). For example, by acquiring a small company, which specializes in products in a market the bidder company wants to expand into, gives the bidder company the opportunity of using tool, skills and other competitive advantage obtained from the target company. This consequently limits the acquired company's need to construct the product line from scratch. In other words, M&A activities enable a company to acquire a growing business without building up a new one (Gaughan, 2002). Therefore, growth is created when merged companies can capture the opportunity available in the market more quickly than they would have done if they were not merged (ibid). This so called strategic theory can increase value and therefore overlaps to the extent with the efficiency theory (ibid).

### **2.1.2. Economies of scale**

The theory of economies of scale state that larger companies have the advantage of increase in efficiency of production as the number of goods produced increases (The economist, 2008). Typically, a company that achieves economies of scale lowers the

average cost per unit by increased production since fixed costs can be minimized by increased number of goods. This minimization of cost can be obtained due to companies being merged. By merging the two companies into one, the merged company would now be able to share technology, administration costs, management cost and even employees. Price reductions are made possible as a result of the cost reductions, which increases market-share and market-power. Economies of scale enable companies to offer more products and services. Because low costs is important for company's profitability, success and survival, achieving these economies of scale is a natural motivation for merge activities (ibid).

### **2.1.3 Improved management**

A common reason for companies' failure is weak management. Therefore, by merging with larger companies with possibly higher level of management experience, gives target companies the chance to create better management. It is often seen that it takes a greater degree of managerial skill in order to control a larger organization than a small business. It is no denial to state that, a company with weak managerial skills acquired by a company with stronger managerial skills can possibly improve efficiency. For instance, once the two companies combine, the inefficient management can be replaced with an enhanced one, which again improves efficiency. Hence, M&A activities are a simple way to eliminate inefficiency since shareholders do not have direct access and power to control managers as well as managers never would demote themselves (Brealey and Myers, 2004).

#### **2.1.4 Diversification**

Diversification is said to be one of the major reason for M&A activities. When companies decide to use their excess cash to grow by re-investing it rather than distributing it to their shareholders, they can invest in business opportunities they think would best benefits the firm. By investing in business opportunities without putting themselves in much earning volatility is called diversification, in other words not using their own money. This can be achieved, for instance, by expanding into different types of industries and markets to diversity their risk while at the same time getting the opportunity to achieve steadily profits. Nevertheless, there are some negative arguments directed against diversification. For example, Brealey and Myers (2004), argue that investors do not pay excess premium for diversified firms because they can diversify their risks more efficient and cheaper by putting their shares into portfolios.

#### **2.1.5. Synergy and Efficiency theories**

According to the theory, synergy is created when the combined value of two companies involved in M&A activity is more than the value of two separate firms. In other words, synergy is a situation where  $1+1$  becomes 3 instead of 2 (Sudarsanamet, 1996). Synergy enhances cost efficiencies and takes the form of economies of scale in operating synergy and cost reduction in finance synergy (Gaughan, 2002). Also an larger M&A firm may have improved access to capital market, which later leads to a decrease cost of capital which is again a financial synergy. Likewise, there are other synergies such as revenue sharing synergy, which is created when the combined

companies generate combined revenue. So an increase in revenue after merge or acquisition will possibly be the outcome of synergy (Gaughan, 2002).

Furthermore, when a company with better financial position but with less profitable investment opportunities merge or acquires by a company with higher growth opportunity but less well financial position or insufficient access to capital, financial synergy is created. This is often the result when larger firms merge with or acquires smaller firms. There are other synergies such as tax, depreciation and diversification benefits. Despite the advantages of synergy, there have been many researchers criticizing the idea of synergies over the years. Trautwein (1990) stated that, financial synergy cannot be accomplished in an efficient capital market as if it was possible, every company would be performing M&A activities. While Rumlet (1982) claims that there is no evidence that synergy lowers systematic risk and Kitching (1967) suggests that operating and managerial synergies just seem to be an imprecise reason for M&A activity.

#### **2.1.6. Value creation**

If M&A acquisition increases value, this value would be reflected in firms' respective stock prices. In general, a positive abnormal return associated with M&A news leads to an increased value. Many managers and business owners do believe that stock prices of companies that have been involved in mergers or acquisition activities do actually generate positive abnormal return over a specific period (Chan et al., 1997). Therefore, a negative abnormal return often indicates many different reasons of what went wrong. Reasons such as unsuccessful deals of a more or less underperformed target firm could consequently lead to no opportunities for improvements and value

creation. Likewise, if the market does not consider the deal to be as good of a strategy as the managers think, could also be the reason why acquiring firms generates low stock prices (Ederington & Guan, 2005)

In order to understand the way the value could be created, one needs to understand the behaviour in the market, i.e. the question whether the market is efficient or not. The early discussion of market efficiency came from Fama (1970). The author argues that markets are efficient and that the market is the place to go if one wants to estimate prices. However, if the market is inefficient, there will be a misprice in the market price. This mispricing can result to some shareholder being able to make higher returns than others due to the capacity to estimate how the market moves and which stocks and firms are over and undervalued. Fama (1970) also states that if the market is efficient, a public announcement of firms M&A activity will react in the market and shown in form of changes in the stock prices. So, if one connects the value creation to market efficiency theory, a public announcement of deals will be showed in stock prices can measure the positive or negative value that is created after an activity such as M&A.

### **2.1.7. Hubris hypothesis**

The role managers play in M&A decision is very important. In many cases the reason for acquired M&A strategy is for the managers' own personal reason rather than the economic gain of the company and the maximization of shareholders wealth. This problem of inefficiency is also often called agency problem. Stigler (1950) discusses the many reasons for M&A activities and argues that it is often to increase their dominant position in the market and to reduce the many competitors in the market. However, one should not forget that the higher level of power and high remuneration

are also the main motives to M&A activities. Hubris hypothesis was first proposed by Roll (1986) stating that managers over-optimistically evaluate mergers higher than the actually true economic value. By being over-optimistic, managers will pay excessively for the target company, which consequently reduces their gain at the expense of their shareholders wealth (Seth, 1990). The likelihood of excess payment to managers when managing a larger company also creates incentive to push for merge even though it might not be the best strategy for the company. Nevertheless, this overpayment to target companies will according to Morck et al, (1990) lead to them receiving lower stock prices.

## **2.2 Why some M&A activities do not “succeed”**

As seen through out the above discussion it can be clearly stated that a “successful” merge is when the managerial strategy increases efficiency, profitability and share prices, which then ultimately maximise shareholder’s wealth. If neither of these changes occurs, one could argue whether the merge activity actually “succeeded”. Having mentioned this, there are many theories suggesting why some M&A activities do not “succeed”.

Firstly, Mead (1969) suggests that capital market imperfection is a reason why there are failure to estimate the value of the target correctly which consequently leads to either over or under estimation of the fair value of the target firm. Likewise, bidders tend to overestimate the value of the target in a competitive bidding situation (Mallikarjunappa and Nayak, 2007). Likewise, the assumption that M&A activities creates efficiency and profitability to firms, which do not always seem to be precise have led to the issue regarding asymmetric information between the acquiring and

target firms (Hviid and Prendergast, 1993). Since target firms have an incentive to hide any characteristics that may lower the estimation of its value to attract possible more bids, can consequently make bidding firms invest in an inadequate expensive M&A strategy. This outcome leads to a decrease in acquiring firms profits and share prices.

Another factor that prevents the merged firm from fully exploiting theoretical efficiency gains may be the failure to successfully integrate the target firm into the acquiring business due to partially incompatibility of acquiring and target firms (Mallikarjunappa and Nayak, 2007). Because the two firms can differ in size, organizational form, strategies, cultures and management policy, it is natural that the degree of differences would mostly be difficult to integrate into a single organization. Moreover, the issue regarding sizes should be carefully considered due to the fact that neither too big target nor too small target is desirable as a partner in order to be a successful merge. For instance, when a target is too small, the acquiring firm might not be able to give enough time and attention that is necessary to successfully establish it. Similarly, when an acquired firm is very large compared to the target firm the gain might go to the acquiring firm because of the attention it had received. Nevertheless, being acquired by a smaller firm for the reason of gaining more control have been experimentally showed that it only results to liquidation for the acquiring firm (Hariharan 2005).

Lastly, an alternative reason for failure of mergers or acquisitions are according to Achampong and Zemedkun (1995) due to a principal-agent relationship conflict between shareholders and managers. Often firms complete deals only to gain control of a large corporation since it effectively means higher 'promotion' such as higher



salaries, discretionary payouts resulted from a reduction in competitors and market power. As a result, mergers motives and incentives will likely go before the interest of their shareholders. Consequently, lower ownership from shareholders lead to less ability to control management while management retains more earnings for unrestricted spending at the expense of a fall in dividends.

### **2.3 Previous discussion and test completed on M&A activities.**

There have been numerous theories about mergers and acquisitions and several empirical studies testing these theories. Researchers have studied the several economic impacts of mergers and acquisitions in different industries, testing the changes in returns to shareholders after M&A activities and the post-merger accounting performance of companies. Previous literatures have mixed view on the market's ability to predict the successfulness of merger and acquisition. However, one needs to consider that the different findings might be the result of changing environment such as change in deregulation and technology but also different countries the study were completed, different data set, and cross board merges. These factors make it impossible to assess the potential performance of merged companies. Whether performance of merged companies improve is a question, which has been examined by many researchers. In this section an attempt has been made to briefly review the work and methodology previously undertaken.

An empirical study by Azhagaiah and Kumar (2011) observed that merging firms with fine reputation and good managerial skills gained financial benefits and value-added performance in short term. Vanitha and Selvam (2007) also agree with previous

researchers that the financial performance of merged companies improves. Nevertheless, Mitchell and Lehn (1990) provided evidence that managers who make poor deals increase the likelihood of, becoming targets themselves. Tambi (2005) wanted to explore whether the main reason for M&A such as synergy and economies of scale really materialized after M&A. The study showed that merger and acquisition activities neither provide economies of scale nor synergy.

Yeh and Hoshino (2002) observed the results of mergers on the firms' operating performance using a sample of 86 Japanese mergers happening between 1970 and 1994. The performance of deals was tested based on their effects on firms' efficiency, profitability, and growth. The study used total productivity as an indicator of the firm's efficiency, return on assets and return on equity as indicators of the firm's profitability, and sales and growth in employment to indicate the firm's growth rate. The results revealed insignificant negative change in productivity and significant negativity in profitability, sales growth rate, and reduction in the workforce after mergers. In general, the results determined that mergers have a negative effect on firm performance in Japan.

Weston and Mansingka (1971) researched the pre and post-merger performance of conglomerate firms and concluded that their earnings rates significantly improved before 10 years, but after 10th year, the improvements between post and pre merge were not significant. The increase in earnings performance of the conglomerate firms was justified as evidence for achieved diversification. Most merger and acquisition (M&A) studies have examined only short-term performance after M&A activities in firms, leaving the question relating to long-term operating performance unanswered.

There has been much discussion whether the performance will be improved in long term. According to Andrade et al (2001) “mergers improve efficiency and that the gains to shareholders at merger announcement accurately reflect improved expectations of future cash flow performance” (ibid: 117). This is also agreed by Kruse et al (2007) used a sample of Japanese companies 56 the long-term operating performance of using mergers of manufacturing firms in the period 1969 to 1997 and found evidence of improvements in operating performance with highly correlated pre- and post merger performance. Furthermore, Ikeda and Doi (1983) examined the financial performances of 43 merging manufacturing firms in Japanese and found that the firms’ rate of return on equity increased in most cases, while not in all cases when it came to the rate of return on total assets. However, both profit rates showed improvement in more than half of the cases between five years time, which show that improvement might happen after a longer period.

Recent, studies appeared to have two ways to measure the performance of merged firms, which is by using stock market event study approach or by using accounting measures. Using stock market to evaluate financial performances is due to the assumption that stock market is efficient and the change in stock market can control the performance and the value of the economic impact after merged. The use of event study for measuring the stock performance of acquiring companies has resulted to overall different results. For example, Ravenscraft and Long (2000) studied 65 pharmaceutical mergers between 1985 and 1996 and found that abnormal stock returns around the announcement date was of 13.3% for the target firm and -2.1% for the bidding firm, but found no significant difference when the companies were combined. The early studies by Franks and Harris (1989) and Asquith et al (1983) revealed findings of a significant positive stock performance for acquirers. However

for the later studies, many ended up finding significant negative returns meaning no experience of shareholders value created. For instance, Sudarsanam and Magate's (2003) short term event study of 519 UK acquirers between 1983 and 1995 reported significantly negative abnormal returns of 1.4% over a 2 (-1 to+1) days period. The result even showed that some bidder firms experienced wealth losses over the chosen event window.

Nevertheless, with several recent long-term event studies assessing negative abnormal returns over the five years following the completion of the merge makes one cast doubt over the result that the traditional short-window event study have found. For instance, long-run studies such as Limmack's (1991) study of UK firms between 1977 and 1986 reported significant negative returns for his sample of 448 firms. Likewise so was the outcome of Gregory's (1997), study of takeovers between 1984 and 1992 and so did Alexandridis *et al.* (2006) study with their use of the three-factor model and the traditional capital asset pricing model (CAPM) methodology which both resulted in a negative abnormal return of around -1%. Gregory and McCorriston (2005) also found a higher loss of -9,36% and -27% in third and fifth year following the activity.

Loughran and Vijh (1997) also calculated long-term abnormal returns for acquiring firms using different payment methods such as stock and cash financing over the period 1970-1989. They found that acquiring firms using stock financing have abnormal returns of -24.2% over the five-year period after the deals, whereas the abnormal return was 18.5% for cash mergers.

Furthermore, Franks et al (1991) study covered 399 US takeovers between 1975-1985 and found a small insignificant negative return to shareholders of the acquiring firms of -1.02%. Supporting findings came from Boone & Mulherin's (2008) study sample of 138 US acquirers over a nine years period. The finding came to be negative return of -0.37% and -0.92%. Also, Anand and Singh (2008) found that merger announcement in the Indian banking industry have positive significant performance in both target and acquired shareholders. Soongswang's (2009) observation of Thai takeovers summarized that M&A create values of the successful bidding firm's shareholders.

Likewise, Meeks (1977) used a sample of 233 acquiring UK quoted companies over 1964 to 1972. His research carefully studied the rate of return and discovered that all the seven years except for the first year after the merger had a declined profitability, which suggest that acquisition has a negative effect on profitability in short run but probably not in the long run. While Becker et al (2008) found negative stock price performance for acquired firms which did perform not as good as firms that did not engage in M&A activity. Supporting that result was Asquith et al (1983) who suggested that regardless the chosen event window, there is very little that support the view that merger and acquisition do create positive return to shareholders. He confirmed a 10 percent loss of the acquiring firms over the five years after acquisition completion. This suggests that in recent years, mergers and acquisitions have become less valuable adding to shareholders, which makes the market efficiency theory very inconsistent. Similarly, Magenheim and Mueller (1988) examined the longer-term market reaction and found that stock of the acquiring firms declined over a long-term period after the acquisition, which may suggest that the wealth to the acquiring firm could simply been transferred from acquired stockholders to target stockholders.

Asquith et al (1983) reported CAARs of  $-0.072$  in the 240 days following merger outcome. This return was statistically significant, which provides strong evidence against all previous negative abnormal return results. While, Langetieg (1978) reports CAARs between  $-0.223$  and  $-0.2615$  over a 70 months period using four different statistical methods. Malatesta (1983) finds statistically significant abnormal returns for the year after the first public announcement of merger but insignificant results for the year after completion of the deal. Limmack (1991) also assessed the performance of post-acquisition over two years with significantly negative CAARs results for two of his three methodologies. Loughran & Vijh (1997) summarized the result from numerous studies and came up with the conclusion that the only one that do gain from the deal transactions is target firm's stockholders due to the fact that the acquiring firm's only gain negative abnormal return from the transaction.

However, there are other researchers that do not agree with the negative long-term performance and several studies that reports a smaller positive return to acquirer shareholders including Bradley et al (1988), who found evidence of significant positive return of  $0.97\%$  in a US sample in the time period 1963-1984 of 161 tender offers. Furthermore, Tuch and O'sullivant (2007) recent literature found that only a third of acquiring companies experience wealth gains. Furthermore, Andrade et al (2001) used three days event window when combining both target and acquirer data and reported an abnormal return from  $1.4\%$  to  $2.6\%$ , and averaging  $1.8\%$  overall for the 3,688 completed mergers sample size. His study indicated that mergers do create shareholder value on average. This result is supported by Yuce and Ng (2005) study that did find a significant positive abnormal return for both the target and acquiring company's shareholders. Laabs and Schiereck (2010) used 230 data set of takeovers

firms from the automotive supply industry from the period of 1981 to 2007 to analyze the long-term performance of acquirer. They found that acquirers do gain in short term return but construct a diminishing effect in stock return from 20% to 16% over a long-term. Agrawal et al (1992) found a statistically significant five-year CAAR of -0.1026 under a size and beta adjustment.

Other studies like Anderson and Mandelker (1993) reported five-year CAARs of -0.0956 and -0.0931, under a size and a size & book-to-market (b/m) adjustment, respectively. Rau and Vermaelen (1998) found a statistically significant three-year CAAR of -0.0404. Campbell and Gosh (2001) conducted a study on the short-run wealth effects of M&A in the real estate sector and found positive abnormal returns to target companies around the announcement day confirming the inefficient management hypothesis. This hypothesis states that abnormal returns to target firm shareholders are larger if cash is the chosen method of payment rather than stock. They used a sample of REIT mergers from 1994-1998 and found that in public-public REIT mergers acquirers earn CARs of -0.60%, while acquirers of public-private REIT mergers earn CARs of 1.90% surrounding the announcement day.

Recent studies use of US firms as data set did as other previous studies conclude mix result of whether M&A creates profitability. Ravenscraft and Scherer (1987a) use of US companies as data set differed with the Meeks (1977) in that they used some business data to be able to monitor the performance of the acquired company. Their data set were taken from year 1950 to 1977. They found that in 47 % of the pre-acquired cases there were significant declines in profitability. Jensen and Ruback observed a 25 years long period (1956-1981) by means of event studies. According to them, the target's share prices increased by 20-30 percent (Jensen and Ruback, 1993). A fifth study examining the short-run wealth effects of M&A in the real estate

sector was conducted by McIntosh et al. (2001) and found positive abnormal returns of 5.29% to takeover targets surrounding the announcement day. Other studies of Ravenscraft and Scherer (1987b) focused on tender offers and their study found that although the post-acquired profitability declines, it is not statically significant. Many studies either confirmed previous results or found little changes, which lead to other studies in this area. (Ikeda and Doi, 1983, Kumar, 1984).

The second method to measure merger performances involves examining the operating indicators for firms before and after deals to determine the fluctuations associated with the deal. These studies emphasis on accounting rates of return, profit margins, cash flow returns, expense ratios, or any other accounting and financial ratios and estimators. Each measure has its proponents and critics. These studies try to control the factors by comparing the post- acquisition changes in financial performance to industry averages or to use multiple regressions to study the significant statistics of the result. According to Kangari (1988) financial ratio can be used to analysis information from financial statements to access the strengths and weaknesses of merge or acquired firms.

There have been many different results while using this form of measurement. For instance, a study of Surjit (2002) examines the M&A activity in India during the post liberalization period. The study tested the changes of select financial ratios after deals in India. Furthermore, Ravenscraft and Scherer (1989) found out by using accrual accounting variables that target performances declines during the post-merger period related to that of the pre-merger period. Cabanda and Pajara-Pascual (2007) examined the financial and operating performance of Philippines shipping companies from period 1994 to 2003 using the accounting performance variables such as net income, return on asset, return on sales, return on equity, net profit margin, capital



expenditure, capital expenditure/sales, and capital expenditure/total assets to analyze the effects of both short (three years prior to merger) and long run (seven years after the merger) period merger on firm performance. All these performance variables did not show significant gains after mergers in both in short-run and the long- run.

Nevertheless, Ramakrishna (2008) study found that merged firms performed fine during their post-merger period on average with respect to the pre-merger period. While, Kruse et al (2007) and their 69 non-financial merged firms discovered that their operating performances improved during the five years post merger period as compared to their five years pre-merger period. Furthermore, Vanitha and Selvam (2007) found significant increase in the operating performance for 6 merged firms; whereas 17 merged firms showed insignificant increase in their operating profits. Demirbag and Tatoglu (2007) examined the post mergers performance by using the performing valuables Return on Investment and Net Profit Margin and discovered that the profit margin improved with respect to the pre merger years but remained at constant against their competitors.

Ramaswamy and Waegelein (2003) tested Hong Kong merged companies' long-term post-merger financial performance of in by using operating cash flow returns on market value of assets as the measure of performance, with a sample consisting of 162 pre-and post-merging firms from 1975 to 1990. Their study revealed a positive significant improvement in the post-merger performance and firms in different industries "conglomerate mergers" experienced better post-merger financial performance than in comparison to firms in same industries. However, mergers happening during the years 1983 to 1990 experienced worse post-merger performance in contrast to those before 1983.

King et al. (2004) investigation contradicted the Ramaswamy and Waegelein's (2003)

findings suggesting that M&A do not lead to superior financial performance but rather to a modest negative effect on long-term financial performance of acquiring firms. Similarly, Mantravadi and Reddy (2008a) tested whether the size market target and acquiring firms for both when it comes to the post-merger operating performance in India with sample containing of all the acquiring transactions happening in the period from 1991 to 2003. The study used financial ratios such as operating profit margin ratio, gross profit margin ratio, net worth, return on capital employed, and debt equity ratio covering a three years pre-merges and five years post-merger. The result indicated that relative size is differential to post-merger performance. Therefore, there was a decline in net profit margin ratio and return on capital employed along with an increase in financial leverage after merger for medium sized firms. While for larger size target firms which are greater than acquiring firms had significant reduction in returns on net worth capital employed and a increase in financial leverage. But, firms with relative large size had no difference in pre and post-merger performance.

Sirower and O'Byrne (1998) also used accounting performance for merging firms, but used economic value added as their changed accounting measure. They followed the firms' accounting performance for five years and compared it to the short-run predictions of the stock market around the time of the merger. They found that the accounting outcomes matched the short-run stock market predictions in 66 % of cases. Ghosh (2001) examined whether operating performance are different across cash and stock acquisitions and ascertained whether improvements in operating performance are driven by sales- or cost. His results indicate that cash flows increase significantly by about 3% per year following cash acquisitions, while the enhancements in performance was resulted from higher sales growth and not because of cost reductions. Therefore, one can argue that better management of merging

firms' resources result to an increase in operating performance. Pawaskar (2001) found that the shareholders of the acquirer companies increased their liquidity performance after the merger. Ramaswamy and Waegelein (2003) found that there is an improvement in post-merger operating financial performance measured by industry-adjusted return on assets. In conclusion, Kumar and Rajib (2007) study on profitability shows that merged firms do have a lower profitability than firms that did not merge.

Recently, studies have appeared to combine the accounting measures and stock market event study approaches. When both measurements are applied to relatively large samples of deals, the study can provide result on whether value is created in both short and long term but also provide indications of the results consistency. For instance, Healy et al (1992) combined financial accounting analysis and stock market event study techniques to examine the post-merger outcomes of 50 large mergers occurring between 1979 and 1984. The authors found that post-merge industry-adjusted net cash flow rates of return were around 3 percentage points higher after the merger. While Limmack (1991) found that there is a long run improvement in operating cash flow performance of merged companies. Kumar and Rajib (2007) studied the impact on the shareholder value after merger, completely using accounting measure. By using book value of asset and sales model, the study found that corporate performance improves after merger. While Kukalis (2007) and Yook (2004) found that the acquirer firm's pre-merger performance are partly higher than the post merger performance of merged firms. While Dickerson et al (1997) study show that acquired firms have lower growth with a reduction in profitability. Furthermore, Fuller et al (2002) discovered that the bidder shareholders created value when purchasing a private firm or subsidiary than when purchasing a public firm, and Boone and

Mulherin (2008) discovered the inverse relation between bidder returns and takeover competition.

However, the profit theory by Mead (1969) poses a different perspective. In his work, he defines merger profit as “an instantaneous increase in the earnings per share of an acquiring company, due solely to the merger and totally independent of operating efficiency, market power, or other causes of increased profitability that may accrue with the passage of time” (ibid: p.296). By looking at the level of merger profit dependence on firm size, he discovered that the larger the acquired firm, the larger the merger profit for the acquiring firm would be. Mead tested this theory with numbers of different hypothesis tests. Mead used a sample of 122 mergers and carried out a two-tail test to test the PE ratios of acquiring and acquired firms at a 5 % significant level. The result turned out to be insignificant for horizontal but insignificant for vertical mergers. His results supported his theory that merge firms profit are highly relevant as far as conglomerate mergers are concerned.

Furthermore, Ooghe et al (2006) found that the profitability, liquidity and solvency of M&A company declines. Pazarskis et al (2006) found that the profitability of firms decreases due to merger/acquisition event. According to Kumar (2009) the post-merger profitability, assets turnover and solvency of the acquiring companies show no enhancement compared with pre- merger values. In fact, mergers usually do not lead to improvement of the acquirer’s financial performance. Mueller’s (1980) used the accounting measures like size, profitability, growth and leverage, to study the performance characteristics of takeover firms in the pre – and post – takeover periods. While Canagavally (2000) also added growth, risk of the companies before and after merger. The researcher also investigated the share prices in response to the announcement of merger. Marimuthu (2008) also found that post acquisition showed

higher growth rate for lower sales growth companies but suffered decreases in their mean P/E ratios, mean EPS and mean dividend payouts, whereas, high sales growth companies showed lower rates of growth. The similar pattern of inconsistency was found in the high sales growth companies with their EPS, PE ratio, earnings and dividend payouts being greater.

Some of the more current evidence in this classification comes from studies comparing pre-merger and post-merger performance of firms in one industry at the time. For instance, a decline in the operating performance in terms of profitability of the merged firms was observed in different industries by few researchers. Mantravadi & Reddy (2008b) found that the operating performance of non financial institution, textile, pharmaceuticals and electrical industry gave negative impact on the overall operating performance of the mergers and even experiencing losses on the chemical and agriculture-products industries. The Chemicals and agri-products sectors, performance after mergers declined in returns on investment and profitability margins. Similarly, pharmaceuticals, textiles and electrical equipment sectors saw a marginal decrease in performance in terms of profitability and returns on investment.

When it comes to merged banks and merged firms in financial industries (ibid) found that mergers have positive impact on profitability of firms in the banking and finance industry. DeYoung et al (2009) showed that commercial bank merger during the 1980s and early 1990s using accounting ratio had an improvement in cost efficiency profit. Also, Kwan and Wilcox (2002) found evidence of significant cost reductions in their study of U.S. bank mergers during the 1990s, but only after adjusting the data for merger accounting rules. Consistent with this, Knapp et al (2006) found that bank holding company (BHC) mergers between 1987 and 1998 generated profit gains up to five years post-merger, after adjusting annual BHC profits to the average industry

trend. Cornett et al (2006) found evidence of revenue efficiency improvements for large mergers, product focused mergers. Hannan and Pilloff (2006) used examine the features of acquired banks between 1996 and 2003 and showed that cost-efficient banks tend to acquire less inefficient targets.

A change in method of study was done by Heron and Lie (2002) who investigated the relationship between the method of payment, earnings management and operating performance by using accounting methods. Their first study compared the pre-merger performance of the merged firms with similar industry. Second, the study compared the post- merger performance with industry-adjusted performance. Both studies came out to be that acquiring firms show superior operating performance relative to their industry competitors close to acquisition and continue positive performance level in excess of their respective industries. Loughran and Vjih (1997) also calculated long-term abnormal returns for acquiring firms using different payment methods such as stock and cash financing over the period 1970-1989. They found that acquiring firms using stock financing have abnormal returns of -24.2% over the five-year period after the deals, whereas the abnormal return was 18.5% for cash mergers.

Travlos (2009) also studied the relationship between different methods of payments for bidding firms around announcement date. The result stated that stockholders experience significant normal rate of return around announcement period if the bidding firm pay with cash. However, with stock finance the stockholders receive a significant loss at the announcement day. The author supported the result by regression analysis with AR as depending variable and relative size and methods of payment as independent variables. Yang (2008) investigated the determinant of the payments in merger and acquisitions. He found that acquiring hospitality cash

payments shareholders' in the long term received more positive abnormal return of 15.51% ( $t= 3.89$ ) while stock payment shareholders' receives significant negative return of 2.37% ( $t=2.35$ ). The study also controlled size for bidders and found a significant negative impact on cash offers while a more positive return on stock offers. The study also showed that the cash offers finance heavily decreased three months after the deal.

Many other authors have argued that the profit decline regardless of the methods used to measure performance, although it was greatest where the acquiring firm used stock payments. Asquith (1983) studied the abnormal return related to factors such as the methods of payment made to the target company and the size of the bidder and target firm. He discovered that small firms get significant better return than large firms around the event period by 2.24%. He suggests that large bidder firms experience significant shareholders wealth loss when the pay with cash but increases as smaller the bidder firm is.

Authors argue that the profit decline was likely due to a loss of managerial control by the acquiring firms. Others such as Beena (2000) concluded that the post merger positive performance in the early 1990s was matched by the dominance of mergers between firms in the same industry with similar product lines. While Ding et al (2010) found evidence that the performances of firms vary over business cycle. Overall, some research results indicate mix views. It is either a decline in profitability post-acquisition, a positive abnormal return and performance or just a little improvement. Studies in this area either confirm the same negative results or find little change in performance following acquisition (Kumar, 1984). In summary, the few studies done on performance of M&A activities, have reported mixed results, with findings ranging from slightly positive to significant negatively after post –mergers.

## **2.4 Mergers and Acquisition activities in the US**

Before one discusses the 20<sup>th</sup> century' M&A activity, one needs to look closer at the previous five periods of waves in the history of M&A activities. According to many research, all the previous waves were caused by some shock or modification in industries, economy, regulation and technology modifications, some times even a shock in those places (Gaughan, 2002). High levels of M&A activity described each wave. Some of the firms being first movers while other firms followed what other firms did. However, all the waves were followed by a serious decrease in deals. The first wave started during the depression in 1893, where the primary motive were monopoly power (Nelson, 1959). It was a period of economic expansion, especially in mining and manufacturing industries. The second wave was much smaller than the first, perhaps due to it being around World War I. The concern about the abused of power from the monopolies firms made the American Supreme Court illegalise this activity. For instance, the interruption of Rockerfeller Empire's merge had to be made due to the concern of monopolies. The problem regarding monopolies led to an oligopolistic industry structure in the second wave. However, the second wave collapsed with the market crash in 1929 and worsens with the depression in the next four years, and turned many firms into bankruptcy (Sundarsanam, 2003).

The third wave in 1965 was characterized by the motivation of growth and a high level of M&A activity. This wave was all about conglomerate merge where smaller companies often targeted larger companies, which had not been done in previous waves. Meanwhile, the fourth wave in 1984 to 1989 was all about hostile mergers and megamergers in industries such as oil and gas, drugs and medical equipment. The wave also lead to the start of diversifying strategies, leveraged buyout, development



of products and techniques in order to prevent bankruptcy and takeovers, a more debt financing strategy and international targets. However, the wave slowed down around the 90's (Ibid, 2003).

The last and fifth wave in 1992 started off with an increase in numbers of M&A again but in this wave most of the deals were financed by increased use of equity. The emergence of Internet and telecommunication created new industries and capabilities, which generated more M&A opportunities. The emerging market deals also developed under the fifth wave, which largely made M&A activities, a worldwide phenomenon (ibid, 2003)

Mergers and acquisitions have become an important strategy in USA and more deals are now taking place in the USA than in any other country in the world. In the 1990s mergers and acquisitions in the United States increased rapidly. These activities improved the overall US economy due to the jobs and business were created under this period. These days, it is not only big companies that are more likely to undergo mergers or acquisition, but also small companies acquiring other small ones in order to keep them in the game. Industries such as Banks, Insurance, Real estate, Investment services and technology services are among the top sectors in terms of mergers and acquisitions in the USA. An average of 6.4 percent of firms in this area were merged or acquired during the period of 1990-1994. A total of 100000 firms were merged over the first half of 1990s and over 1.6% of them were small firms that were merged or acquired between 1990 and 1994. In the 20<sup>th</sup> century, there were a more of a mixture of M&A activities in US, which was viewed as a positive start of the 21<sup>st</sup> century but slowly and steadily dropped after the year 2009. Since it is said that merger and acquisition activity often picks up when stock prices are higher, this best describes the activities of 2007, when the stock market was at its peak and the

merger or acquisition increased. In that year, increase in M&A activities in US made buyers overly confident of their ability to buy target companies to create gains. However, that peak was only a short-lived. During the financial crisis in 2009 when stocks were reaching their bottom forms, the M&A activities started to decrease and dropped from \$250 billion in the first quarter of 2009 to \$200 billion in the second quarter and \$130 billion in the third, says (Krant, 2012).

Despite remaining concerns for the global economy and financing difficulties of the last years, there continues to be a steady M&A activity in the US. This suggests that the importance of growth still remains top priority for firms. According to Thomson Reuters data, merger volume rose 14.2 percent in US during 2010. The industries whose deals doubled its market share have been energy and power. Those industries have rose from 12.5 percent to 28.1 percent in 2010 (Thomson Reuters, 2010) Other rises in M&A market in 2010 was the growth in emerging markets. One of the biggest themes in mergers and acquisitions was in the Asia-Pacific region. Those deals rose 43.5 percent, according to Thomson Reuters (2010). According to S&P (2012), the foreign buyer and investor acquisition has almost increased over the domestic M&A activity since 2008. In 2000 the American M&A was around 1702.4 with 363.1 of them being foreign acquisitions (21.3%). In 2000 the foreign acquisitions declined to 8% due to the global financial situation.

Despite some growth in US M&A deals in 2010, the M&A activity continued to be weakened in 2011 and in the few quarters of 2012. This could be due to the distresses over European debt and a pullback in financing (PwC, 2012). From figure 1, it is clear that the number of M&A activities is starting to increase from the weakened M&A activity due to the global financial distress. However, one can see that the M&A activity was still normally steady even though the world was hit by financial

recession.

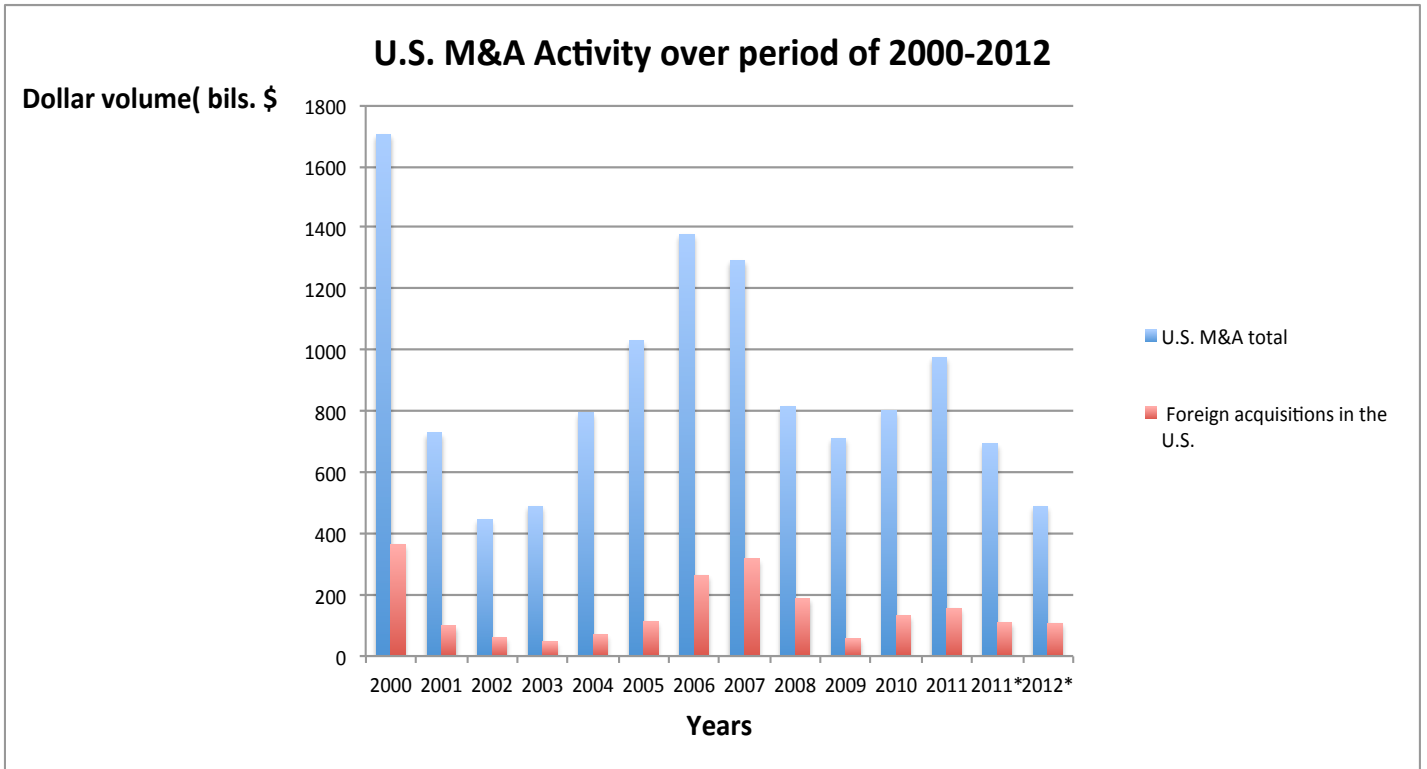


Figure 1; Note: source from S&P Capital IQ

### 3 Research data and methodology

This chapter outlines the research design and methodology adopted in this study. The chapter begins with a brief review of the research method available and the method used. The chapter also includes the sample selection criteria and the collection of relevant information. The final part of the chapter examines the selection of data, methods of measurements and the statistic producers used in examining the research objectives.

### **3.1 Data**

In order to assess the real financial performance of merged and acquiring companies, the performance of firms stock return for participate industries and period is going to be examined. It is in the study's knowledge that stock return data is a good way to investigate companies' performances because if mergers and acquisition activities are effective then the impact on the operational efficiency and or profitability will appear in the published stock return. But one needs to remember that stock performance can be seen as a measurement of investors' expectation rather than actual return which makes some researchers prefer accounting data to measure the actual performance conditions. However, accounting performance can be easily affected by managerial decisions, which make stock and return performance a more truthful view of financial performances. If one supports the theory of market efficiency, stock prices will adjust instantaneously to new information and any changes in companies. So if the market is efficient with respect to mergers activities, then any information about M&A activities could possibly be shown in the stock prices. Consequently, by measuring the announce days and the days after the completion of the deal one can really study the firms stock return performances and then investigate whether M&A activity acquiring firms creates value in short-term.

This study consists of 100 listed acquiring American firms from different US industries, involved in M&A activities occurring between 1998-2011. All the used firms are listed on American stock index such as New York stock exchange or NASDAQ. The acquiring stock information such as daily stock return and daily value-weighted market return was collected from Center for Research in Security Prices (CRSP), a stock database from Wharton Research Data Services (WRDS). The announced date, completed date, method of payments and transaction value were

collected from Thomson Financial database and companies website published announcements. The methods of payments and market capitalization figures came also from WRDS.

The data met the following criteria: (i) the deals must have been completed, (ii) the firms need to be available in CRSP, in other words, it must be listed on the American stock exchange during the relevant period, (iii) the deal must be domestic, i.e both the target and acquirer are American based firms, (iv) the acquiring firms should not have multiple acquisitions during the relevant period to limit biasness, (v) deals with all sizes of transaction value were considered, (vi) it is acceptable if the acquired firm is small relative to the acquiring firm, (vii) all announcement and completion dates need to be available.

Table 3.1 in appendix, reports key descriptive of the listed deals, broken down by decade. The screening of the data to meet the criteria above led to a final sample of 100 deals. The descriptive statistics of the completed companies involved in M&A activities are mixed. For each industry the numbers are reported for the acquirer. The industries are mixed from mineral, manufacturing and service industries to some insurance and financial firms.

**Table 1**

Industry	Sample Industry Distribution	
	Acquirer	
Biotechnology	7	7%
Pharmaceutical	8	8%
Airlines	1	1%
Manufacture	7	7%
Financial	9	9%
Utility	5	5%
Real estate	7	7%
Service	6	6%
Media	3	3%
Food producer	4	4%
Oil and gas	6	6%
Retail	4	4%
Telecommunications	5	5%
Computer hardware and Software	5	5%
Others	20	20%
healthcare	3	3%
<b>Total</b>	<b>100</b>	<b>100%</b>

Note: The table shows a mixer of industries. The finance industry includes: real estate, insurance, investment banking and other financial institutions. Services industry includes: consumer products and services. Retail industry includes: retails. Utility industry includes: energy. Others includes: waste management, tobacco, personal care, trucks & other vehicles, conglomerate, defense and security. Manufacture industry includes: companies that produce materials. Food and beverage industry includes: producing and deliver food and beverage. Media industry includes: newspaper, entertainments.

It is in the study's knowledge that accounting data is also a good way to investigate companies' performances because if mergers and acquisition activities are effective then the impact on the operational efficiency and or profitability will appear in the published accounts. But one needs to remember that accounting performance can be easily affected by managerial decisions, which makes comparing different industries to each other difficult. However, proponents of this methodology argue that accounting data measure actual performance and not the investors' expectation, which makes it somewhat more reliable than the first approach, which uses equity, returns.

Thus, an accounting performance analysis over a sufficiently long period of 22 years should reveal whether or not merged companies entail real financial gains.

Throughout this study, the variables subjected to analyses were taken over large data of pre and post-acquisition from different US industries a period of 22 years between 1989 and 2011. The accounting information was collected from the Wharton Research Data Services (WRDS). The WRDS database provides information about firms' balance sheet and income statement items such as fixed assets, current assets, total liabilities including short-term and long-term debt, sales and expenses.

### **3.2 Methodology**

Throughout the short-run event study, the methodology of Linn and McConnell (1983) and Brown & Warner (1980)<sup>1</sup> is going to be used following their calculation of event effect-daily abnormal return (ARs) and cumulated return (CARs). These models follow Fama's (1970) market efficiency theory, which implies that one can investigate firms' performances by looking at past stock performance. Consequently, the use of event study as a measurement approach assumes that all stocks perform similarly to a market index adjusted by the risk related with the stock (ibid).

Event study methodology is a way to measure the stock performances and the abnormal returns. Ball and Brown (1968) and Fama et al (1969) introduced the event study methodology, which is used heavily when measuring abnormal return. In order to analyse whether value creates as a result of the event, it is important to detect abnormal return. The efficient market efficient is available in three forms; weak, semi-strong and strong, depending on how the information absorbs into stock prices.

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<sup>1</sup> See Brown and Warner (1980) for more and different market model with respect to the market and risk-adjusted model.

Weak form efficiency assumes that all historical information public information reflects in stock prices. The semi-strong form assumes available public information is incorporated in stock prices. Finally, the strong form assumes that both public and private information is to be showed in stock prices.

Many researchers have argued that the methods used to calculate long-run abnormal stock returns are not flawless and often lead to bias tests such as skewed or rebalancing biasness and an extremely misleading performance measurement (Blume and Stambaugh, 1983). That is why selection of proper benchmark, the choice between, CAPM, market model, the three-factor model of Fama et al (1993) or the choice between an equally or market value weighted index becomes very essential (Kothari and Warner, 1997).

According to them, CAR represents the return on portfolio, which in this case is reweighted every period to present the equal dollar exposure. This constant reweighting causes price measurement error such as non-spread price fluctuation, price rounding and other sort of errors that can cause serious unattainable spurious abnormal returns (Dimson and Marsh, 1986). To summarize the discussion from many authors, daily long returns and longer observation period could lead to a more bias CAR. Since the long-term performance measure can potentially raise serious biasness this study is using a short-run daily rather than monthly returns. According to Dimson and Marsh (1986) study, short-term studies do not need to take concern of the possible biasness in the study, which makes the importance of the accurate choice of benchmark not to affect the mergers or acquired shareholders performance. As covered above, this study is going to use the choice of market equal weight value index as market return attributes.



The Methodology of Brown & Warner (1980, 1985) suggest that expected return is determined by the capital asset pricing model, which states the correlation between risk and expected return. The cumulated abnormal return framework is then calculated with formula:

$$AR_{it} = R_{it} - (\alpha + \beta R_{mt}) \quad (1)$$

Where

$AR_{it}$ : Abnormal Return is the return for firm  $i$  in time period  $t$

$R_{it}$ : the return of return for firm  $i$  in time period  $t$

$R_{mt}$ : is the value-weighted market index return.

$$R_{it} = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}} \times 100 \quad (2)$$

$$R_{mt} = \frac{P_{m,t} - P_{m,t-1}}{P_{m,t-1}} \times 100 \quad (3)$$

The abnormal return (AR) is the difference between the actual return and expected return. CAR is in that turn the average of a summarized abnormal for each stock for a specific period.

Even though there are many  $CAR_{it} = \sum_{i=1}^N AR_{it}$  version of the CAR, this study

uses the standard derivation of AR to test the statistical significance at 10% (90%) 5% (95%) and 1% (99%) level respectively<sup>2</sup> .

In order to perform an event study one needs to determine the event day, the event window and the estimation period. Despite numerous statically studies of the stock performances related to merger announcement one can argue that the entire value creation of deals will only be shown after the completion of acquisition which is why both the announce and completed dates are used in this study. Additionally, to be able to follow the criteria of eliminating companies with multiple acquirers to remove noise, the study uses a 28 and 5 trading day event window period ( $t - 7, t + 20$ ), ( $t - 2, t + 2$ ), around the public announcement of acquisition and completion with an estimation window of 130 days ( $t - 30, t - 100$ ). Elton et al (2003) state that stock prices might react over the time and not on the same day, so when examining the abnormal return one needs to analyse the abnormal return around the time interval both after and before the announcement day. According to Armitage (1995), an estimation window can be different length. It is common to choose a higher estimation, which is why this study is using 130 and 90 days which agreeing with Armitage is sufficient enough to perform the event study.

The statistic market model used in this study is already shown above. To be able to estimate the expected return of the acquiring company, a regression on the market index is made, which estimates the parameters  $\alpha$  and  $\beta$  by constructing an OLS regression in STATA.

$$R_{it} = \alpha + \beta R_{mt} + \varepsilon_{it}$$

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<sup>2</sup> The P-value test is preferred to a t-test due to it allows us to use robust standard errors. If the p-value is smaller than the significance level, 0.001\*, 0.05\*\* and 0.100\*\*\* the value is statistically significant.

STATA, which is a statistical software package, is used to explore the parametric test for the market model detailed above. In order to run the data successfully, each company has to have sufficient number of observations between the suggested event windows. This is done by cleaning the data from insufficient observation by creating a variable *dif* that equals to 1 if the observation lies within the chosen event window (28 trading days, 5 trading days) and one that lies within estimation window (130 trading days, 90 trading days). All the companies with insufficient observations drop automatically. But before testing the abnormal performance the need to calculate the  $SD_{it}$  is important. The standard derivation is calculated as the standard deviation of the abnormal return during the estimated time period.

$$SAR_{it} = \frac{AR_{it}}{SD_{it}}$$

Lastly, in order to test for abnormal performance, statistical tests are performed. The t-test is used to find out whether or not the CAR is significant different from zero. The statistic test is calculated for the all event windows [-7;+20],[-2;+2]. T-test calculates the difference between two means. When performing a t-test, there are some assumptions concerning the probability distribution that must hold in order to fully trust the results of the test (Eriksen and Møller, 2008). These assumptions are normality, independently and identically distributed abnormal returns, an expected value of the abnormal returns of zero, and a constant variance. These assumptions are critical in order to certify the strength of the test by looking at the observations' significant statistics (ibid).

### **3.2.1 Determination and definition of the firm size, relative size and payment method**

According to Asquith (1983), the cumulated abnormal return will differ depending on firms' size and the type of payment announced charged by the bidders. To determine whether the performance is in correlation with factors such as firm size and payment methods, this study followed Asquith (1983) and Travlos (2009), relative size is defined as the value of transaction divided by the market value of equity. The determination of firm size is divided by Small and Large. The author (ibid) defined small (large) firms as being equal or smaller (larger) than the 25<sup>th</sup> percentile of NYSE firms at that year. The payment methods used when acquiring firms in this study are cash, stock and mix which are created by dummy variables. Regression is used to estimate the relationship between the CAR and the independent variables firm size, relative size and payment method.

### **3.2.2 Determination and definition of the selected performance figures**

To examine the profitability implications of merge activities, the study analyze the performance using the methodology from Barber and Lyon (1997) and Healy et al (1992) and Cornett et al (2006). The difference between the pre- and post-merger years mean performance measure is then worked out. To confirm the results and significant differences of the test the study uses Paired sample t-test, which is used to get the significant differences between the mean of deals years.

The performance indicators consist of variables capturing post-merged profitability and operational efficiency. This treatment should indicate whether any observed gains

are attributable to revenue or to cost effects. The traditional measures of profitability are calculated both before and after are Return on assets (ROA), gross profit and EBITDA. Other performance indicators are Leverage variable such as Debt ratio and Liquidity variables current ratio. The comparison of the relative performance indicators for mergers and acquisition allow a test of the hypothesis.

**The operating performance variables are:**

*Return on assets*

The variable is defined as the earning before interest, tax, depreciation and amortization over the value of total assets. Return on assets (ROA) measures how efficiently companies are using their assets in order to generate profits. The higher the ROA the more efficient the company is generating earnings. The smaller the ROA the harder it is for the company to generate earning and the dependent they are on funds. This variable will be used to measure the accounting performance of acquiring performance. According to Barber and Lyon (1997), return on assets is one of the most influential measurements for evaluating firm performance, which is not effected by capital structure of a company.

*EBITDA*

EBITDA margin is defined as Earning before interest, taxes, depreciation and amortization divided by total revenue. Earning before interest, taxes, depreciation and amortization (EBITDA) measure companies operating probability. EBITDA provides an investor with clearer view of a company's profitability due to execution of non-cash items.

### *Gross profit margin*

Gross profit margin is defined as revenue subtracted by cost of good sold. It gives an indication of revenue after considering the cost of good sold. A more efficient company typically have higher profit margins.

### *Debt ratio*

The ratio is calculated by dividing total debt with total assets. A lower debt indicates a financial opportunity to borrow in the future without any significant risks. Debt ratio measures the quantity of debt a company has comparative to its assets. The ratio indicates the leverage of the company and their potential to handle their future debts.

### *Current ratio*

Current ratio is defined as the current assets divided by current liabilities. It shows an indication of company's ability to short-term debt obligations. The higher the ratio, the more liquid the company seems to obtain. An exceeding current asset may have difficulties meeting its short-term obligations.

### *Total assets turnover*

Total assets turnover also measures companies' ability to use their assets to produce revenue. However, instead of using profit, the total asset turnover ratio uses revenue. So the Total assets turnover is defined as sale revenue divided by total assets. The higher the ratio, the more sales can companies' produce based on its assets.

## **4. Result and discussions**

### **4.1 Stock performance result**

The figures of the study represent in table 2 is the result of the AR on the 100 acquiring companies between the dates of public announcement using the formulas above. With an average announcement period significant abnormal return of -1,273% ( $t=-3.6$ ) and the largest obtained AR not being on the announcement date but on day +8 with 0.463% return ( $t=1.54$ ), there are virtually no gains when it comes to America acquiring companies in period 1998 to 2011 at the announcement day. This implies that the stock market is expected little negative change in the profitability of firms once the deal is announced. This finding of the firms' performance may not be fully consistent with the theory that the market fully adjusts to mergers or acquisition news at the time of announcements but then decrease after the overexcitement reduces. Some of the reasons could be the fact that the announcement was made too late for the stock to react to it because to the market was perhaps closed which makes the reflection in the stock occur after the actual announcement, which seems to be the case in table 2. The table shows a positive insignificant return of 0.179%, an increase of 1.14% on day +1 after announcement date over the event window, which suggests that the abnormal return does not react to the news on the day of announcement but more or less a day after the announcement.

**Announcement of the deal with  
Table 2 28 days event period**

Days	%		
	AR	t-statistic	Sign.level
-7	0.173	0.86	
-6	-0.122	-0.8	
-5	-0.015	-0.09	
-4	-0.055	-0.27	
-3	0.197	0.75	
-2	0.019	0.12	
-1	-0.103	-0.56	
0	-1.273	-3.6	1%
1	0.179	0.54	
2	-0.132	-0.55	
3	0.002	0.01	
4	-0.231	-1.44	
5	0.176	0.83	
6	-0.573	-1.96	10%
7	0.159	0.73	
8	0.463	1.54	
9	-0.195	-0.92	
10	-0.278	-1.59	
11	-0.071	-0.31	
12	0.178	0.81	
13	0.032	0.15	
14	-0.003	-0.01	
15	0.345	1.93	10%
16	0.295	1.38	
17	-0.422	-1.72	10%
18	0.209	0.96	
19	0.327	1.44	
20	-0.253	-1.03	

<b>Announcement of the deal</b>			
Mean Cumulative abnormal return			
Days	N	%	
		CARs	t-statistic
(-7,+20)	101	-0.049	-0.25
(-2,+2)	101	-0.115	-1.56***

Table 2- the sample consists of 100 acquiring listed companies between the periods of 1989 to 2011. Average abnormal returns and cumulative average abnormal return of American bidding firm from 1998-2011, using the return  $R_{it} = (P_{it} - P_{it-1})/P_{it-1}$ . The t-statistics for AR and CAR shown in are statically significance. The study is using more than 10 years of merger and acquisition data, which possibly reduces mis-specified biasness in the study.

During the post-announcement period in the 28 days event window, day 6, 15 and 17 all posses significant abnormal return with 10% significant (-0.573%, 0.345%, -4.22%). For the pre announcement period there is no day with significant abnormal return. The table also reveal an -0.049% insignificant negative CAR around the 28



days event date which is consistent with earlier studies such as Asquith et al (1983) with his CAR of -0,85% over a two days event period for US takeover bids over the period 1973-1983 and the Canadian study by Dutta and Jog (2009). However, this result does differ from other studies in other countries such as in Japan and UK where recent studies show a significant/insignificant positive abnormal return. According to Dutta and Jog (2009), the difference in results could possibly be due to different country features such as takeover regulations and other larger features related to size of target firms, the frequently use of cash or stock when financing deals, which according to them can possibly lead to positive or negative ARs and CARs for shareholders of acquired firms.

As can be seen in the table, the abnormal return around the event date fluctuates from 0.002% on the third day to a negative significance of -0.573% on day +6. When it comes to the CAR, both the 28days and 5days event period have negative CARs of -0.049% and -0.115% with 5days event period having a higher negative significant return. By linking this result to the different M&A theories, the positive gain from the acquisition as one can see from day 1 in table 2 could possibly come from increase in synergistic gain. The positive value, or synergistic gain can also be seen as being derived especially from an increase in operational efficiency.

These results indicate that the shareholders of acquiring firms gain not from the merge public announcement. Therefore, it can be concluded that the motivation behind mergers and acquisition such as expected synergy value is not always achievable. However, the negative insignificant abnormal result of acquiring returns implies that motivation undertaking mergers and acquisition are highly because of hubris and agency motivations (Fuller et al, 2002). Furthermore, Morck et al. (1990) supported the argument and stated that there is the possibility that hubris and agency motives are

the reason why there might be a decrease of abnormal return of the acquiring firms.

The performance of stocks after deals cannot be investigated without studying the behaviour after deal completion. Table 3 plotted above shows a positive significant AR of 0,503% on the event date, which positively dropped at to day +1 (with a t-statistic of 1,49) but then as proposed, reduces immediately after day +1.

**Completion of the deal with 28 days event period**

Table 3

Days	AR %	t-statistic	Sign.level
-7	0.212	0.56	
-6	0.211	1.00	
-5	-0.005	-0.03	
-4	-0.015	-0.09	
-3	-0.097	-0.42	
-2	-0.252	-0.97	
-1	0.023	1.08	
0	0.503	2.15	5%
1	0.350	1.49	
2	-0.006	-0.03	
3	-0.026	-0.14	
4	-0.391	-1.74	10%
5	-0.040	-1.66	10%
6	-0.343	-1.47	
7	-0.148	-0.51	
8	-0.074	-0.37	
9	-0.116	-0.51	
10	-0.132	-0.46	
11	-0.130	-0.52	
12	0.078	0.36	
13	0.076	0.34	
14	-0.235	0.36	
15	-0.014	-0.06	
16	0.067	0.36	
17	-0.057	-0.43	
18	0.024	0.08	
19	0.019	0.09	
20	0.369	1.36	

**Completion of the deal**

Mean Cumulative abnormal return

Days	N	CARs %	t-statistic
(-7,+20)	101	-0.440	-0.26
(-2,+2)	101	0.370	0.28

The significant levels of over performance suggest that the stockholder of acquiring firms get a wealth gain of about 0,503% at the announcement of the deal completion. The largest abnormal return is also on day 0, the date of announcement of the deal.

During the post-announcement period, day 4 (-0.391%) and day 5(-0.040%) are significant.

The CAR on the other hand has a negative insignificant return of -0.440%, which is less than that of 5days period CAR of 0,370% as (with a t-statistic of 0,28) stating that a decrease in event period creates a higher CAR. With an negative significant of 0.006% on day 2 and continued negative returns over the 13 days after the deal made shows that after the completion of the M&A activity the abnormal return reduces which led one to believe that the stock performance of acquiring companies in short-term does not create value.

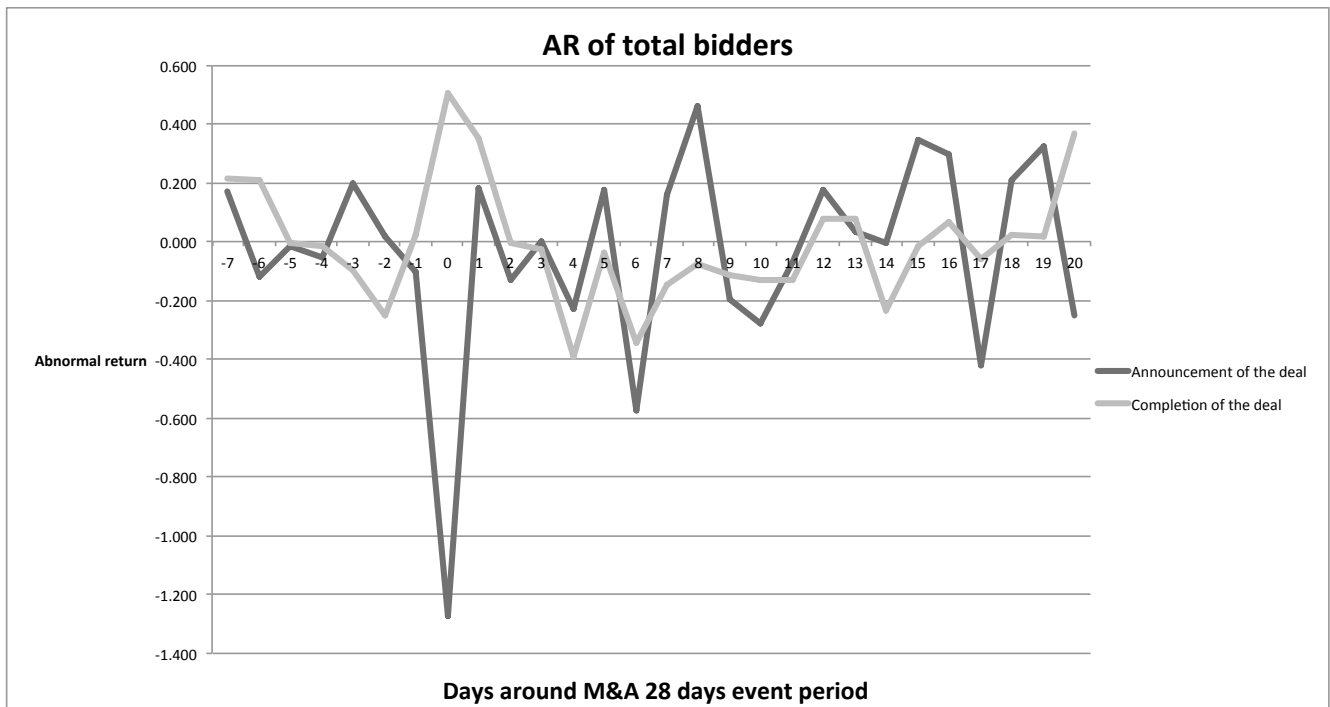
The differences in abnormal return when the event window decreases to 5 days prior to the merger announcement period is another factor that we will look into. Table 4 shows that the abnormal return is essentially positively higher. In other words, the abnormal return is significant negative of -1.280 (t=-3.56) on day 0 which then increases as the days goes to a return of 0.220 significance in day +2 day (with a t-statistic of 0.64). While on the completed day the AR show positive returns over the 4 days around the event day with a significant positive return of 0. 514 from day 0 (with a t-statistic of 2.2) to an insignificant return of 0.030 (with a t-statistic of 0.09) on the last day.

Table 4	Announcement of the deal with 5			Completion of the deal with 5			
	Days	% AR	t-statistic	Sign.level	% AR	t-statistic	Sign.level
	-2	0.027	0.46		0.278	-1.06	
	-1	-0.017	-0.08		0.246	1.09	1%
	0	-1.280	-3.56	1%	0.514	2.2	5%
	1	0.220	0.64	5%	0.323	1.35	
	2	0.016	0.67		0.030	0.09	

If one uses Table 4 AR results to assess shareholders' return around the event period one can see that, investors who would buy shares in the firms 1 day before to the public announcement and sell them on announcement day would lose a significant abnormal return of -1.280% with a t-statistic of -3.56. However, if they sold their shares 1 day after, the significant abnormal return would be 0.220%. On the other hand, if investors would buy shares 1 day before to the public announcement of the completion of the deal and sell them on the day of completion, they would have earned a significant abnormal return of 0.514% with a t-statistic of 2.20. However, it is always open for discussion whether the trade is based on speculation or inside information.

Figure 2, shows the overall AR over the announcements. From day -7 to +20 the AR have an up and down trend around the announcement and completed day. Information leakage may be why one can see a greater upward movement of AR before the announcement. At the announcement, the market starts to respond to the news as the theory of market efficiency expresses. One of the observations is that most of the ARs lie below zero around the announcement but lie above zero around the completed day. The conclusion is that merger and acquisition firms' lead to a negative effect on shareholders' wealth of acquirer but a more positive effect on completion of the deal.

Figure 2



#### 4.2 Result of Firm size and Deal characteristics

In this section, we first examine whether the cumulated announcement return behavior can be explain by the size effect. Last we examine whether the bidders method of payment influence the abnormal returns after acquisitions by estimate regression separately for small and large firms.

#### 4.2.1 Cumulative return; Firm and Deal characteristics

Table 5

%	Large (1)	Small (2)	Difference (1)-(2)
CAR	0.89	2.69*	-0.91*

Announcement of CAR sorted by acquirer size. The sample consists of 100 acquiring listed companies between the periods of 1989 to 2011 with transaction value is at least 1 million. Small (large) firms are defined as being equal or smaller (larger) than the 25<sup>th</sup> percentile of NYSE firms at that year. Relative size is defined as the value of transaction divided by the market value of equity.

Table 5 shows that shareholders from small firms generate a significant positive return of 2.690% while shareholders from larger firms have a return of 0.89%. The reason for this could be due to the fact that smaller firms possibly having it simpler to use the new capital provided for them after the acquisition. Also due to small firms being smaller than large firms, any announcement or significant performance will show more on them than for larger firms, which need to have a much bigger achievement to shock their stock performance. In other words, the firms' reason for M&A activity could be less of benefiting the managers themselves and more of maximize the firms' performances and shareholders' value (Less hubris, more managerial control).

By looking at deal characteristics, the findings in Table 6 show that cash payment bids have a significant cumulated abnormal return higher than the stock (2.392% and 1.251%), which follow the signaling hypothesis. The signaling hypothesis states that cash payment deals are seen as a good deal due to it not revealing of the bidders' true value therefore the cumulated abnormal return for cash offered bidding firms shareholders will be higher than for stock offered bidding firms.

Table 6

CAR	%	T- statistics
<i>Panel A: Deal characteristics</i>		
Cash	2.392**	1.37
Stock	1.251	0.60
Mix	-2.233***	-2.40
Relative size	0.202	0.85

One can argue whether the payments with stock in deals could be one of many reasons of unsuccessful mergers and acquisitions. While both of the two payment methods still give positive abnormal return, paying deals with a mixture of the two payment methods could lead to a negative bidders' shareholders return of -2.23%. This suggests that an acquirer should choose a payment method that is beneficial to shareholders and not only managers. Since the relative size variable is positive insignificant, it demonstrates that there is a positive relationship between the bidder's return and bidder size.

By linking the method of finance to size effect on table 7 one could notice that bidders paying deals with cash do acquire higher cumulated abnormal return, however when testing the returns using size effect the analysis will differ. The study found that large and small firms had and cumulated return of 0.254% and 0.543% (significant) for acquisitions paid with cash and 0.544% and 2.537% for payments equity. So in contract, the result of cumulative abnormal return for bidders shareholders firms does reduce when it is financed with equity which makes the study consistent with the monitoring and agency problem theory, which suggests that the incentives to monitor increase with the large shareholder's stake.

Table 7 %	Large (-1)	Small (-2)	Difference (1)-(2)
Cash	0.254	0.543**	-0.289*
Stock	0.544	2.537	-1.993
mix	-0.150*	1.498	-1.648*

If large acquirers are affected by hubris, there will be a negative correlation between size and abnormal return, suggesting that hubris might be relevant for large size firms because their managers are more overconfident which overpay (Asquith,1983). Meanwhile acquisitions paid with mix payment method (stock+cash) have a negative relationship with CAR of being -0.150%(significant) for large firms but a more positive difference of 1.648% for small firms. In other words, small firms have possible abnormal return more for each type of financial methods while large firms have a negative abnormal return when paying with a mix method.

### 4.3 Operating Performance of M&A active acquiring firms

The figures of the study represent in table 8 represent the operating performance of M&A firms in a quarterly base. The table shows the difference pair test used when testing the six financial ratios. Most of the ratios do improve after merger but statistically significant which tells us that mergers and acquisition deals do improve companies' performance. In case of the leverage ratios, such as debt ratio, it reduced significantly in the post merger quarter period from being 0.0189 to -0.0109. The leverage ratio shows that the deals actually helps the performances of the firms, to rely less on debt financing after mergers than before which might be the reason for the increase profitability. Long-term profitability of firm is closely associated with the



growth in productive opportunity of the firm. As the current assets show a significant of 0.0047 and total asset increased from -0.0256 to 0.0085 with statically insignificant.

Table 8

Financial Ratios	Paired difference test for 50 of the M&A firms		
	Mean	t value	Sign.Level
Pre M&A Current ratio	-0.1295	-2.1869	5%
Pre M&A Total assets turnover	-0.0256	-5.5201	1%
Pre M&A EBITDA	1.9613	2.4889	1%
Pre Gross profit margin	-0.0144	-3.3557	1%
Pre ROA	-0.0028	-4.3964	1%
Pre Debt ratio	0.0189	1.3340	
Post M&A Current ratio	-0.0368	-0.7540	
Post M&A Total assets turnover	0.0085	1.5797	
Post M&A EBITDA	-1.7240	-2.1067	5%
Post Gross profit margin	0.0047	0.7271	
Post ROA	0.0006	0.3799	
Post Debt ratio	-0.0109	-1.8186	

Note:  $P > |t|$  if the p-value is less than 0,05, 0,001, 0,01 then null hypothesis is equals zero is not rejected

In this case, the many reasons to merge and acquire such as lower debts and higher gross profit are showing in this study, which tells us that many companies might achieve efficiency as they wished. If one looks at the profitability ratios such as ROA and gross profit, one can see that the profitability has increased during the post merger period, but with an insignificant value. Nevertheless, one ratio does not show an improvement in performances is EBITDA with a significant positive pre-merged ratio of 1.9613 but creates a significant negative post-merged ratio of -1.7240.

The financial indicators reveal that mergers and acquisition in different industries between 1998 and 2011 did achieve significant improvement during their post-mergers period, which shows that the theories of positive performance after deals sometimes do transpire. One of the reasons for mergers and acquisition was just to create profitability, which in this by looking at the established table above been achieved.

As discussed above, agency theory is one of the major reasons why deals often do not succeed. According to Ang et al (2000), agency costs can be measured by looking at asset turnover ratios. By using this thought, the small positive change in post-M&A assets turnover ratios in the table suggest a higher agency cost result from conflicts between managers and shareholders, which therefore would lead to a lower acquirer return as Humphery-Jenner & Powell (2011) suggested.

## **5. Summary**

This study investigated the impact of mergers and acquisition activities on a short run stock return performance in different industries. The paper analysed the performance of American acquiring firms during the announcement and complete activity in using the AR and CAR measurement created by the market model. The study led to a negative performance around announcement of the deal with a more fluctuation AR after the announcement, while a positive abnormal return around complete date but constant negative returns after the announcement.

The result of the previous studies do differ in some ways, first the abnormal return for bidders are not positive on the announcement for bidding firms in this study than in

previous studies. However, these figures are close to that of Asquith et al (1983) study, which analyse the mergers and acquisition between U.S. firms and report a negative abnormal return around event period. On average, mergers are seen as being somewhat not profitable in the sense that gains are not capitalized and that shareholders do not receive maximized return and create value. However, the lacks of insignificant of result makes one believe that the larger proportion of the gain goes to the target rather than the bidder firm (Gagnon et al, 1982). Consequently, the empirical evidence produced in this paper suggests that in American M&A active companies' stocks between 1998 and 2011 do not reacts to merger announcements like it does in the other studies, and not even when the event window is lower such as 5 days.

When it comes to the operating performance, the indicators revealed that 100 acquirer companies in U.S. between 1989 and 2011 do sometimes achieve significant improvement after the first quarterly period. It gives the impression that the profit is might be generated each time. The combined means of the quarterly post merge results reveals that some companies perform insignificantly better while others show significantly decrease. The post merge profitability variables (ROA, gross profit) showed both insignificant positive performances during the post merger period.

Lastly, I investigated cumulated returns following acquisitions by small and large firms. The study showed that small firms' shares do fairly perform better than large firms. Overall the cumulated abnormal return exceeded the performance of large firms. When it comes to the methods of payments, it seems that cash deals receive higher cumulated returns than stock perhaps because of signaling. Significant different result came from the variables of mix methods, which gives us a negative cumulative abnormal return.

The regression analysis indicates that the relationship between the bidder firm's cumulated abnormal return and relative firm size is positive with some statistically significant. These results do give us any striking answer evidence that cumulative cumulated abnormal return is related to the size effect and deal characteristics.

Finally, to summarize the answers to the research questions above, one can positively say that the performances of acquirers are steady. The performances flutes more in terms of stock prices performance but gives us a more steadily performance with long term accounting performances.

## **6. Implication, limitations and further recommendation.**

Even though the study provided some significant result, there are some further recommendations that might create a more reliable and valuable study. For example, it must be mentioned that this study specifically focused on acquiring companies and did not consider the abnormal return performance of the target companies. According to Loughran & Vjih (1997), target companies do create more value than acquiring companies. They discuss the possibility of target companies' shareholder earning higher return than acquiring shareholders. This is an explanation of synergy and the overexcitement of the activity. Consequently, by including target companies in the study, one can investigate whether there is a shared efficiency between target and acquisitions. Also, due to the smaller sample size, the study might not be able to control significant results for different type of merger and acquisitions, which likewise could have an effect on the result on the study.

Based on studies such as Shleifer and Vishny (2001) to acquire a non-public firm creates more value than a public firm. Others also argue that there should not be any difference whether acquiring a public or private target. However, it could be that the gain in efficiency comes from the better price in the non-public target due to the difference in the market itself. Having said that, this study does not examine how long target firms have been public, and so cannot investigate whether it makes a difference in the acquiring returns if target firms been recently public or not. Field and Mulherin's (1999) examination of recent and non-established public target firms showed that both acquirer and target firms have similar returns when acquirers do deals with them.

It must also be considered that this study is a short-run performance measurement, which cannot be a good estimator of a long-term view. In other words, this study only shows the stock and operating performance in a short period, which of course do not necessarily holds in a longer period. That is why a long-term measurement of stock and operating performance would probably give a broader view of how acquiring companies performs in longer period such as months or even years. However, as Barber & Lyon (1997) and Kothari & Warner (1997; 2004) point out, there are major problems related to the long-term studies, which must carefully be taken into consideration in order to generate an unbiased study with no errors.

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## APPENDEX

### Merger and Acquisition deals between period 1989 -2008

Bidder Firm	Target Firm	Year of Announcement
ADOBE SYSTEMS INC	MACROMEDIA INC	2005
AGILENT TECHNOLOGIES INC	VARIAN INC	2009
ALBEMARLE CORP	SORBER TECHNOLOGIES	2008
ALLERGAN INC	INAMED CORP	2005
ALLIANT TECHSYSTEMS INC	MISSION REASERCH CORPORATION	2004
ALTRIA GROUP INC	JOHN MIDDLETON INC	2007
AMEREN CORP	NRG ENERGY INC GAS	2005
AMERICAN TOWER CORP	SPECTRASITE INC	2005
AMERIPRISE FINANCIAL INC	BLOCK H & R INC	2008
AMGEN INC	ILYPSA INC	2007
AMPHENOL CORP	ULTRAMAR DIAMOND SHAMROCK	2005
ASHLAND INC	HERCULES INC	2008
BANK OF AMERICA CORP	FLEETBOSTON FINANCIAL CORP	2003
BANK OF NEW YORK MELLON CORP	MELLON FINANCIAL CORP	2006
BENCHMARK ELECTRONICS INC	PEMSTAR INC	2006
BLACK HILLS CORP	AQUILA INC	2007
BOSTON SCIENTIFIC CORP	GUIDANT CORP	2005
BRISTOL-MYERS SQUIBB CO	MEDAREX INC	2009
BROCADE COMMUNICATIONS SYS	FOUNDRY NETWORKS INC	2008
ARROW ELETRONICS INC	KEYLINK SYSTEMS GROUP	2007

CA INC	NIMSOFIT INC	2010
CAPITAL ONE FINANCIAL CORP	NORTH FORK BANCORPORATION	2006
CELGENE CORP	PHARMION CORP	2007
CENTURYLINK INC	EMBARQ CORP	2008
CENVEO INC	NASHUA CORP	2009
CHARLES RIVER LABS INTL INC	INVERESK RESEARCH GROUP INC	2004
CHEVRON CORP	UNOCAL CORP	2005
CHIQUITA BRANDS INTL INC	FRESH EXPRESS CO	2005
CITIGROUP INC	TXU CO	2007
AVNET	MEMECGROUP HOLDING	2005
BAXTER INTERNATIONAL INC	ARCEMIX CORP	2010
COMPUTER SCIENCE	DATATRAC	2007
CVS CAREMARK CORP	LONGS DRUG STORES CORP	2008
DELTA AIR LINES INC	COMAIR HOLDINGS INC	1999
DISNEY (WALT) CO	PIXAR	2006
DOW CHEMICAL	ROHM AND HAAS CO	2008
BB&T CORP	FIRST CITIZENS BANCORP	2006
DUKE REALTY CORP	WEEKS CORP	1999
E M C CORP	VMARE	2003
EBAY INC	PAYPAL INC	2002
CITY NATIONAL CORPORATION	BUSINESS BANK CORP	2006
EQUITY ONE INC	IRT PROPERTY CO	2002
EXXON MOBIL CORP	XTO ENERGY	2009
FEDEX CORP	PARCEL DIRECT	2004
EATON	AT HOLDING CORP	2006
FIRSTENERGY CORP	GPU INC	2000
FISERV INC	CHECKFREE CORP	2007

GAMESTOP CORP	IMPULSE INC	2010
GENERAL DYNAMICS CORP	ANTEON INTERNATIONAL CORP	2005
EASTMAN CHEMICAL CO	GENOVIQUE SPECIALIIES CORP	2010
HARSCO CORP	EXCELL MATERIALS INC	2007
GILEAD SCIENCES INC	CV THERAPEUTICS INC	2009
GOODRICH CORP	RAYTHEON CO	2000
GREAT PLAINS ENERGY INC	AQUILA INC	2007
HAIN CELESTIAL GROUP INC	AVALON NATURAL PRODUCTS	2006
HERCULES OFFSHORE INC	TODCO	2007
HEWLETT-PACKARD CO	MERCURY GENERAL CORP	2006
HOME DEPOT INC	HUGHES SUPPLY INC	2006
JARDEN CORP	HOLMES GROUP INC	2005
JDS UNIPHASE CORP	PICOLIGHT INC	2007
JOHNSON CONTROLS INC	YORK INTERNATIONAL CORP	2005
KELLOGG CO	BEAR NAKED INC	2007
KIMCO REALTY CORP	MID-ATLANTIC REALTY TRUST	2003
LEE ENTERPRISES INC	PULITER INC	2005
LEVEL 3 COMMUNICATIONS INC	TELCOVE	2006
LIBERTY PROPERTY TRUST	REPUBLIC PROPERTY TRUST	2007
LIGAND PHARMACEUTICAL INC	METABASIS THERAPEUTICS INC	2009
LILLY (ELI) & CO	IMCLONE SYSTEMS INC	2008
LINCOLN NATIONAL CORP	JEFFESON-PILOT	2005
MCCLATCHY CO -CL A	KNIGHT-RIDDER INC	2006
MEDTRONIC INC	KYPHON INC	2007
MOLEX INC	WOODHEAD INDUSTRIES INC	2006
MONSANTO CO	DELTA & PINE LAND CO	2006
NEWS CORP	DOW JONES & CO INC	2007

NRG ENERGY INC	GREEN MOUNTAIN ENERGY	2010
OCCIDENTAL PETROLEUM CORP	VINTAGE PETROLEUM INC	2005
HUMANA INC	CAREPLUS HEALTH PLANS	2004
OLD REPUBLIC INTL CORP	MGIC INVESTMENT CORP	2007
OM GROUP INC	ROCKWOOD HOLDINGS INC	2007
ORACLE CORP	SIEBEL SYSTEMS INC	2005
OSHKOSH CORP	JLG INDUSTRIES INC	2006
PFIZER INC	PHARMACIA CORP	2002
PILGRIM'S PRIDE CORP	GOLD KIST INC	2006
INTEL CORP	WIND RIVER SYSTEMS NC	2009
REGIONS FINANCIAL CORP	AMSOUTH BANCROP	2006
REPUBLIC SERVICE	ALLIED WASTE INDUSTRIES INC	2008
IBM CORP	FILENET CORP	2006
SEMPRA ENERGY	ENERGYSOUTH INC	2008
SPRINT NEXTEL CORP	NEXTEL COMMUNICATIONS INC	2004
STATE STREET CORP	INVESTORS FINANCIAL	2007
TELEFLEX INC	ARROW INTERNATIONAL INC	2007
TIBCO SOFTWARE INC	TALARIAN CORP	2002
TITAN CORP	BTG INC	2001
UNITEDHEALTH GROUP INC	PACIFICARE HEALTH SYSTEMS	2005
URS	WACHINGTON GROUP INT	2007
VALERO ENERGY CORP	PREMCOR INC	2005
WATSON PHARMACEUTICALS INC	ANDRX CORP	2006
WELLPOINT INC	WELLCHOICE INC	2005
WELLS FARGO & CO	WACHOVIA CORP	2008
WEYERHAEUSER CO	WILLAMETTE INDUSTRIES	2000
XEROX CORP	GLOBAL IMAGING SYSTEMS	2007

