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University of Nottingham

Does Mergers And Acquisition Improve Performance?

Zhuqiang ZHONG

A Dissertation presented in part consideration for the degree of M.Sc. Finance and Investment

Nottingham University
Business School

UNITED KINGDOM · CHINA · MALAYSIA

Does Mergers And Acquisition Improve Performance?

By

Zhuqiang ZHONG

2013

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Abstract

Merger and acquisition is an important way for companies to expand market share, obtain greater market power and set up new disciplines. Generally, people believe that merger and acquisition would bring benefit from the acquirer as the managers of acquirers are assumed make rational decisions. However, previous studies have shown that acquirers may not benefit from merger. Researchers conduct studies on merger performance from various prospective in order to explain the post merger performance of the target or acquirer. For example, some of them focus on the relationship between the payment method and merger performance. Some of them focus on the industry relevance while some may believe the initial share in target may affect post merger performance. In this dissertation, we are going to analysis the merger performance in a different way. We will use event study method to find out the relationship between the merger performance and the way of merger, takeover and tender offer.

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Chapter 1: Introduction

Merger and acquisitions are popular and have important impacts due to the large amount and size of deal. It has influence on the stakeholders such as acquirer, target, shareholder, intermediary agencies and regulatory agencies. Researches in mergers and acquisitions have been developed for over five decade in USA and Europe. One of the most important issues in this area is that whether acquirer and target gain from M&A. Most of the findings on this issue were based on the data from twenty years ago. Therefore, in this dissertation, we are going to focus on the USA M&A performance.

1.1 Purpose of Study

Past studies has found positive return for target firm shareholder while the acquirer shareholder's return are remain unclear. Jarrell and Poulsen (1989) conducted a study on 526 companies involved in tender offer deal about between 1963-1986 and found out that there is positive return for target companies in tender offer deal.

Bradley (1980) found that shareholders of acquirer have positive return on tender offer deal as well. Asquith, Bruner and Mullins examined 170 companies, which are involved in takeover deal, and found out that there is positive return for acquirers. Kaplan and Weisbach (1992) examined 271 companies involved in takeover deal between 1971 and 1982 found out that there is negative return to acquirers. (Bruner,2002). Jensen and Ruback (1983) states that synergy is the major motivation for mergers and acquisitions.

1.2 Terminology and Concepts

Mergers generally refers to two companies consolidate into one company. It is a combination of business. The acquired firm no longer existed after the merger. Consolidation is similar to merger, both of the target and the acquirer firm become a part of the new firm. Acquisition means one company purchased and owned other company while there is no new company founded. A tender offer is a public offering made by acquirer to all shareholders of target company, which is normally a public company, about tender their stock for a specific price over a specific period. In a tender offer, the acquirer contacts the target shareholder directly. The management team may not have information or control about the deal. A takeover is the transformation of control from one company's shareholders to other company. It can be realized using proxy contest and privatization.

Brealey and Myers (2004) and Gaughan (2002) divide mergers and acquisition into three categories:

1) Horizontal mergers and acquisitions

   It is the combination between two companies, which are in the same industry. For example, the combination of Bank of American and Merrill Lynch. The major reason for M&A in similar business is to obtain synergy between two companies. Besides, merger and acquisition is also a way to increase market power, diversify services, achieve economic of scale. The competition degree of a industry is increased by the horizontal M&A activities. Consumers will benefit from the increased competition according to economic theory.

2) Vertical mergers and acquisitions

It is a combination of two companies, which are processing different stage of certain products or services within the same industry. There are two ways of vertical mergers and acquisitions: 1) Forward M&A. When a company buys it product distributor, in the direction of target consumers, it is called forward M&A. Acquirer can benefit from reduced marketing and delivering cost. 2) Backward M&A. When a manufacturer acquires its material supplier in order to reduce the production cost, it is called backward M&A.

3) Conglomerate mergers and acquisitions

It is the mergers and acquisitions between companies from unrelated industries. They are neither competitor nor related business partner to each other. The main reason why this type of mergers and acquisitions will happen is that it is an efficient way of allocating capital and the management team is unwilling to distribute cash to shareholders. Companies can enter a new emerging market using this type of acquisition. (Marks and Mirvis, 1998)

4) Concentric

The area, where the target firm is in, is where the acquirer interested to expand to, however unfamiliar with. The mergers and acquisitions between these companies are called concentric. For example, Facebook. Inc acquires Instagram.

Other key terms in M&A literature are:

Acquirer: A company planed to takeover another company. They are also called bidder.

Target: A company being acquired by the bidder.

Announcement date: It is the day that the M&A information become public information in event study.

1.3 Plan of Dissertation

The remaining part of this dissertation is showed as following.

The next chapter, Chapter 2, is the literature review. In this chapter, we are going to summarize past studies of mergers and acquisition area in different aspects. Chapter 3 is design the overview of mergers and acquisition waves in USA and Europe. The detail of data collection and event study method will be explained in Chapter 4. The analysis of empirical results of the effect of different type of M&A on shareholders' wealth will be showed in Chapter 5. Chapter 6 concludes our research result and shortcoming of current study.

Chapter 2: Literature review

2. 1 Why companies choose mergers and acquisitions?

The reason for acquiring can be divided into four categories: Value creation, managerial self-interest, environmental factor and firm characteristics.

2.1.1 Value creation.

2.1.1.1 Market power.

It may be considered as an attempt to extract more value from customers. Financial literature was the first to study the market power hypothesis.by examining rival firms' stock price reaction to horizontal mergers. Some scholar believes that there is no supporting evidence for market power as an acquisition antecendent. (Eckbo, 1983; Stillman, 1983) Some economist argued that, as the rivals studied were larger firms with multiproduct, only a small percentage of their revenue were influenced by the market and that the sample period examined has highly restricted antitrust regulation. Prager (1992) conducted a study on market power hypothesis using the same methodology on a period with antitrust laws and diversified firms. He found that the share price of the rivals of railroad industry increased in the announcement week. This evidence supports for market power hypothesis.(Prager,1992) Kim and Singal's (1993) study shows that in 1980s airline mergers, the merging firms increased their price on their route while other companies that is not effected by the merger, remain the same. Therefore, there is some evidence stands for market power as an acquisition motive.

2.1.1.2 Efficiency

Economists also conduct studies on whether acquisitions are motivated by the desire to reduce cost. Banerjee and Eckard (1998) found that the market drive up horizontal mergers during the first merger wave. Moreover, scholars found that mergers can improve long-term plant productivity (McGuckin and Nguyen, 1995) and public accounting service delivery (Banker,

Chang, & Cunningham, 2003). However, all evidence is not very straightforward. Klein (2001) found that the if a conglomerate company is in a late period, the diversification is discounted. However, contrary to prior work implying inefficiency in 1960s conglomeration (e.g., P. Berger & Ofek, 1995; Jensen & Ruback, 1983; Kaplan & Weisbach, 1992), Klein reported a premium for late-1960s acquisitions, supporting the efficiency motive for unrelated acquisitions during early yet not later periods.

2.1.1.3 Resource reallocation

Horizontal acquisitions normally led to signify resource reallocation between acquirers and target. (Capron, Dussauge, and Mitchell, 1998) King, Slotegraaf, and Kesner (2008)'s study shows that the abnormal return of acquirer is influenced by the degree of acquirer and target firm resource complementarity. Karim and Mitchell (2000) state that the resource of acquirers has greater changes than those non-acquirers. Moreover, merger may be a way of innovation. Puranam and Srikanth (2007) shows that the acquirers can absorb the target company's innovation resource by either integrating those resources with them or leverage the innovative ability of the firm as an independent unit. This result is in consistent with Lubatkin, Schulze, Mainkar and Cotterill's (2001) research that market position and resources of firm involved M&A deal effect the future product market performance.

2.1.1.4 Market discipline

Research in finance indicates that the acquisitions can be used to discipline the ineffective managers in order to enhance the company value. Agency theorists believed that acquisitions

could protect shareholder from poor management. (Jensen, 1986; Jensen & Ruback, 1983). Agrawal and Walking's (1994) research shows that the compensation of the of target company manager who received overpaid compensation before the merger is reduced after the deal is completed. Their research implies an market discipline hypothesis assumptions that companies with poor corporate governance will lead to low market value and will be taken over by higher value acquirers. However, Rhodes-Kropf and Robinson (2008) states that firms with similar value will tend to merger with each other. Wang and Zajac (2007) found that firms with similar resources prefer an acquisition rather than an alliance. '

2.1.2 Managerial Self-interest (value destruction)

2.1.2.1 Compensations

Researcher has prove that there is important linked between compensation, ownership and acquisitive behavior. Agrawal and Walkling (1994) shows that industries with higher CEO compensation normally more interested in active acquisition. The stock option of acquiring CEO (Sanders, 2001) and director (Deutsch, Keil, & Laamanen, 2007) has a positive relationship with mergers and acquisition activities. The compensation of the CEOs of acquirers normally increased after the acquisition, Moreover, managing large firms can increase CEO discretion and power, therefore it can protect manager and reduced the employment risk. (e.g., Gomez-Mejia & Wiseman, 1997; Haleblian & Finkelstein, 1993; Hambrick & Finkelstein, 1987). In general, acquisitions may be too attractive to CEOs than it should be.

2.1.2.2 Managerial hubris

Past studies have shown that managerial confidence may also increase merger behavior. Roll (1986) was the first to introduce the CEO hubris, over self-confidence, as acquisition motive. Hayward and Hambrick's (1997) research is in accordance with this study, they found out that CEO's over confidence increases acquisition premiums, on the other hand deceased acquisition performance. Overconfident CEOs will overestimate their ability to generate returns. (Malmendier and Tate, 2008)

2.1.2.3 Target defense tactics

Some argue that this tactic is used to protect managers' benefit at the cost of shareholder wealth. Field and Karpoff (2002) found that the strategies used by IPO managers ahs negative relationship with the possibility of subsequent acquisition. However, Bates and Lemmon (2003) states that target payable fee led to higher deal completion rates and greater takeover premiums. They indicate that homogeneous effect does not exist in defense tactics. The illiquid stock owned by target CEOs has a positive relationship with the possibility of being acquired. Cai and Vijh (2007)

2.1.3 Environment Factors

2.1.3.1 Environmental uncertainty and regulation

Researchers have being trying to find out the relationship between environment and strategy motivated acquisition behavior. Folta's (1998) research has shown that although uncertainty

of environment can increase the possibility of collaboration over acquisition, it also increase the possibility of acquisition over licensing agreements. (Schilling & Steensma, 2002) Highly diversified companies prefer to perform acquisition in stable environment while less diversified companies do it the other way round. (Bergh and Lawsless, 1998) Some researcher find out that external governance structure may also influence acquisition possibilities. Matsusaka (1996) found that antitrust law did not seem to hinder acquisitions. Moreover, M&A activities in countries with higher accounting standard and stricter shareholder protecting regulations seems to be more active than those counterparts. (Rossi and Volpin, 2004) recent work shows that due to the regulation on sin industries, companies are trying to gain political influence through domestic expansion in order to offset the cost of such regulations. (Banish, Jansen, Lewis, & Stuart, 2008).

2.1.3.2 Imitation and resource dependence

Pfeffer (1972) shows that firms obtain resource dependencies by absorbing firms with need resources. However, Finkelstein (1997) states that the strength of this connection was weaker than originally found. In interindustry mergers, the power imbalance between two firms is the obstacle to the merger although the interdependency between two firms is the key driver of acquisition behavior.

2.1.3.3 Network ties

Granovetter (1973) originally developed the network ties research. Haunschild (1993) states that if there were interlocking directorship between two or more than two firms, managers of

these firm would tend to imitate the merger activities of each other. The changes in the merger activities of these firms had significant positive effects on changes in focal firm acquisition activities. (Westphal, Seidel, and Stewart, 2001) Their research explains one of the important reasons of merger is the managers' desire to realize peer isomorphism.

2.1.4 Firm Characteristic

2.1.4.1. Acquisition experience

In general, recent acquisition experience is positively related to succeeding acquisition possibilities, especially when there is signify performance improvement. (Haleblian, Kim, & Rajagopalan, 2006) However, other studies found out that he acquisition experience would increase the possibility of succeeding mergers of the same type (e.g. horizontal, vertical,) (Amburgey and Miner, 1992) while the possibility of mergers of any different types will decrease. (Yang and Hyland, 2006) Baum, Li and Usher (2000) companies acquired would tend to acquire other firm with similar organization structure and geographic location as their most recent mergers. Vanhavebeke, Duyster and Noorderhaven (2002) states that previous alliance experience increased the likelihood of one partner acquiring the other, highlighting the influence of experience, in general, on acquisition behavior.

2.1.4.2 Firm strategy and position

Firm strategy and position may have strong influence on merger activities. Companies with global plan have higher percentage of greenfield subsidiaries than multidomestic. Companies

with multidomestic strategy have a higher proportion of mergers. (Harzing, 2002) Moreover, the targets are confront with difficult strategic hurdles are more likely to be acquired than those without this kind of hurdles. (Graebner and Eisenhardt, 2004)

2.2 Merger and Acquisition Performance

The theoretical research mainly focuses on whether mergers and acquisition generate value, whom benefits from mergers and acquisitions and how mergers and acquisitions generate value when discussing whether mergers and acquisitions improves performance. Meeks (1997), Mueller (1980), Ravenscraft and Schere (1987) etc., had different results about the mergers and acquisition performance study.

Regarding whether mergers and acquisition improve performance, scholars had the following findings. In the 1960's, most of the scholars who are interested in this area are micro economists. Their study shows that the financial income was close to zero or even negative. In the 1970's, micro-finance economists analysis this topic using even study method with efficient market hypothesis. Their study shows that shareholders' overall welfare was positive. The shareholders of target firms have a significant positive and steady return while the shareholders of acquirers has a insignificant small return. (Jarrell, Gregg, and Annette Poulsen, 1989) Salter and Weinhold (1979) classified mergers and acquisitions into relevant M&A ad non-relevant M&A according to correlation of their strategies. They used event study to compare the relevant M&A with the non-relevant M&A. their results shows that relevant

mergers and acquisitions generates more value the non-relevant mergers and acquisition. Ghosh (2001) and Linn & Switer (2001) found out that there is no significant difference between relevant M&A and non-relevant M&A in generating value for shareholders and realizing synergy. Agrawall, Jaffe and Mandelker (1992) found out that non-relevant mergers and acquisition shows that the non-relevant M&As generates higher return than relevant mergers and acquisition.

Generally, people may think that as the acquirers rationally start the merger and acquisition, their shareholders should be the one who benefit from the merger and acquisition deal. However, evidences show different results. Scholar used various methods such as event study, accounting research method and so on to analysis the long term performance and short term performance of mergers and acquisition. They generally agreed that mergers and acquisition brings positive over all return and generates value, but target and acquirer individually has different return on a M&A deal. M&A brings significant positive abnormal return and a high price premium for the shareholders of target companies while the share value of the acquirer barely change and in long term, M&A generally brings negative cumulative abnormal return for shareholders of acquirer. (Gao, Y.S., 2004)

In the way of how M&A generates value, theorists and participations both agreed that mergers and acquisition mainly generate value through restructuring and synergy effect. Restructuring refers to the acquirer make profit from selling certain departments of target firm to better buyers. That is the M&A value mainly generated by the target firm. Synergy refers to through collaborating different resources, such as market data, intellectual properties, equipment etc.,

from both sides to generate value. Buono, Bowditch and Lewis (1985) states that the management difference may be the reason why a merger deal can not achieve its target is that there is different. Case studies conducted by Callahan (1986), Lipton(1982) and Rapport (1982) also show that the difference in management style and working values can cause a lot of problem during integration. Datta (1991)'s empirical study shows that the difference in management style has negative effect on the post-M&A performance. Haspeslagh and Farquhar (1987) analyzed the merger process from two divisions: the dependence of their strategy and the demand of organization independence. From those successful cases, they concluded that there are four typical process forms post-M&A integration: Absorb, symbiosis, protection and control. Briginshaw, Bresman and Hakanson (2000) analyzed the integrating process of the research and development department of three multinational Sweden companies. They used two divisions: task integration and human resource integration and found out that there are two stages of integrating process.

The payment way has influence on the control power and the post-M&A organization structure. There are two major ways of payment: cash payment and stock payment. Different payment method has different impact on the shareholders' return. Eckbo (1983) believed that merger is a good way of tax avoidance and proposed the idea of tax synergy. In his theory, using stock payment can be a good way of deferring tax for target company's shareholder and substitute for some taxes, which will benefit the shareholders of target company. Acquirer can increase its asset when using cash payment, it can increase the depreciation rate, and therefore the acquirer is willing to pay at a higher price. Leland and Pyle (1977), Myers and Majluf

(1984), Travlos (1987) and Louis (2002) agreed that management team will tends issue new stock to finance for new merger plan when they believe that the stock price is overvalued. Thus, the stock price may not be a good indicator to reflect merger information and stock price will decrease in long term. Rau and Vermaelen (1998) discovered that investors will have an impression that the stock price of acquirer is overvalued when using stock payment Therefore, when the deal is announced the stock price will decrease as investors has adjusted their expectation.

The empirical result shows the cash payment can generate more abnormal return than stock payment. (Gordon and Yagil, 1981) Linn & Switzer (2001) proved that the abnormal return of cash payment is higher from the target company prospective. However, Louis(2002) concluded that the long term abnormal return of acquirer is negative when using cash payment.

Some scholars believe that the merger and acquisition performance is related to the industry relevance of both sides. Kogut and Singh(1988) examined 203 M&A deals during 1970 and 1978. The result shows that as for acquirer, relevance M&A generate larger value than non-relevant M&A. Shelton (1988) had the similar conclusion that horizontal M&A and relevant M&A can generate high return. Industry relevance can be divided into four segments: 1) mixed and non-mixed 2) vertical, horizontal and mixed 3) level of overlap 4) change of corporate focus. Healy, Palepu and Ruback (1992) used the level of overlapping as criteria and found out that industries with higher level of overlapping have better performance than industries with lower level of overlapping. John and Ofek (1995) and Desai & Jain (1999)

discovered that long-term performance is significantly positive if companies improve corporate focus through selling non-core assets. Ghosh (2001) and Linn & Switzer (2001) found out that there is no significant positive relationship between corporate focus and long term performance. Agrawal, Jaffe and Mandelker (1992) states that the long term stock price level of a mixed M&A is higher than non-mixed M&As. Megginson, Morgan and Nail (2002) shows that the difference of sample, time horizon reason, control variable and research method is the why the above researches have different result. Therefore, they suggest that we should use Herfindahl Index to measure the change in industry relevance. They empirically examined 204 mergers and acquisition deals during 1997 and 1996. The result shows that there is a signify positive relationship between long-term M&A performance and change in corporate focus. In their theory, within three year after the merger and acquisition, every 10% decease in corporate focus will lead to 9% decrease in shareholders' wealth, 1% decrease in operating performance, 1.2% in operating cash flow and the market value will shrunk by 4%.

Companies can be divided into two types: growth stock and value stock. There is a classic theory, which describes the relationship of between these two types of stock and merger performance, called performance extrapolation hypothesis. This theory is supported by Franks, Harris and Titman (1991), Fama and French (1992) 's research. It believed that the majority of investor and other stakeholders evaluate the merger performance according to the past performance. People generally used price-to-book ratio as a measurement. Firms with high price-to-book ratio are classified as value stock and those with low price-to-book ratio are classified as growth stock. This theory states that 1) growth company has higher abnormal

return than value company during the announcement period due to the excessive expectation. 2) In long term, as the market will adjust the market value of the overvalued companies, therefore the abnormal return of value acquirer will be higher than growth acquirer. 3) The growth acquirer will pay more for price premium. Therefore, it believes that there is a negative relationship between price-to-book value and short-term performance and a positive relationship between price-to-book value and long term performance. In Lang, Stulz and Walkling (1991)'s test, they found that the return of the acquirer during the announcement period is positive related to Tobin's Q ratio. Anderson and Mandelker (1993) came to the same conclusion using price-to-book ratio to examined long term performance of 670 merger deals during 1966 and 1987. Rau and Vermalen (1998) testified banking industry samples and prove the second and the third statement of performance extrapolation hypothesis. They states that the abnormal return of growth companies is -17.3% three year after the merger while the abnormal return of value companies is 7.6%. However, Louis (2002)'s result shows that there is a positive relationship between price-to-book ratio and long term performance in banking industry. Excluding the banking industry, there is a insignificant result that long abnormal return of growth acquirer, -10.1%, is higher than value acquirer, -18.5%.

There is some theory focus on the relationship between the acquirer's initial share and merger performance. As before the announcement date, the acquirer is the only one that has internal information about the merger deal. Therefore, acquirer can buy target company's share from the market and set up a toehold percentage in order to push the target stock price to the deal price. Therefore, acquirer can gain more and improve performance. Kyle (1985), Shleifer and

Vishny (1986) found that the possibility of successful M&A and the acquirer's expected profit will increase if the acquirer's initial share in the target firm increases. However, Bradley (1988)'s research was against this result. His study believed that the profit generate from the initial share is no large enough to cover the merger cost and most of the acquirer do not own target companies' share when merging. There are two reasons: 1) As there is legal restriction, it is no possible to buy a large amount target firm's share secretly in the stock market. 2) When the transaction is not active in the market, buying a large amount of target companies' stock will expose the merger information to those investors who are seeking for undervalued stocks. The stock price will increase to the deal price and decreases the profit. Jenning (1991) found that only 15% of acquirer have initial share in target firm and the average initial share are very low, 3%. However, in deals with multiple bidder, the average initial share increased to 18%. Hay, Warren and Drager (2001) states that at the beginning of bidder period, it is easier for the acquirer to buy in target companies' share secretly.

2.3 Research method Literature Review

2.3.1 Event study

Normally event study is a research method applied to predict the financial gains and losses using financial market transaction data. (Sharma, 2010). "For instance, the announcement of a merger or acquisition between two banks can be analyzed to make predictions about the potential merger-related changes to the price of the service or product subject to the merger."

(Romans Tjurins, 2011) Using event study, we can know whether the return to shareholders changes during the period surrounding the announcement date of a merger and acquisition deal. It is an dominant financial research method in the area of mergers and acquisitions performance research.

Event study measures stock reaction to events. Price reaction is reflected by abnormal returns. Abnormal return is sometimes triggered by events, such as merger, dividend announcements, interest rate increases etc. It is stock returns adjusted for normal stock price and market index movements. Test statistics are used to identify whether to ascribe target abnormal returns to the event. Using event study, we need to start presume how certain event effects the value of a firm. The hypothesis that the value of the company has changed will be translated in the stock showing an abnormal return. (Romans Tjurins, 2011) The assumption that price is embedded with merger and acquisition information, the concept of abnormal return is the key of event study method.

Andrade, Mitchell and Stafford (2001) conducted a study on the relationship between merger reasons and long-term effect. This study includes relevant M&A data over 25 year and measures the value creation or destruction after mergers. Their event windows are surrounding the announcement date. They used three days for short period and 20 days for longer period. They found out that companies try to use merger as a way to create synergies, increase their market share and bargain power so that they can become a monopoly and set up new market disciplines. Their result shows that the abnormal return in longer windows period is 16% to 20% for target firms shareholders. During the post merger period, the combined

firm's value increased about 2% compared with the beginning of the merger.

Loughran and Vijh (1997) conducted a study on the relationship between the post acquisition returns and the payment method and acquisition type. Their samples are based on 947 M&A deals during 1970 and 1989. Within five year after the merger, companies merged using stock payment have a negative return of -25% while companies used cash payments obtained a significant positive excess return of 61.7%. Not all the shareholders of target companies can gain from mergers and acquisition.

Frank, Harris and Titman (1991) conduct a study on the share-price performance after the takeover. They studied on 399 U.S. takeover cases from 1975-1984. They results shows that there is a 28% average return for the target firm shareholder since announcement date, while shareholders of acquirers have neither gains nor losses. Merger and acquisition deal using cash payment generate more return to target than deals using a stocks or mixture of securities. Their result is in consistence with Jensen and Ruback (1983)'s study that the poor post-merger performance for acquirers may due to the benchmark errors rather than the mispricing. Equally weighted benchmark may cause poor post merger share-price performance, however in their research, there is a positive post merger performance when using value weighted benchmark.

2.3.2 Accounting Method

Accounting study uses financial data from financial statements of acquirer's pre and post merger period to measure the change in financial performance. Tools like return on equity,

return on assets, leverage, liquidity and earnings per share are generally used in this method to identify the difference in financial performance. The research purpose of these studies is to find out whether mergers and acquisitions able to provide a competitive advantage to the acquirer. (Bruner, 2002)

Ghosh (2001) attempt to find out whether the improvement of post merger operating performance is influenced by the payment method and how does mergers improve operating performance. His sample set includes all the M&A cases during 1981 and 1995. In order to find out whether mergers and acquisitions can improve operating performance, he compares merged company's pre and post merger operating cash flow performance. He took superior pre-acquisition performance, size and firm into account in order to have a surefire benchmark and avoid bias in the regression analysis. In his study, there is no evidence supporting that operating cash flow performance improves during the post acquisition period. However, Healy, Palepu and Ruback (1992) have an opposite result that there is a better cash flow performance after acquisition. In his study, he concludes that cash payment was better than the stock payment as it utilized the asset and provide better gain on wealth for both sides. A higher sale is the major reason for performance improvement. Dickerson, Gibson and Tsakalotos (1997)'s study tried to find out the difference in performance of company after the M&A and the changes in return. They examined 2491 firms, which took part in M&A in UK between 1948-1997. Their result is in accordance with Ghosh (2001)'s result, implying that acquisition did not improve the acquirer's profitability. Moreover, it has negative impact on the profitability few years after the M&A. a company is more likely to have a better

performance driven by the internal growth rather than the growth brought by mergers and acquisition. Berger and Ofek (1995) estimate the diversification effect on firm value. They impute individual values for difference business segments. Their research shows that the advantages, such as improved debt capacity, lower taxes, operating efficiency and synergy, realized at cost of transforming resources from segments with better performance to poor segments. Poor investment and negative net present value may be a result of diversification. Their result indicates that diversification reduced firm value. There is a average of value loss, 13%~15% over the 1986~1991 period among firms with any sizes. The loss is mitigated if the diversification is in related industries. Furthermore, they conclude that if the acquirer can have proper strategy on overinvestment and cross-subsidization, diversification can generate a small benefit in the form of increased debt capacity and tax shield. (Berger and Ofek, 1995)

Mueller (1980) examined merger and acquisition deals in USA and six European countries in order to find out the difference in their performance and profitability against three benchmarks, equity, asset and sales. The research shows that acquirers grow faster than their competitors. The main finding of this research is that there is a slight difference in returns between the acquirer and their competitors. Mergers generate a little improvement in performance and mergers generate small gains.

2.3.3 Clinical study

Clinical study is a inductive research method. Clinical study refers to use field interview with management team of the firm and observers with in depth understanding of related firm or

industry. It focuses on small samples in great depth. Scholars can have new insights by delve into detail and the undisclosed facts about a deal. It is good for finding new patterns. However, there are short shortcomings with this method. The results are not representative due to the small amount of sample and we are not able to conduct hypothesis testing. (Bruner, 2002)

Kaplan, Mitchell and Wruck (1997) examined the relationship between acquisition and company value. They try to find out if M&A generate or destroy value. They drilled into two merger and acquisition deals Cooper industry and Premark was individually involved and observed the market reaction to regarding to the deals. One of the deals has incremental effect on share value, while the other one decreases share value. They concluded that neither of the deals creates value, as there was not enough information about the target company and the application of inappropriate organizational designs on the target.

Chapter 3: Merger Wave Overview

The phenomenon that the merger activities burst out in a certain period is called merger wave. This description is not precise enough to describe a merger wave, but there is no widely accepted accurate definition or exact measurement of wave. Some researchers are focusing on the recognition and measurement of mergers and acquisition waves. In this dissertation, we are going to use direct observation to identify the burst on the mergers and acquisition.

3.1 The first wave (1983 to 1904)

This wave happened in the period of economic expansion of United States, followed with ten years of economic stagnation. The feature of this merger wave is that most of the mergers are horizontal mergers performed by the giant companies. They are called horizontal consolidation at that time. The majority of merger deals are happened in steel, telephone, oil, mining, railway and other infrastructure and transportation giants. The merger purpose during this period was for monopoly. The publishing of the antitrust law, which is against the monopolies, and the outbreak of World War I ended this wave.

3.2 The second wave (1919 to 1929)

The second merger wave was a result of he significant economic growth and stock market boom. This wave was occurred in the United States as well. There is significant increase of vertical merger in this wave. The major automobile manufacturers are created during this period. Take Ford as an example. Ford was integrated from steel mills, railroads companies iron and coal companies. The main merger purpose of this wave is for oligopolistic performed by the larger companies. The stock market crash in 1929 and the Great Depression terminate the second wave.

3.3 The third wave (1955 to 1969-1973)

The idea of conglomeration hold by management team of US companies led to this wave. The size of all mergers is relatively small. Those relatively large mergers are unrelated mergers with the idea of achieving growth through diversification. But these companies failed to benefit from diversification under the influence of crashed conglomerate stocks. IT&T, LTV, Teledyne and Litton were created during this period.

As UK has similar company structure, feature and regulations as the United States, its mergers and acquisition activity history is much longer than any other European countries. The UK M&A history started from 1960s. In this wave, it is mainly horizontal mergers and some conglomerate mergers in the latter year, which is different from USA mergers and acquisitions movements in the same time. This starting of M&A activities have trigged mergers and acquisition movements in Europe in someway.

3.4 The Fourth wave (1974-1980 to 1989)

This wave is known as takeover wave. In this wave, many financial tools and techniques, such as junk bond, hostile takeover, leverage buyouts etc., were developed. Not only acquisitions occur in this wave, but also the divestitures. US companies acquire companies, which can expand their advantage in competition, and get rid of those companies that would limit their advantages. This takeover wave stems from the first hostile bid made by Morgan Stanley, representing Inco, to takeover ESB. The successful of this hostile bid started the

wave that major investment banks make bid on their clients' behalf. During this period, it was the time that corporate raiders, such as Boone Pickens, uses two-tier, front-end-loaded, boot-strap, bust-up, junk bond, hostile tender offers to acquire companies until the poison pill was introduced in the 1980s. However, the merger and acquisition activities were still increasing in the latter 1980s and paused for only a few months due to the stock market crash in October 1987. Between 1989 to 1990, due to the $25 billion RJR Nabisco leverage buyout and the junk bond market crash, along with the collapse of saving and loan bank and serious loan portfolio and capital problems of the commercial banks, this merger wave ended. (Martin Lipton, 2006)

UK has the same characteristic as the United States and Europe was affected by the moves of above two countries. Companies in Europe started to use cross-border horizontal mergers to prepare for the Common market during the latter half of 1908s. Some finding shows that since 1984 mergers and acquisitions activities have increased by small size and volume in Europe.

3.5 The fifth wave (1993 to 2000)

This wave was originated from USA. With the assumption that size does matter, companies with unprecedented size were created. The high stock price performance continuously pushes companies to conduct deals in order to maintain their competition advantages. Another main feature is that companies have global view of competition, which motivates them to create distinguished competitive advantages through cross border takeovers. Companies must be big

to compete. This led to once-unthinkable combinations, such as such as the mergers of Citibank and Travelers, Chrysler and Daimler Benz, Exxon and Mobil, Boeing and McDonnell Douglas, AOL and Time Warner, and Vodafone and Mannesmann. (Martin Lipton, 2006) The worldwide volume of mergers increased steadily form $342 billions of deals in 1992 to $3.3 trillion in 2000. Nine of the ten largest deals in history all took place between 1998 and 2000. Most of the deals in 1990 were strategic mergers and used stock payment. Most of the acquirers states that they want a equal deal with the target at the beginning, however, in fact, it turn out unequal in the end. The first quarter of 2000 started with a record-setting $165 billion merger deal between AOL and Time Warner. However, the TMT sector started to slow down after a five-year rapid development. At the end of first quarter of 2000, the Internet and telecom stocks started to crash due to the earning and financing problems. The bubble burst while the merger number and volume of 2000 exceed 1999 by a small amount. The NASDAQ index had a dramatic drop by more than 50% compared with its peak. Most of the TMT stocks decreased by more than 50%, some even as much as 98%. The junk bond market barely exists. Banks are stricter when doing lending screening. The market does not welcome merger announcements. As there are 50% less merger activities in 2001 than 2000, the fifth merger wave ended

The global competition vision not only affects US companies but also European companies. Because of increasing number of deal completed between European countries and the stability transatlantic deals, the number and the size of the deals has increased by a huge amount in Europe. Moreover, with the introduction of euro currency, currency risk and home bias

investment has reduced. Some scholars believed the fifth merger wave is the first international merger wave due to the rapid growing of cross-border takeover.

3.6 The sixth wave (2002 to 2010)

Martin Lipton (2006) believes that there are new merger activities as the merger and acquisition volume has increased from $1.2 billion in 2002 to $3.4 billion by the end of 2006. He states that the government support (e.g. France, Italy and Russia), rise in commodity prices, low-interest financing, hedge fund and the growth of private equity funds are the most important characteristics of this wave. As the economic environment and management strategy is stable over this period, the number of hostile takeover, which can have immediate acquisitions other than changing capital market structure slowly, has increased rapidly.

Chapter 4: Methodology and Data Collection

4.1 Methodology

In this study, we are planning to use event study as research method.

It is useful to briefly discuss the structure of an event study. From Campbell, Lo and

MacKinley (1997), we can know that there are seven key steps for a typical event study.

Firstly, before starting an event study, we need to define the event of interest the to event and identify the event period and estimate period. This step is called event definition. Event period generally refers to the period surrounding the announcement date. Stock prices of within this period will be collected, including the announcement date. It is common to define the event window to be larger than the specified period of interest and the period of interest need to be included with in the event period so that the effect on the stock price before and after the announcement date is taken in to account. For instance, in a merger announcement case, there might be rumor on the market about the merger before the announcement date and one can figure out this probability by calculating the pre-event returns. In this study, we construct the event window as 90 days before and 30 days after the announcement date, as Brown and Warner (1985) and MacKinley (1997) suggested. Estimation period refers to a certain period before the event period. It is used as a normal period that shows how the stock price should have behave without certain event. Market indexes are used as a reference in general circumstance.

The second step is called selection criteria. After setting the event period and defining the event, we need to choose a certain criteria for choosing our targets or samples. The criteria may include data availability, such as listing on the National Association of Securities Dealers Automated Quotations (NASDAQ) or the New York Stock Exchange (NYSE) or may restrict to specified company. Moreover, it is necessary to set up some sample characteristics, such as deal size, deal type, market capitalization, time period etc. it should be clarify that potential

bias may be embedded with the sample.

Thirdly, define the normal and abnormal returns. The measure of abnormal return should be clearly defined so that we will be able to test for the impact of an event. Extract the normal return of the firm over the estimate window from the actual ex-post return of the security over the event window. The normal return is the return of stock during the estimation period. For firm X and event date T the abnormal return is

$$AR_{xt} = R_{xt} - R'_{xt}$$

Where

AR_{xt} is the abnormal return

R_{xt} is the actual return of time period t

R'_{xt} is the normal return for estimate period

Peterson (1989) suggests that there are three types of techniques used to estimate normal return during the estimation period.

The fourth step is estimation procedure. Normally, the event itself should not be taken into account as it may influence the parameters of normal performance model. In this study, we use an estimation window of 30 days ending ninety trading days prior to the first event being examined (usually the announcement date for mergers or reference date for market inquiries). Thus, the estimation window is (-120, -90). Note that non-trading days must be removed from the data to avoid distorting the results, especially around the event date itself. (Lucy Beverley, 2007)

The fifth step is testing procedure. We need to define a testing framework for any abnormal return calculated. This framework should include the definition of the null hypothesis and techniques for adding up the results over certain period. “For example, an equally weighted or value-weighted portfolio may be constructed to test the effect of an event on several firms. We define the cumulative abnormal return (CAR) as the sum of the abnormal returns for each day in the event window,” (Lucy Beverley, 2007)

$$CAR_i = \sum AR_{it}$$

The null hypothesis of the certain event is that there is no impact on the mean or variance of returns. Therefore, the expectation of abnormal return is zero. We can draw a t-test,

$$t = CAR_I/\sigma_I/\sqrt{n}$$

Where

σ_I is the standard error of the distribution

n is the number of days in the event window

Moreover, we need to find out the whether an event study test will correctly reject the null hypothesis, so that we are able to draw a inferences from an event study. In order to do so, we need to examine the ‘power’ of the statistical test in question. Therefore, the significant level can be set at 1%, 5% and 10%.

The sixth step is present result and analysis

The last step is interpret results and draw conclusions. At this stage, we might need to choose between conflicting results.

There are two advantages for event study as Bruner (2002) discussed about in his study.

Firstly, unlike other methods, which focus on financial ratios, manager strategies and economic gains, event study measures the value generated for investor directly. Secondly, it is a measure of predicting the value created in the future. Because, the stock price is the present value of future dividend

However, it has two disadvantages as well. Firstly, it has unreasonable assumptions. It assumed that the stock market is a efficient market, in which all the information even insider information are reflected by the stock price instantly. The investors in this market are all rational investors and there are unrestricted arbitrage chances. These assumptions are believed to be unnecessary for on average and over time. Secondly, in reality, there might be more than one event happened in one day or over a certain period. Therefore, the abnormal return of the company of certain event might be a result of a mixture of events. This can skew the returns for sample companies at certain events. The abnormal return may not be the best measure to reflect influence of the event solely.

4.2 Data Collection

In the study, samples we are planning to use include 100 acquisitions made by NYSE-listed companies during the period of 1st January 2002 and 31st December 2012. This sample includes a comprehensive set of target firm and acquirer of takeover merger and target firm and acquirer of tender offer merger, which fit in the following criteria:

1) The target firm was listed on NYSE.

2) The acquirer firm was listed on NYSE.
3) The share price information of the acquirer and target firm is available from Chicago Research in Security Price (CRSP) data.
4) The announcement date of the merger deal can be found on Bloomberg terminal.
5) The payment methods should be cash, stock or a combination of cash and stock.
6) The market index we used is S&P index.

We used the criteria mentioned above on Bloomberg; we take the 100 largest takeover merger cases and 100 largest tender offer merger cases.

Chapter 5: Data Analysis

5.1 Takeover Acquirer

Chart 1 describes the abnormal return, cumulative abnormal return, t-value and confidence level of the acquirer sample in a takeover deal. The event window we used in this sample is day -20 to day 20, 41 trading days in total. The confidence level is at 95% during the vent period. We are going to divide the event window into three periods: pre-announcement period, event date, and post announcement period. During the post-announcement period, day -10 (AR_t=0.43%, |t|=1.98) and day-6 (AR_t=-0.27%, |t|=1.97) has abnormal return. The confidence level of these days is 95% and the absolute t-value is greater than 1.96, the hypothesis that abnormal return=0 is rejected. Therefore, there is evidence that there is abnormal return during these days. This shows that there could be information leakage before takeover announcement.

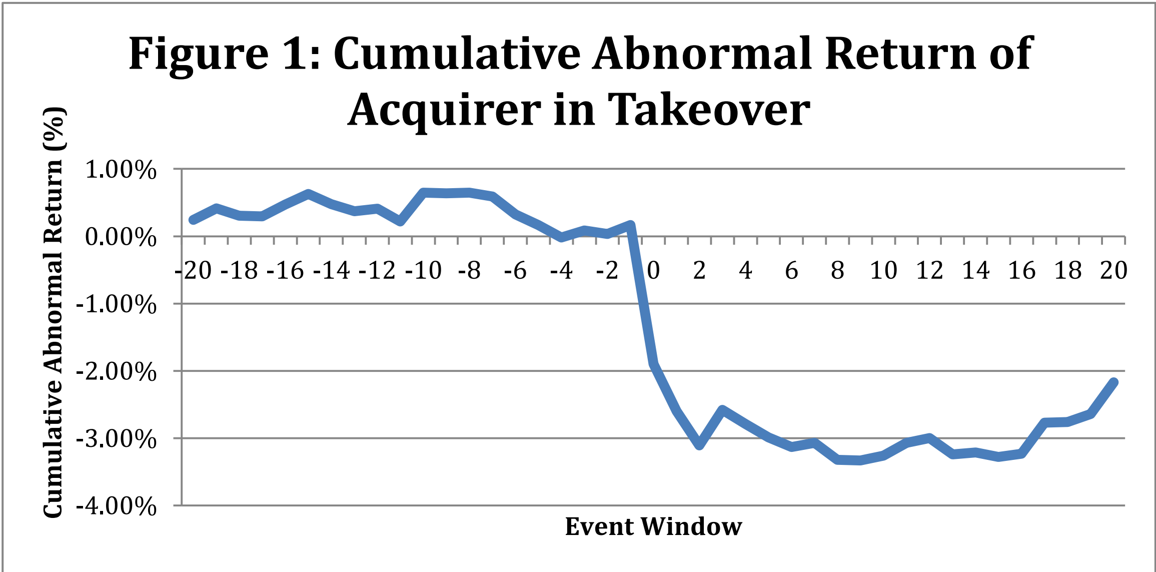
For the announcement date, day 0, the abnormal return is -2.07% with a absolute t-value of 3.48, which is significantly rejected the hypothesis that abnormal return is zero. During the post-announcement period, day 2 (AR_t=-0.53%, |t|=2.54), day 10 (AR_t=0.19%, |t|=1.98) and day 10 (AR_t=-0.46%, |t|=2.02), this shows the hypothesis is rejected.

Chart 1: Abnormal return, cumulative return, t-value and confidence level of Acquirers in Takeover				
Event Window	Abnormal Return	Cumulative Abnormal Return	t-value	Confidence level

-20	0.24%	0.24%	1.41	-
-19	0.17%	0.41%	1.17	-
-18	-0.11%	0.31%	-0.63	-
-17	-0.01%	0.30%	-0.06	-
-16	0.18%	0.47%	1.06	-
-15	0.16%	0.63%	1.05	-
-14	-0.15%	0.48%	-0.78	-
-13	-0.11%	0.37%	-0.61	-
-12	0.04%	0.41%	0.24	-
-11	-0.19%	0.22%	-1.1	-
-10	0.43%	0.65%	1.98	95%
-9	-0.01%	0.64%	-0.04	-
-8	0.01%	0.65%	0.07	-
-7	-0.06%	0.59%	-0.34	-
-6	-0.27%	0.32%	-1.97	95%
-5	-0.16%	0.16%	-0.76	-
-4	-0.18%	-0.02%	-1.07	-
-3	0.10%	0.09%	0.61	-
-2	-0.06%	0.03%	-0.43	-
-1	0.14%	0.17%	0.91	-
0	-2.07%	-1.90%	-3.48	95%

1	0.50%	-2.60%	1.68	-
2	-0.53%	-3.11%	-2.54	95%
3	0.21%	-2.58%	0.97	-
4	0.20%	-2.79%	0.74	-
5	0.14%	-2.99%	0.69	-
6	-0.06%	-3.13%	-0.28	-
7	0.26%	-3.07%	1.23	-
8	0.00%	-3.32%	0.01	-
9	-0.07%	-3.33%	-0.38	-
10	-0.19%	-3.26%	-1.99	95%
11	-0.07%	-3.07%	-0.36	-
12	0.24%	-3.00%	1.03	-
13	-0.03%	-3.24%	-0.15	-
14	0.06%	-3.21%	0.32	-
15	-0.05%	-3.28%	-0.27	-
16	-0.46%	-3.23%	-2.02	95%
17	-0.01%	-2.77%	-0.03	-
18	-0.12%	-2.76%	-0.74	-
19	-0.47%	-2.64%	-1.99	95%
20	-0.27%	-2.17%	-0.89	-

Figure 1 shows the overall trend for target firm cumulative abnormal return in a takeover deal during the event window, day -20 to day 20. The overall trend can be divided into three patterns. From day -20 to -1, the cumulative abnormal return is fluctuating above zero. It started to decrease from day -7 to -1 and stays around zero. From day 0 to day 2, the cumulative abnormal return drop dramatically to -3.11% and remained low after day 3. From the fact that abnormal return remain above zero before announcement date and dropped below zero after announcement we can know in a takeover deal can have a negative effect on shareholders' wealth of target firm.



5.2 Takeover Target

Chart 3 describes the event window, abnormal return, cumulative abnormal return, t-value and confidence level of target firm in takeover deal. The event window is defined as day -20 to 20, 41 trading days. The confidence level is 95%. During the post-announcement period, day -19

(AR_t=-1.22%, |t|=2.95), day -17 (AR_t=-0.52%, |t|=3.55), day -16 (AR_t=0.90%, |t|=3.07), day -15 (AR_t=-2.3%, |t|=3.75), day -13 (AR_t=1.03%, |t|=5.39), day -11 (AR_t=-0.99%, |t|=2.2), day -10 (AR_t=-1.44%, |t|=3.17) and day -4 (AR_t=-1.07%, |t|=2.21) have abnormal return. And the absolute t-value is greater than 1.96, the hypothesis is rejected, there it is significant abnormal return before announcement date.

On the announcement date, the abnormal return is 0.06% and the t-value is 2.25, meaning that the abnormal return is insignificant on announcement date. The hypothesis that there is no abnormal return exists is rejected.

During the post announcement date, day 1 (AR_t=-0.13%, |t|=2.92), day 4 (AR_t=-0.79%, |t|=2.95), day 16 (AR_t=1.55%, |t|=2.18), day 17 (AR_t=-1.5%, |t|=2.04) and day 19 (AR_t=-2.34%, |t|=2.27) have abnormal return with absolute t-value greater than 1.96, indicating that there are significant abnormal return on these days.

Chart 2: Abnormal return, cumulative return, t-value and confidence level of Targets in Takeover

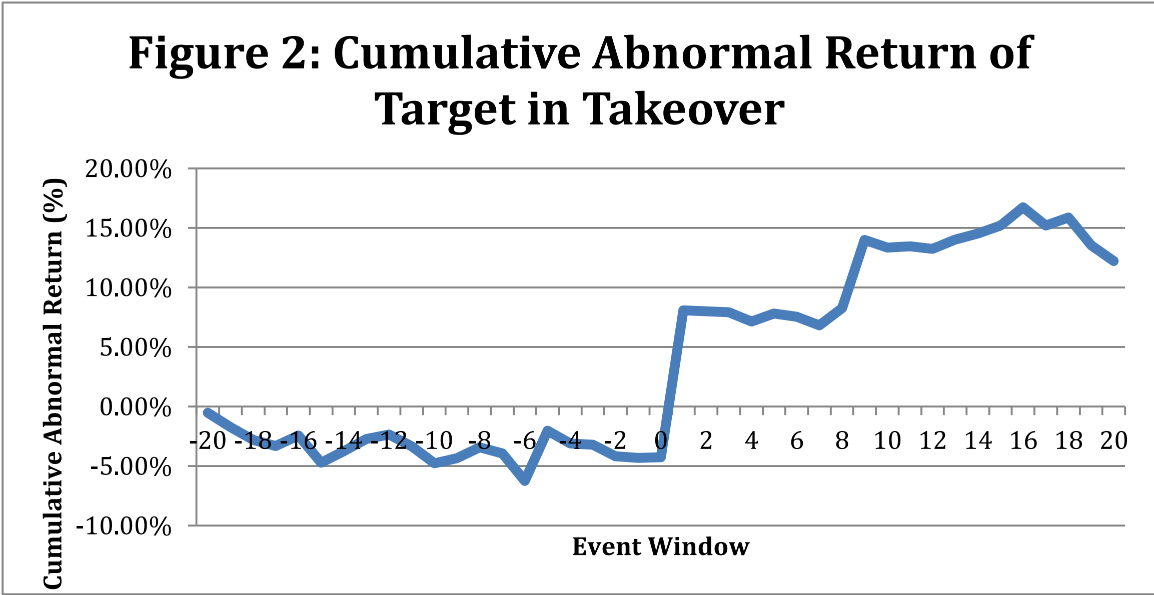
Event Window	Abnormal Return	Cumulative Abnormal Return	t-Value	Confidence Level
-20	-0.0050607	-0.0050607	-1.52	-
-19	-0.0121808	-0.0172415	-2.95	95%
-18	-0.0106674	-0.0279088	-1.22	-
-17	-0.0051977	-0.0331066	-3.55	95%
-16	0.0089633	-0.0241432	3.07	95%

-15	-0.0230475	-0.0471907	-3.75	95%
-14	0.0098026	-0.0373881	0.52	-
-13	0.010293	-0.0270951	5.39	95%
-12	0.0037666	-0.0233285	0.19	-
-11	-0.0099475	-0.033276	-2.2	95%
-10	-0.0144056	-0.0476816	-3.17	95%
-9	0.0044587	-0.0432229	0.48	-
-8	0.0089565	-0.0342664	0.54	-
-7	-0.0050393	-0.0393057	-0.49	-
-6	-0.0230084	-0.0623141	-1.58	-
-5	0.042026	-0.0202881	1	-
-4	-0.0106565	-0.0309446	-2.21	95%
-3	-0.0011884	-0.032133	-0.65	-
-2	-0.0095364	-0.0416694	-1.19	-
-1	-0.001312	-0.0429814	-0.3	-
0	0.000587	-0.0423944	2.25	95%
1	-0.0092564	0.0808032	-2.92	-
2	-0.0008241	0.0799791	-0.26	-
3	-0.0006663	0.0793128	-0.1	-
4	-0.007867	0.0714458	-2.95	95%
5	0.0066371	0.0780829	0.73	-

6	-0.0026405	0.0754423	-0.71	-
7	-0.0072334	0.0682089	-0.83	-
8	0.0144943	0.0827033	1.66	-
9	0.002618	0.139982	0.49	-
10	-0.0062756	0.1337064	-1.46	-
11	0.0009781	0.1346845	0.16	-
12	-0.0021146	0.1325699	-0.38	-
13	0.0077705	0.1403404	1	-
14	0.051124	0.1454528	0.42	-
15	0.006599	0.1520517	0.88	-
16	0.0155279	0.1675796	2.18	95%
17	-0.0154554	0.1521242	-2.04	95%
18	0.0066334	0.1587576	0.42	-
19	-0.0233872	0.1353704	-2.27	95%
20	-0.0131344	0.122236	-1.92	-

Figure 2 shows the overall trend of target's cumulative abnormal return in takeover. The trend can be divided into three parts. From day -20 to 0, the cumulative abnormal return is fluctuating below zero. For the period between day 1 and day 8, the CAR increases dramatically to 8.08% on day 1 and remain stable. From day 9 to day 20, the cumulative abnormal return increases to 14.03% on day 9 and remain stable around 15%. There is no

obvious evidence that there is information leakage before announcement date. And the increase in abnormal return shows that the market is in favor of the takeover.



5.3 Tender offer Acquirer

Chart 4 describes the acquirer's daily abnormal return and cumulative average abnormal return in a tender offer deal. The event window in the sample is -20 to 20, 41 trading days. The confidence level of samples is mainly at 90% during the event period. During the pre-announcement period, day -19 (AR_t=0.55%, |t|=3.57), day-7 (AR_t=-1.34%, |t|=2.97) and day -5 (AR_t=-0.94%, |t|=1.7) have absolute t-value greater than 1.64, therefore it is significant that there are abnormal return on these days. Moreover, as there are abnormal returns on day -5 and day -7 there could be information leakage before announcement date.

On the announcement date, the abnormal return is 0.6% with a critical value of 1.83, indicating that there is abnormal return on this date.

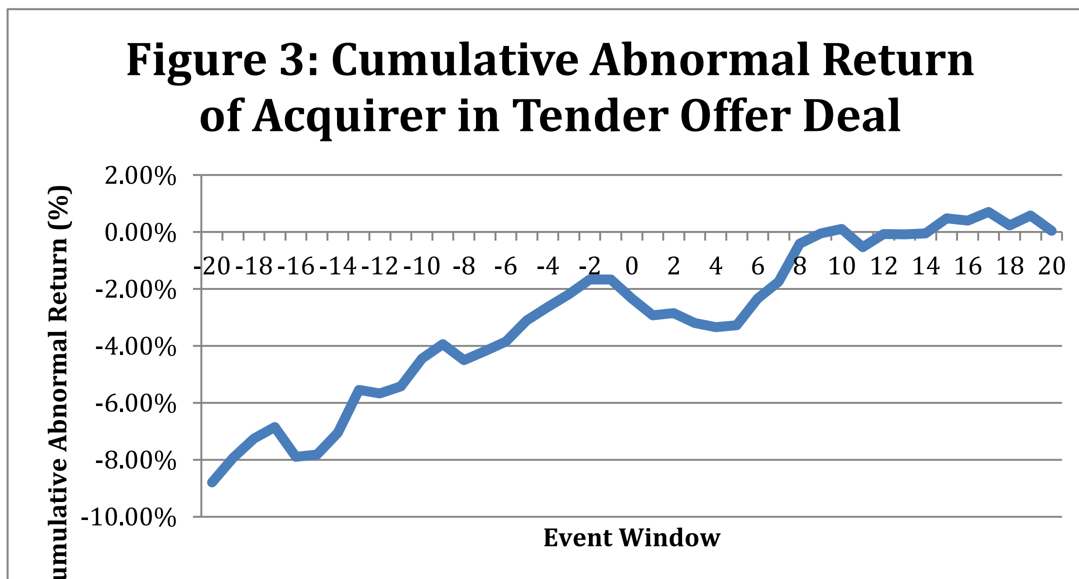
During the post announcement period, day 11 (AR_t=-0.98%, |t|=1.74) and day 14 (AR_t=-1.5%, |t|=1.72), day 19 (AR_t=-0.68%, |t|=1.67) and day 20 (AR_t=-0.85%, |t|=2.01) has abnormal return. As all these days have critical value greater than .164, meaning that the null hypothesis is rejected, abnormal return exists.

Chart 3: Abnormal return, cumulative return, t-value and confidence level of Acquirers in Tender offer

Event Window	Abnormal Return	Cumulative Abnormal Return	t-Value	Confidence Level
-20	0.04%	-8.79%	0.12	-
-19	0.55%	-7.94%	3.57	90%
-18	-0.36%	-7.26%	-1.22	-
-17	0.48%	-6.85%	1.41	-
-16	-0.30%	-7.89%	-0.83	-
-15	0.08%	-7.82%	0.72	-
-14	-0.53%	-7.05%	-1.11	-
-13	-0.03%	-5.55%	-0.07	-
-12	0.00%	-5.67%	0.01	-
-11	-0.46%	-5.42%	-0.78	-
-10	0.64%	-4.44%	1.2	-
-9	-0.16%	-3.94%	-0.53	-

-8	-0.35%	-4.50%	-0.6	-
-7	-1.34%	-4.19%	-2.97	90%
-6	-0.58%	-3.85%	-0.6	-
-5	-0.94%	-3.10%	-1.7	90%
-4	-0.07%	-2.64%	-0.19	-
-3	0.15%	-2.19%	0.51	-
-2	0.35%	-1.66%	0.89	-
-1	-0.08%	-1.66%	-0.29	-
0	0.60%	-2.33%	1.83	90%
1	-0.13%	-2.93%	-0.36	-
2	0.01%	-2.85%	0	-
3	-0.52%	-3.20%	-0.87	-
4	-0.45%	-3.34%	-0.58	-
5	-0.46%	-3.27%	-1.11	-
6	-0.75%	-2.33%	-1.21	-
7	-0.34%	-1.75%	-0.77	-
8	-0.31%	-0.41%	-1.05	-
9	0.56%	-0.05%	1.4	-
10	-0.50%	0.11%	-1.33	-
11	-0.98%	-0.53%	-1.74	90%
12	-0.25%	-0.07%	-0.65	-

13	0.12%	-0.08%	0.28	-
14	-1.50%	-0.05%	-1.72	90%
15	-0.77%	0.48%	-0.71	-
16	-0.07%	0.40%	-0.15	-
17	1.05%	0.71%	0.88	-
18	-0.41%	0.23%	-0.7	-
19	-0.68%	0.58%	-1.67	90%
20	-0.85%	0.04%	-2.01	90%



5.4 Tender off Target

Chart 4 describes the target daily abnormal return and cumulative average abnormal return in a tender offer deal. The event window in the sample is -20 to 20, 41 trading days. The

confidence level of samples is mainly at 90% and 95% during the event period. We are going to divide the event window into three periods: pre-announcement period, event date, and post announcement period. During the pre-announcement period, day -8 (AR_t=2.8708%, |t|=1.68), day -6=(AR_t=2.1393%%, |t|=1.78), day -5=(AR_t=1.3601%, |t|=1.67, day -2=(AR_t=3.8982%, |t|=1.66) has abnormal return. The confidence level of these days are at 90% and the absolute t values generated by sample are larger than 1.645. These abnormal return shows that there could be a leak of information about the merger deal before the announcement date. These positive abnormal return shows that they are optimistic about the deal. Therefore, in order to make profit out of the information, these people buy in target company stocks in the market, which increase the demand in a short period, and led to a increase in stock price before announcement.

On the announcement date, day 0, AR_t=2.63%% and |t|=1.92. This indicates that the hypothesis AR_t=0 is rejected, there is evidence that there is abnormal return on this day. The market reaction was neutral. The market was surprised by the merger and acquisition news. For the post announcement period, day 4 (AR_t=-2.25%, |t|=1.85) and day 13 (AR_t=1.51%, |t|=1.99) at a confidence level of 90%. This provides supporting evidence that there is information leakage before the announcement.

Another factor we are looking in to is cumulative abnormal return. By using cumulative abnormal return we can know how the tender offer announcement effect the shareholders' wealth on average. In our sample, the CAR has a significant upward trend from -20 to day 20. It increases from 1.70% of day -20 to 25.01% of day 20. The total cumulative abnormal return

from day -20 to day 0 is 15.94%. 63.74% of the CAR has been explained, this indicates that there could be information leakage.

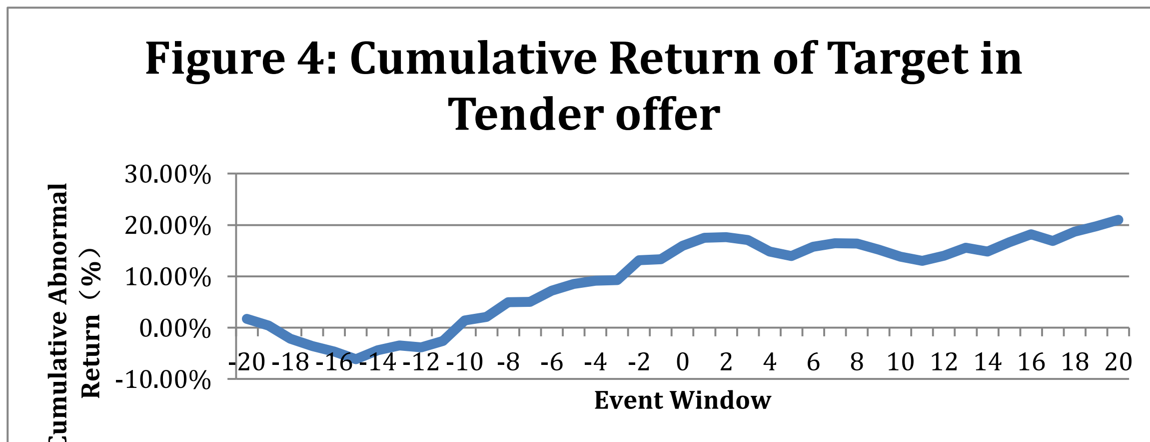
Chart 4: Abnormal return, cumulative return, t-value and confidence level of Target in Tender offer

Event Window	Abnormal Return	Cumulative Abnormal Return	t-value	Confidence Level
-20	1.70%	1.70%	0.44	-
-19	-1.31%	0.40%	-0.64	-
-18	-2.55%	-2.16%	-1.19	-
-17	-1.44%	-3.59%	-1.29	-
-16	-1.05%	-4.64%	-0.88	-
-15	-1.49%	-6.13%	-0.93	-
-14	1.75%	-4.38%	-1.08	-
-13	0.95%	-3.43%	0.77	-
-12	-0.37%	-3.80%	-0.54	-
-11	1.24%	-2.56%	-0.92	-
-10	4.00%	1.44%	-1	-
-9	0.66%	2.10%	0.79	-
-8	2.87%	4.98%	-1.68	90%
-7	0.08%	5.05%	-0.13	-
-6	2.14%	7.19%	-1.78	90%

-5	1.36%	8.55%	0.67	90%
-4	0.62%	9.17%	0.32	-
-3	0.10%	9.27%	0.09	-
-2	3.90%	13.17%	-1.55	-
-1	0.15%	13.32%	-0.14	-
0	2.63%	15.94%	-1.92	90%
1	1.57%	17.51%	0.5	-
2	0.12%	17.64%	-0.08	-
3	-0.56%	17.07%	-0.29	-
4	-2.25%	14.82%	-1.85	90%
5	-0.84%	13.98%	-0.65	-
6	1.79%	15.76%	-1.01	-
7	0.68%	16.44%	-0.43	-
8	-0.06%	16.39%	0.07	-
9	-1.17%	15.21%	0.81	-
10	-1.38%	13.84%	-1.5	-
11	-0.84%	12.99%	-0.65	-
12	1.06%	14.05%	-1.06	-
13	1.51%	15.56%	-1.99	90%
14	-0.74%	14.82%	-1.31	-
15	1.82%	16.64%	-1.27	-

16	1.55%	18.19%	-1.04	16
17	-1.33%	16.86%	-0.61	17
18	1.86%	18.72%	-1.16	18
19	1.02%	19.75%	-1.32	19
20	1.26%	21.01%	0.84	20

The graph shows that the overall trend of cumulative abnormal return of target firms in tender offer deal from day -20 to day +20. The CAR deceased from day -20 to day -16 and reached a bottom. From day -16 to day 0, the CAR increased rapidly to 15.94% from -4.64%. This evidence indicated that there could be information leakage before the announcement. After the merger was announced, the increasing speed started to slow down and return to normal.



Chapter 6: Conclusion

Merger and acquisition is an important way for companies to change the current situation. There are various motivations for companies to engaged in mergers and acquisitions activities. Through mergers and acquisitions, companies could obtain market power, improve market efficiency, reallocating resources and set up market discipline. This can improve to company performance and create value. However, companies may merger with or acquirer other companies for manager's self-interest for the following three reasons. Firstly, as compensation will normally increase after M&A, manager may try to conduct a merger deal just for the additional compensation they can have and not focus on how much the company would benefit from the deal. Secondly, with successful merger news, managers may be over confidence of themselves on handle merger between two companies and ignore the fact that deals with different determinant factors, they are too unique to apply to each other. Overconfidence CEOs will increase the acquisition premium and have a negative influence on the post-acquisition performance. Thirdly, manager may use target defense tactics to protect their own benefit at the expense of shareholders' wealth. Moreover, environment can be an important factor as well. The environment uncertainty may not be a favorable environment for mergers and acquisitions. Network ties indicates that if companies have control right of each other, their mergers and acquisition activities tends to be alike. Furthermore, firm characteristic, strategy and position are important factor as well. managers with successful acquisition experience is more likely to involve in same type of acquisitions.

There were six merger waves in the history. The first merger wave is known as the horizontal merger wave. Mergers purpose during this period were mainly for monopoly. The second merger wave is the beginning of vertical merger wave. At that time, the main merger purpose of this wave is for oligopolistic performed by the larger companies. Third merger wave is conglomeration merger wave. It is popular for companies to merger with other companies from different industry so that they can diversify their income. The fourth merger wave is known as takeover wave. During that time many financial tools and techniques were introduced. The fifth merger wave was originated from USA. The most important feature of this wave is that many once-unthinkable deals were completed. It is the first international merger wave. The sixth merger wave is driven by the government support, rise in commodity price, low-interest financing and the rapid development of private equities. Number of hostile takeover increased quickly during this period.

Scholars have different understanding and methods to measure whether create value. They found out that there is a positive overall return using event study. However, the return for acquirer is close to zero and the target shareholder has a greater and more stable return. Relevant merger generate greater value than irrelevant mergers.

People would believe that the mergers and acquisition would benefit the acquirers, as they assume they are rational economic entities. However, researches show different result. Studies show that shareholders of target companies have a significant abnormal return. The stock value of the acquirer do not have significant changes in short term and in long term the cumulative abnormal return become negative.

Some scholars focus on the relationship between the payment method and the merger performance. There are two major payment methods: Stock and cash. Some study shows that deals using cash payment generates more abnormal return than stock payment in short term. However, in long term, acquirer has a zero abnormal return when using cash payment while stock payment generates zero abnormal return.

Some researchers believe that the merger performance can be explained by the industry correlation. Deals with higher industry correlation have a better merger performance. However, non-relevant merger generates higher value than relevant mergers. In long term, there is no difference between relevant merger and non-relevant merger in generating value for shareholders.

There is one classic theory that describe the relationship between growth stock, value stock and merger performance called performance extrapolation hypothesis. It assumes that companies with high price to book value is defined as value stock while companies with low price to book value is defined as growth stock. During the announcement period, due to the excessive expectations, growth stock will generate higher abnormal return than value stocks. In long term, the abnormal return of value stock will be higher than growth stock. Growth stock will pay a higher merger premium.

Some theories focus on the relationship between the acquirer’s initial share and merger performance. Empirical study shows that the possibility of successful merger will increase, as the acquirer owns more shares in the target initially. However, some researchers found out

that acquirers are hard to make profit out of initial share as the strict rules on information disclosure.

There are three major methods in merger performance area: event study, accounting method and clinical study. Event study is the dominant method in merger and acquisition area. It calculates the abnormal return of stock price generated by the event through comparing with the normal return in the estimating period. It assumes that the price is embedded with M&A information. Accounting method, through comparing the pre and post merger financial data from acquirers' financial statements to find out whether merger provides a competitive advantage. ROE, ROA, leverage ratio, liquidity and EPS are widely used. Clinical study is an inductive research method. It focuses on small sample in great depth using field interview with management team. It is good for finding new patterns but results are not representative due to the small sample size.

The main purpose of this study is to examine the effect of tender offer and takeover announcements on shareholders' wealth using the estimated abnormal return around the announcement date.

By analyzing the average abnormal return in the event window, we tested the hypothesis to see if abnormal return and cumulative abnormal return is significantly different from zero. For acquirer in a takeover, the lowest abnormal return we observed is on day 0 of the event window with a significant t-value at 95% confidence level. Therefore, the null hypothesis is rejected on this day. The cumulative abnormal return lies below zero since the announcement

day. After the takeover, the CAR has decreased to a stage that is much lower than the pre-announcement period.

For targets in a takeover, the abnormal return increased dramatically on the announcement date on the confidence level of 95%. The absolute t-value for that date is 2.92, which means the null hypothesis is rejected. The cumulative abnormal returns stayed above zero after the announcement date and keep increasing. This shows the market is in favor of the takeover announcement.

For acquirers in tender offer, the abnormal return is 0.60% with a t-value of 1.83 on a 90% confidence level. This indicates that the null hypothesis is rejected. The cumulative abnormal return was increasing before the announcement and kept increasing after a 7-day decline after the announcement. This shows that there might be a information leakage before the announcement and the insider is pessimistic about the news.

For target in tender offer, the abnormal return is the highest on the announcement date. The absolute t-value is 1.92 which is lower than 1.64 at the 90% confidence level. This means the null hypothesis is rejected. There is abnormal return on this day. Information leakage may be able to explain why there is a upward movement of cumulative abnormal return before the announcement date. After the announcement date, market starts to absorb new, therefore the cumulative abnormal return started to increase slower and return to normal speed.

From the above analysis, we can know that takeover and tender offer announcement will have a positive influence on shareholders' wealth of target and have a negative influence on shareholders' wealth of acquirer within the event window.

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