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**THE LONG-TERM PERFORMANCE OF ACQUIRING COMPANIES IN
FINLAND**

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ABSTRACT

This research paper concentrates on evaluating the long-term post-merger performance of Finnish mergers and acquisitions completed during 1995–2006. As the overall wealth effects related to acquisitions are enormous, their performance and success has been immensely studied both by researchers and corporate managers. This research though has mainly concentrated on observing the announcement period returns while the long-term studies have been scarce. The purpose of this study is to test how and if the pre-merger valuation of the acquirer influences the eventual three-year post-merger performance.

Using an event study method, the aim is to find out if high-valuation "glamour" firms are the primary cause of the long-term performance. The effects of the chosen payment method and acquirer size are also studied in order to offer a more comprehensive view of the factors affecting the mergers and acquisitions. Attention is also given for recent findings of the short comings of long-term event-studies and especially the problems which might present themselves. These findings imply that measuring problems associated to the use of the conventional t-test for long-term event-studies might have been a source of the negative underperformance of some of the earlier studies.

The results clearly show that Finnish acquirers which undertake mergers and acquisitions perform poorly afterwards, but a majority of the poor performance can be accounted for high-valuation "glamour" acquirers. Low-valuation "value" firms also underperform but no statistical significance is found. The evidence also suggests that the chosen method of payment affects the long-term performance as acquisitions financed using equity only fared considerably worse than those financed with cash only. The acquirer size had also effect on the eventual performance of the merger. All size groups underperformed but statistical significance was only found for medium and small acquirers.

1. INTRODUCTION

Every year billions change hands when corporations complete mergers or takeovers. The ongoing integration and the rapid development of worldwide capital markets have given companies access to new markets and growth opportunities. This has also affected the merger markets in a way that the number of mergers and their overall value has constantly increased. When corporate executives decide to acquire smaller competitors or struggling rivals, they are making decisions which might affect thousands of employees, customers and owners around the world. This is why mergers, their performance and overall results have been studied extensively by researchers and corporate management themselves. The aim has been to discover specific factors or determinants which could help to explain why certain mergers succee and others fail completely.

In Finland, the deep recession in the turn of 1980s and 1990s forced companies to restruct or sell their unprofitable businesses. Large companies in metal, forest, banking and technology sectors were unable to continue as large conglomerates, and had to streamline their operations just to survive. As Ali-Yrkkö (2002: 1) mentions, this started a decade long merger wave in Finland. Kallunki, Peltoniemi and Pyykkö (2009) state that especially the deregulation of capital markets which allowed foreign investors to buy and hold the stocks of Finnish companies boosted the development and the liquidity of the markets and meant that the Helsinki stock exchange became one of the most international stock markets in the world. Similarly the increased liquidity and therefore a more efficient flow of resources gave Finnish companies an opportunity to expand their own businesses. Rising stock market during the 1990s had also a positive influence on the mergers and acquisition (later M&A) market. Evidenced by Ali-Yrkkö (2002 especially Figure 4.2) who shows that, when the size of the economy is taken into consideration, Finland was the most active EU member state during the 1990´s in the M&A business.

Pike and Neale (2006: 545) point out the total value of worldwide M&A markets dropped to 1,75$ trillion dollars in 2001, from 3,5$ trillion in 2000. More recently, after the economy started to recover from the tech bubble, companies were again eager to undertake new M&A. According to a M&A outlook (2007), the worldwide M&A activity was a staggering 4,06$ trillion in 2006. The report predicts that the M&A activity will continue to rise in 2007 and 2008, but because of the cyclical nature of the

M&A markets, a sharp decline in the world economic growth or a financial crises would seriously affect the M&A markets in a similar fashion as in 2001.

In Finland, several large mergers valued over a billion € have been completed after the turn of the millennium, the most notable mergers happening in the energy, forest and finance sectors. Currently as the world economy is recovering from the financial crisis, low interest rates, increased liquidity and conservative firm valuations could be seen as positive signs when anticipating an increase in the future merger activity.

Because of the enormous wealth effects associated to the M&A, firm and manager specific characteristics affecting the overall merger outcome have been studied immensely. These merger motives have been usually associated to synergy gains where two merging companies should function more efficiently compared to operating individually. Similarly the merger performance has attracted several researchers to study and evaluate the market reactions and overall outcomes of mergers.

While the short-term wealth gains for target owners have been observed in numerous studies time and time again, the returns and benefits for bidders and more precisely their long-run returns are still a bit of a mystery. Depending on the research period and the studied market, results from the long-term performance of bidders have been conflicting, and lately, the development of the estimation methods especially regarding stock returns have shown that long-term tests are vulnerable to serious biases depending on the chosen methodological approach, thus creating a new problem for measuring the overall M&A outcome.

1.1. Research problem and approach

The purpose of this paper is to study the long-term stock performance of Finnish companies undertaking acquisitions. This is done by evaluating the three year period after the original deal announcement, in order to discover how the acquirers` pre-merger valuation affects the long-term stock performance. This paper also studies how the chosen payment method and the acquirers` size affect the eventual outcome of the merger. The motivation for the study has two main reasons.

First, as the majority of research papers concentrates on the immediate stock market reaction of both the bidders and targets share prices, studies focusing on the long-term performance of these acquisitions have been rather scarce. The announcement period returns have been studied using Finnish data also, but the long-term performance has been somewhat neglected, so this paper aims to offer more information about the long-term performance of Finnish acquisitions compared to other countries and provide knowledge if similar return patterns exists also in Finland.

Secondly, several influential research papers have documented the effect of company valuation to its future stock returns, an area that until quite recently hasn`t been studied in relation to M&A. While research papers studying this valuation effect has been published concerning other nations, Finland hasn`t been part of these countries. So this paper looks to fulfil this gap in research, and evaluates how bidder valuation affects the long-term results of M&A in Finland.

1.2. Research hypothesis

Studies have shown that pre-merger valuation affects how well or badly the acquirer performs after the announced merger. Rau and Vermaelen (1998) and Sudarsanam and Mahate (2003) measure the pre-merger valuation using company P/E and B/M ratios as proxies. They show that in the US and in the UK respectively, value companies (low valuation) outperform glamour companies (high valuation) on the following long-term period after the merger. More precisely, the weak after-merger performance of the glamour acquirers seems to be the primary source of the previously widely observed and reported long-term underperformance.

The same studies also show that the method chosen to pay for the acquisition affects the long-term performance of the undertaken M&A. Rau and Vermaelen and Sudarsanam and Mahate report that cash bidders outperform equity bidders. The effects of acquirer size is tested because of findings by Fama and French (1992,1993) and Bauman, Conover and Miller (1998) whom report that size is an important factor explaining the variation of stock returns and that there is a significant performance difference between glamour and value firms. So, this paper aims to study if pre-merger valuation, method of payment and acquirer size affects the long-term performance of Finnish acquirers, and therefore the hypotheses for this study are:

H1: Low P/E acquirers (value acquirers) outperform high P/E acquirers (glamour acquirers)

H2: Low ME/BE acquirers (value acquirers) outperform high ME/BE acquirers (glamour acquirers)

H3: Bidders using cash as a method of payment will outperform bidders using equity as a method of payment

H4: Value acquirers will outperform similar sized glamour acquirers

1.3. The organization of the research paper

This research paper examines the long-term post merger stock performance of the acquiring companies in Finland and how their pre-merger valuation affects the success of the completed M&A. To sufficiently cover the area of long-term performance the rest of the paper is organised in the following way. Chapter 1 offers insight on the economic importance of M&A, and also the motivation, research problem and the testable hypotheses for this research paper. Chapter 2 includes definitions associated with M&A, explains different merger types and reviews the most important motives for M&A. Chapter 3 is devoted to the previous studies conducted about the long-term performance of M&A while Chapter 4 explains the most common approaches available when conducting long-term post-merger performance studies, and also reviews recent developments and findings that could cause difficulties within these studies. Chapter 5 presents the data selection and explains the used research methods and the theoretical background of the hypotheses, followed by Chapter 6 which reports the results of the study and finally Chapter 7 includes the conclusions drawn from this research paper and recommendations for future study.

2. MERGERS & ACQUISITION THEORY

In this paper all reported acquisitions are considered to be similar with oneanother, but in reality there are differences with the types of M&A. As Pike and Neale (2006: 542–543) clarify, a *merger* happens when two companies combine their interests and form a new company. This action has to be accepted by shareholders of both companies. A *takeover* in the other hand is an acquisition by a single company offering cash, shares or some combination of these, to acquire the share capital of another company. If a takeover is completed, the acquiring company absorbs the target but in this case, no new entity is created. Halpern (1983) states that *tender offers* are offers to purchase a proportion of available stock on specific terms or dates while Loughran and Vijh (1997) further explain that *tender offers* are usually made directly to target shareholders. By doing this, acquirers try to avoid the possible resistance of incapable managers and are looking for greater efficiency gains.

Especially when public companies propose and undertake M&A decisions, Bean (1975: 1) explains that they are immediately carefully processed by market participants. Details, like costs and future profits, are extremely interesting for lenders and buyers and could drastically affect the future of the acquiring company. Also, companies may have some sources of value e.g. labour skills or technical excellence which isn`t directly reflected in companies balance statements and thus in their stock price, but could be very valuable (Bean 1975: 2). A good example of this was the hostile takeover of Partek by Kone in 2002. Partek that had previously been active in the acquisitions market was a target of Kone but also KCI Konecranes. Kone ultimately won the bidding contest, and shortly after the acquisition, Kone sold several parts of old Partek while re-acclaiming a substantial share of the original price paid or was suggested by Partek`s stock value that time.

2.1. Merger Waves

It`s been well documented that M&A cluster and appear in waves. So far five merger waves have been documented and studied by financial researchers: in early 1900s, the 1920s, the 1960s, the 1980s and the 1990s. The last one being particularly important because of it`s size and geographical dispersion. Previously focused in the US markets, the last merger wave included an emergence of European and UK companies

participating in the M&A. The overall M&A activity in the euro area increased sharply after 1997 and reached an all time high in 2000, when transactions involving EU companies were almost 2000€ billion. (Martynova and Renneboog 2008; Campa and Hernando 2006.)

Economic booms are usually behind the increased merger activity as conditions in the financial markets are pleasant for undertaking acquisitions. Takeovers coincide with times of rapid credit expansion, high stock market valuation and changes in legislation or deregulation of markets. Similarly, M&A markets tend to slow down quickly after stock market declines or during times of recession. The first merger wave in the beginning of the 1900s can be attributed for large intra industry mergers, triggered by technology and industrial innovations. Second (1920s) for the creation of several oligopolies, third (1960s) was the wave of conglomerates as companies were looking to reduce their cyclical risks and therefore acquired unrelated companies or new businesses. The wave of 1980s started when stock markets recovered from their previous decline, and simultaneously several changes in the regulation of financial markets were introduced. Finally the last merger wave (1990s) can be seen as a first global merger wave, as for the first time, companies from Europe and Asia also participated in several billion dollar M&A. (Martynova and Renneboog 2008; Ali-Yrkkö 2002.)

While previous research has shown that M&A appear in waves, they also seem to cluster sector-wise. Mitchell and Mulherin (1996) evidenced that intra industry shocks are important factors for the increases in merger activity on a specific sector. They list e.g deregulation, innovations in financing technology and input cost changes as sources for these shocks, and to counter these shocks on a sector level, corporate takeovers are an economical way to react to them. Mitchell and Mulherin studied the 1980s merger wave in the US and report that there appeared to be substantial sector variation in the number of undertaken mergers and to which sectors they concentrated. Although all industries experienced takeovers during the 1980s, the highest number of M&A activity was completed in industries experiencing the greatest fundamental shocks. Andrade and Stafford (2004) show that in their research, half of observed intra industry mergers clustered to a five-year span and resulted from industry shocks.

Mitchell and Mulherin (1996) state that in a case of e.g. an intra industry technological shock that creates an expansion in firm sizes, can be countered internally or externally in that sector. Companies could achieve the size growth through an outside takeover or

an inside expansion. Andrade and Stafford (2004) add that firms might try to increase their size and scale in order to afford major capital investments. Intra industry mergers could also be caused by corporate restructuring i.e. rationalization of operations or excluding of overlapping functions. Halford (2005) agrees with Mitchell and Mulherin and Andrade and Stafford with their findings but adds that a sufficient increase in capital liquidity i.e. low transaction costs and economic motivation is imperative for industry shocks to become merger waves.

Rhodes-Kropf, Robinson and Viswanathan (2005) find that increases in average sector valuation error, increase the merger activity on that specific industry compared to other sectors. They also report that while sector-level miss valuation is a crucial component of merger waves, it explains only 15% of them. On a firm-level, miss-valuation is integral of explaining who participates in merger waves. Harford (2005) finds a somewhat differing result, he reports that intra industry market-to-book ratio has some predictive power of merger waves but when including additional economic values to the model it becomes insignificant. Harford also reports of some evidence of bidder underperformance after a merger wave.

2.2. Different types of acquisitions

Pike and Neale (2006: 549) list three different types of acquisitions:

Horizontal integration – an acquisition where a company acquires inside the same industry and the target company is at the same stage of the production process. Fee and Thomas (2004) studied horizontal acquisitions and report that the main reason why managers undertake such acquisitions is the expectation of higher productive efficiency. Fee and Thomas note that horizontal acquisitions gives also more buying power to the merged entity, thus decreasing supplier cash flows and ultimately their profits, especially on more concentrated sectors. Andrade and Stafford (2004) show that on an industry-level, excessive product capacity increases the likelihood of mergers while peak product capacity leads to increased internal investments by firms. Capron (1999) studies the long-term performance of European and US manufacturing companies conducting horizontal acquisitions. He reports that cost savings, market coverage and innovation capabilities as the main reasons affecting their post-merger performance.

Vertical integration – is similar to horizontal integration but the target company operates on a different stage of the production process. Fan and Goyal (2006) state that vertical mergers give acquiring companies more control of the production processes. They also report that between 1962 and 1996, one-third of the US sample mergers where vertical by nature and that the number of completed vertical mergers was on the rise regardless of what sector they were undertaken.

Conglomerate or *unrelated diversification* – the target corporation may operate in an entirely different sector, but they may share some activities e.g marketing or administration. Capron (1999) mentions that sharing activities enables merging businesses to achieve cost reduction based on learning curve economics. Without the merger, the businesses alone might not have the necessary cumulative production volume to fully take advantage of them. Fan and Goyal (2006) report that in the US, conglomerate mergers peaked during the 1960s and later they became more focus related i.e were more industry specific. Shleifer and Vishny (2003) suggest that the conglomerates wave was triggered by owners of high-valuation bidders trying to claim a substantial share of long-term capital.

Ross, Westerfield and Jordan (2006: 801) offer examples of other types of mergers. They explain that a *proxy contest* occurs when a group tries to obtain enough votes (by using proxies i.e. a right to vote with someone else's rights) to get a controlling seats in the corporate board of directors. The aim is to change the current directors. Company directors and outside investors may choose to conduct a *leveraged buyout* (LBO), i.e. buying all the available equity. A LBO purchase is usually heavily leveraged, hence the name.

Ross et al. also report that companies don`t necessarily need to conduct mergers while increasing their level of co-operation. A *strategic alliance* might be formed in an effort to create e.g. new products or pursuit some other joint goal. Also a *joint venture* could be formed, where two or more firms invest money to create a new firm which to operate. Pike and Neale (2006: 549) conclude that in reality acquisitions are rarely so easily classified because of the complexity associated to them.

2.3. Motives for M & A

Shareholder wealth maximization is considered in the finance literature as the number one priority for company management. They should continuously search and exploit new opportunities, when trying to improve their company value. Bean (1975: 2) adds that even when the economy isn`t doing well, this shouldn`t stop firms from looking for new investment opportunities, but instead requiring them to make better capital investment decisions with more limited resources. Halpern (1983: 299) adds that for the acquirers there should be an expectation of a positive economic gain and thus the acquiring firm should earn at least a normal rate of return.

The finance literature in general states that companies undertake acquisitions because they are trying to generate more profits or act more efficiently as a new entity, compared to separate companies. Andrade and Stafford (2004) add that one must evaluate the pros and cons of the choice to merge or invest internally, as they both are ways to increase firm`s assets and productive base. This so called value-additivity is an important reason behind corporate acquisitions and is usually illustrated as:

$$V_{a+b} > V_a + V_b$$

where, entities a and b together are worth more than a and b separately.
The aforementioned description is called the neoclassical theory of mergers where managers act to maximize shareholder wealth, i.e. assets are redeployed to a more efficient use. In contrast, if increased merger activity is attributed to periods of financial market miss valuations or managers having information not available to other market participants, this could signal that overvaluation influences merger activity. Some believe that the staggering equity price drops following recent merger waves support this view. (Rhodes-Kropf et. al 2005; Rosen 2006.)

2.3.1. Synergy

Synergy is constantly mentioned as the main reason why managers decide to undertake corporate mergers. The financial literature features numerous studies concerning the synergy effects that may or may not be achieved by a merger. Synergy benefits are thought to be obtainable when two separate entities merge, forming a new corporation which is more valuable than two separate companies (usually presented as 2+2=5). Pike and Neale (2006: 549) clarify that synergy gains are not related to economics of scale

and might emerge from some specific way of utilizing combined resources. Ross et al. (2006: 806) state that an important factor for an acquisition is the thought that the new firm would generate higher revenues, which could be created by marketing gains, strategic benefits or an increase in market power.

There`s three different synergy effects distinguished: financial, operational and managerial. *Financial synergies* result as a lower cost of capital, what could happen by investing to unrelated business or increasing the company size. They can also be attainable if a company creates an internal capital market, where operating using superior information could lead to more efficient allocation of capital. *Operating synergies* can rise from combining separate units or from knowledge transfer. Both could lead to lesser costs of business units, but must be weighted against the cost of acquiring the assets or units. *Managerial synergies* depend on the superiority of acquirers planning and supervisory abilities, which are beneficial for the target company. (Trautwein 1990.)

A study by Devos, Kadapakkam and Krishnamurthy (2008) concentrated on measuring the eventual effect that synergies create. They find that in a sample of 264 large mergers during 1980 – 2004, the measured average synergy gain is 10,03% of the total value of the newly combined entities. They further decompose the results and show that operating synergies consist for 8,38% of observed gain and the rest comes from tax savings. Devos et al. also find supporting evidence for e.g. Rau and Vermaelen (1998) study that value acquirers undertake better mergers compared to glamour acquirers.

2.3.2. Managerial motives

This section reviews studies concentrating on different managerial motives related to M&A. Some overlapping does exists concerning these theories. The agency theory (see Jensen and Meckling 1976) argues that corporate managers and their own interests may be vastly different from the views and interests of corporate owners or shareholders, thus creating an agency problem. Managers might be inclined to e.g. expand the company beyond its sustainable or rational level, or they might try to obtain more profitable positions from other companies when undertaking mergers. Rosen (2006) notes that many of the defensive mergers during 1990s where caused by managers protecting their own interests.

The free cash flow (FCF) that companies are able to accumulate is available money that could be e.g. paid to owners. Jensen (1988) mentions that if the FCF that a company produces is substantial, the possibility of irrational actions, i.e. investing at projects at a lower than the cost of capital rate, by corporate managers could even severe the conflict of interests of the two parties. Jensen also concludes that it`s somewhat paradoxical that a higher amount of available resources could lead to more in-efficiencies and thus result as a lower company value.

Draper and Paudyal (2008) investigate if information asymmetry between corporate managers and financial markets is a source for M&A. They hypothesize that undervalued companies might undertake M&A in order to increase the attention of market participants, and to make them to re-evaluate them, in a view to increase their stock price and valuation. Managers of undervalued companies could be inclined to use such a method in order to fight possible takeovers and at the same time project their own benefits. Draper and Paudyal find supporting evidence from the UK mergers for their hypothesis, i.e. when there is higher information asymmetry between managers and outside investors this leads to higher announcement period returns. The result is even more apparent for infrequent bidders than to multiple bidders.

2.3.3. Economies of scale

Walker (2000) gives various reasons which could manifest as economies of scale. Companies could expand geographically to new markets, they could broaden their product line by acquiring a rival whose successful at some another product sector, increase their market share or choose to diversify. Pike and Neale (2006: 549) add that larger size should create economies of scale in manufacturing, marketing or give the corporation a chance to negotiate better terms with their capital markets associates. Ross et al. (2006: 807) give an example of Cingulars acquisition of AT&T Wireless, where although the combined firm was much larger after the acquisition, the company saved a lot of money streamlining its operations, and as a result the operating and capital cost per customer was much lower.

Lambrecht (2004) offers additional information of acquisitions that happen because of economies of scale. He provides evidence that there exists a positive correlation between merger gains from economies of scale and product market demand. These acquisitions are more likely to appear during rising product markets. Lambrecht also

shows that friendly mergers tend to happen at the beginning of a merger wave and speculates that hostile acquisitions should take place later on, because of the time needed for the merger approval and restructuring.

2.3.4. Hubris

One of the major hypotheses for merger activity is the Hubris hypothesis presented by Roll (1986). This theory suggests that acquiring firm managers when making takeover decisions overestimate the possible gains from successful acquisitions and thus pay more of their targets on average. Even if there really is a chance for the entities to achieve financial gains, Roll argues that the takeover premium for the target shareholders includes a valuation error and hubris. Roll also concludes that the existence of hubris means that corporate management doesn`t always act with the best interests of the shareholders in their mind. Morck, Shleifer and Vishny (1990) go as far as claiming that "…managers will overpay for targets with high private benefits. p.32" Rosen (2006) speculates that if managers are rewarded for short-term performance they might undertake bad acquisitions in order to improve the stock price, which in turn could explain the positive announcement period returns and also the long-run reversal.

Berkovitch and Narayanan (1993) conduct a study were they test synergy- and agency motives as well as the hubris simultaneously, in order to measure the correlation between the target and total gains. They hypothesize that the correlation should be positive for mergers conducted because of synergy, negative if done for management (agency) reasons, and zero if hubris is the motive. The results suggest that synergy is the main reason (positive correlation between target and total gains) but there is considerable differences between the studied subsamples, were the agency theory is the dominating motive, and the likely cause of value-reducing acquisitions instead of hubris.

Hayward and Hambrick (1997) also study the CEO Hubris and the effects it has on corporate takeovers. They find evidence of four different factors which are attributable for CEO hubris. They identify acquiring company`s recent performance, recent media exposure of the CEO, a measure for CEO`s self-importance and a composite factor of the previous as sources for CEO hubris. Their study provides evidence that a higher level of CEO hubris leads to higher bid premiums and finally results as lower long-term returns. Moeller, Schlingemann and Stultz (2004) find supporting evidence for this,

reporting that the paid acquisition premiums grow as the size of the acquirer increases leading them to sum that the hubris effect is more of a problem for large firms than small.

2.3.5. Stock market driven acquisitions

Shleifer and Vishny (2003) introduced a new theory of acquisitions where they are driven by stock markets and their miss valuations. They argue that markets aren`t completely efficient, so companies might be miss valued, but also that company managers are completely rational and are able to use this knowledge for their own benefit when making merger decisions. Companies would have an incentive to use their own overvalued stock as they purchase new corporations. Like Shleifer and Vishny (2003) study, Rhodes-Kropf and Viswanathan (2004) present a behavioral explanation for stock market related acquisitions. Their model assumes that managers from both companies (acquirer and target), have private information about their own company and also are aware that the observed company value is incorrect. Target company management is forced to make a decision to accept or reject the offer with incomplete knowledge of the true value of the acquirer. Still, they know that the acquirer (using stock as method of payment) is overvalued (because they are too) and therefore are able to adjust the incorrect valuation, and hence, on average they`re able to make the right decision about the acceptance of the acquisition offer.

Rhodes-Kropf et al. (2005) tested the aforementioned theories and their empirical implications, more precisely if there is a link between merger waves and miss valuation. Rhodes-Kropf et al. use the Market-to-Book measure (they decompose it to firm and sector level component and also to a component that measures firms long-run growth opportunities) to test if and when companies choose to undertake mergers or become targets of such. They find that acquirers and targets cluster on high *time-series sector errors*, meaning that they both have a similar miss valuation component. On a sector level, the time-series error also seems to increase the equity financed merger activity. They also note the acquirer valuations are usually significantly higher than their targets, and finally that the observed miss valuation explains roughly 15% of the sector level merger activity acting as important factor explaining the merger activity along with e.g. sector productivity shocks.

Rhodes-Kropf et al. also report that when controlling for the firm-specific and time-series sector errors, they find that low long-run value-to-book companies surprisingly buy the high long-run value-to-book targets. An unusual finding regarding the merger activity, the researchers speculate that it could be caused by managers buying targets with a higher long-run valuation or perhaps by incompetent managers who might be acquiring companies with more skilled managers, and then trying to adapt their own organization to learn from them.

2.3.6. Other reasons for mergers and acquisitions.

There exists also wide array of other motives that academics have been able to discover and study. Jensen and Ruback (1983: 24) mention *tax reasons* as a stimulant for M&A, although Devos et al (2008) report that tax considerations aren`t as important source for M&A as previously thought. Jensen (1988) mentions that corporate managers have an incentive to create *new debt* as a substitute for dividends, and this way are able to reduce the available FCF. Morck et al. (1990) find evidence that *managerial motives* cause managers to buy growth and to diversify, in order to gain more personal benefits. Rosen (2006) offers *merger momentum* as source for increased merger activity. He finds evidence that if the markets have reacted favourably to previous merger announcements; it will continue to perceive them more positively. Petmezas (2009) arrives to the same conclusion when studying UK mergers. He finds evidence that managers rushed merger decisions during the hot merger period, but the lack of proper evaluation about the merger had a negative impact on the post-merger returns. Pike and Neale (2006: 550) include *market power acquisitions, risk reduction* and *stock market listing* also as possible reasons for M&A.

3. PREVIOUS RESEARCH RESULTS

Because the purpose of the thesis is to concentrate solely on the long-term performance of mergers, I don`t review research papers which have studied the immediate (announcement period) returns for acquiring and target companies. Jensen and Ruback (1983), Loughran and Vijh (1997), Agrawal and Jaffe (1999) sum that researchers have found that during the announcement period target company owners earn significant returns from all acquisitions, and that acquiring companies earn little or no abnormal returns for tender offers and negative abnormal returns from mergers.

The majority of the research concerning the long-term return of mergers have studied the US and UK markets. For this reason Dutta and Jog (2009) claim that some studies suffer from overlapping US data and data mining. As the number of previous US studies is high compared to other countries, US studies are reviewed separately from other countries.

3.1. Results from long-term studies in US

One of earliest studies that study the long-term performance of takeovers was conducted by Asquith (1983). He studies the merger process as whole, and argue that previous studies neglecting to do so, miss some of the returns associated with mergers. The idea was to study the pre-merger period to observe can markets anticipate the coming merger and also to study the stock returns after the merger announcement. The research sample included successful and unsuccessful mergers from a time period of 1962 to 1976, and Asquith uses an estimation period starting 480 trading days before the merger announcement and ending 240 days after. The results show that as predicted by efficient markets, market participants were able to anticipate the upcoming mergers and suggest that previous studies were unable to measure the total returns of the merger process correctly. They also show that after 240 trading days bidder firms had a statistically negative returns of 7.2 percent, a result that remained puzzling.

Jensen and Ruback (1983) review thoroughly the existing literature concerning corporate takeovers. They mention that previous results suggest that on average bidding firms announcement period returns are approximately zero, i.e. no abnormal returns. The authors note that bidding firm returns are harder to estimate, and because stock

prices reflect expectations, a merger news shouldn`t change the observed price. Like Asquith (1983), Jensen and Ruback wonder why bidders stock price fall one year following the merger, concluding that this is against the market efficiency and suggest overestimation of merger gains as a reason behind this.

An important study by Franks, Harris and Titman (1991) who concentrate solely on the post-takeover issue, offers a comprehensive view on different testing methods and several factors that could affect the long-term performance of corporate acquisitions. Agrawal and Jaffe (1999) use the Franks et al. (1991) research paper as a divider in the research done on the M&A field, and give them credit for their valuable work in the post-takeover issue.

Franks et al. study examines 399 acquisitions from 1975 to 1984 and they e.g. form comparable eight –and ten-factor portfolio benchmarks to measure the long-term performance of the acquirers, while trying to avoid the known biases with the traditional benchmarks. They find contrasting evidence about the long-term performance of the acquirers depending on the used benchmark. When comparing single-factor benchmarks to multi-factor benchmarks, it appeared that the multi-factor models showed statistically insignificant post-merger performance while the observed results for single-factor benchmarks where the opposite. This lead Franks et al. to conclude that previous studies findings were due to benchmarking errors.

Agrawal, Jaffe and Mandelker (1992) study US mergers from 1955 to 1987 in NYSE and AMEX stock exchanges. Their sample includes 937 mergers and 227 tender offers and they use two different kinds of research methods to evaluate the long-term returns and factors affecting them. Agrawal et al. take into account the firm size and company beta and test how they affect the merger outcome. They report a robust statistically significant negative return of about 10% for the following five–year post-merger return using several different methods. But they don`t find evidence that a change in the beta factor causes the result. Fama and French (1993) comment that the negative results could be a result of the book-to-market effect. Agrawal et.al also repeat the Franks et.al (1991) study and report that their findings are specific only for the research period and the results are influenced by the fact, that they include mergers and tender offers in the same sample.

Loughran and Vijh (1997) study US mergers for a period of 1970–1989 from NYSE and AMEX stock exchanges. Their research method differs from Franks et al. (1991) and Agrawal et.al (1992) as they measure the five-year abnormal returns using matching stocks to control for size and book-to-market effect. They report that the post merger abnormal returns depend on the type of the acquisition (merger or tender offer) and the method of payment (cash or stock). The reported abnormal returns vary from significantly negative -25 % to significantly positive 61,7 % depending on the aforementioned factors. Loughran and Vijh state that the observed large abnormal post acquisition results are against the market efficiency.

Rau and Vermaelen (1998) conduct an interesting study about the long-term performance of US mergers. They take into account the bidder size and book-to-market factors and study separately mergers and tender offers. The authors also separate, on basis of their book-to-market valuation, high "glamour" and low "value" bidders from each other. Their study includes 3169 mergers and 348 tender offers from 1980 to 1991. When adjusting for size and book-to-market ratios, bidders (mergers) underperform their equally weighted control portfolios, but for tender offers the results show that they earn a statistically significant abnormal return of 9%. When comparing the value and glamour bidders, Rau and Vermaelen report that value bidders earn significantly higher abnormal returns than glamour bidders and also that the result is unchanged even when events are excluded. This leads the authors to comment that glamour bidders make poorer acquisition decisions altogether.

Mitchell and Stafford (2000) study mergers, seasoned equity offerings (SEO) and share repurchases from 1958 – 1993. They also discuss in detail the recent developments concerning the long-term event study tests and concentrate especially on the Buy-and-hold abnormal return (later BHAR) method as it has been the most common method when studying the overall effects of corporate mergers. They use a three-year period for the long-term testing and measure the overall effects using the BHAR method. Their results show that the BHAR method has statistical limitations, and when these are accounted for, Mitchell and Stafford are unable to find evidence of any abnormal returns contrary to many other studies.

Rosen (2006) studies how and if merger momentum and investor sentiment influence the long-run returns for acquiring companies. Rosen studies how mergers undertaken during a "hot merger" market compare to those that are announced some time else. The study sample includes US mergers from 1992 to 2001 and Rosen uses the BHAR

method but also investigates long-run results using a portfolio approach. The results show that mergers announced during hot merger markets suffer from long-run reversal, and that their announcement period returns are higher compared to mergers which are announced outside of "hot merger periods". Rosen explains that investors react positively to merger announcements but revise their expectations later on.

An exhaustive research paper by Betton, Eckbo and Thorburn (2008) reviews the research done in different phases of the acquisition process. As a part of their review paper they conduct a long-term testing for a sample of 15,298 completed US mergers during 1980–2003. They study three-year post-merger returns and also compare the returns to matched firms of corresponding size and B/M ratio. The results show that acquirers underperform significantly. The observed BHARs for acquirers using equal or valueweights are respectively -21,9% and 17,1%. Betton et.al also measures the long-run returns using a modified Fama-French (1993) model and a portfolio performance estimation. The results are strikingly different, and show that there doesn`t appear to be any significant underperformance. Betton et al. state that differences between event and matched firms may partly cause the differencing result, but still conclude that they cannot reject the hypothesis that merging firms underperform.

3.2. Results from long-term studies from other countries

Gregory (1997) studies large UK mergers over a period of 1984–1992. He uses several benchmarks and research methods to minimize errors caused by the long research period. The sample consists of 452 mergers and regardless of the research method, the reported results show clearly that acquirers lost in the two year post merger period. The findings are similar to other studies conducted in the UK and Gregory also notes that company size or their book-to-market values don`t explain the negative post merger returns.

Sudarsanam and Mahate (2003) follow the Rau and Vermaelen (1998) study and test if there are similarities to be found using a UK sample. Sudarsanam and Mahate examine both short- and long-term performance of value and glamour acquirers (measured by P/E ratio and market-to-book value, MTBV) and also their method of payment and pre- and post-merger performance. The study measures BHAR returns and uses four different benchmark models: The mean-adjusted model, the market-adjusted model,

size-adjusted model and the market-to-book value adjusted model. Sudarsanam and Mahate find that long-term returns depending on the benchmark index differ from -21,9% to -8,7%. When comparing high P/E acquirers to low P/E acquirers, the results show that BHARs for high P/E acquirers ranges from -47% to -17% but for low P/E acquirers only from -9% to -2%. The results are similar when comparing high MTBV (glamour companies) acquirers to low MTBV (value companies) acquirers. Sudarsanam and Mahate conclude that the results are similar to the Rau and Vermaelen (1998) study.

Gregory (2005) tests the FCF hypothesis (see Jensen 1988) and how it might affect the long-run post-merger returns. Gregory uses UK mergers from January 1984 to December 1992 and a five-year post-announcement period to test the FCF hypothesis. Gregory measures the abnormal returns by size and book-to-market matched returns, and also creates specific reference portfolios for them using the methodology suggested by Lyon, Barber and Tsai (1999). The results show that acquirers earn significantly negative returns for the post-merger period, a finding similar as reported in Gregory (1997). Gregory doesn`t find evidence supporting the FCF hypothesis for UK acquirers and their long-term returns, although reporting weak support for the announcement period. And an interesting finding is though that, acquirers with high FCFs tend to beat acquirers with low FCFs in the post-merger period contradictive of what the FCF hypothesis suggests.

Campa and Hernando (2006) examine the long-run returns in the European financial sector. They use a one year post-merger period and study acquiring and target companies. A small majority of their sample firms display negative returns for the post-merger period, but there doesn`t appear to be any statistical significance. Later, the authors further modify their sample and divide the included mergers based on their size and if the merger is a domestic one or international. The results show that acquirers completing smaller deals had significant negative long-run returns, while acquirers making large deals earned positive abnormal returns of 6%.

Antoniou, Arbour and Zhao (2006) conduct a long-term test using UK mergers from 1985 to 2001, and also concentrate on the statistical methods and problems related to long-term testing. (detailed discussion in chapter 4.2) They adopt a similar testing method as Mitchell and Stafford (2000) i.e. "corrected" BHAR returns but Antoniou et al. include multiple bidders in their sample, a choice they consider more appropriate as "… multiple bids constitute a large part of merger population p.3" Antoniou et al. first report statistically significant underperformance using "uncorrected" BHAR returns,

when using the corrected BHAR returns the reported test results become less significant or lose their significance all together.

Antoniou et al. also conduct several statistical tests concentrating on previously observed determinants of long-term underperformance. They test for the method of payment (Loughran and Vijh 1997, Rau and Vermaelen 1998), diversification, book-to-market effect (Rau and Vermaelen 1998) and size. They report that when adjusting the original t-statistics, observed BHAR results seemed to disappear almost entirely and displayed only weak significance. Antoniou et al. conclude that all conventional t-test statistics are overstated when discarding the positive cross-correlation of stock returns. This results in over-rejection of null hypothesis i.e. no abnormal returns.

Bogdanova (2007) studied in a master`s thesis the long-term performance of domestic and foreign acquisitions made by Finnish companies. The research period is from 1995 to 2000, and includes 12 domestic and 21 cross-border acquisitions made by companies in the OMXH main list. The reported results show a statistically significant negative long-term BHAR return of – 33 % for the whole sample, and when further divided to domestic and foreign acquisitions, they are – 9 % and – 47 % respectively. Bogdanova mentiones that the results are similar of what has been reported in previous research papers about domestic and foreign acquisitions.

Petmezas (2009) studies the short –and long-term performance (one to three years) of public and private UK acquirers between 1984 and 2003. Petmezas studies both high – and low valuation time periods measured by the overall P/E ratio of the value-weighted market index and how investor sentiment affects the overall merger return, a similar study was conducted by Rosen (2006) using US data. Petmezas employs a calendar time portfolio method to avoid the problem of cross-sectional dependence of sample observations. Petmezas finds evidence of similar investor over optimism as reported by Rosen (2006) and also long-run reversal where acquisitions announced during rising stock markets cause a poor bidder performance in the long-run.

Dutta and Jog (2009) study the long-term performance in Canada. Their sample includes 1300 M&A and span from 1993 to 2003. They use both event –and calendar-time approaches (suggested by Kothari and Warner 2006) and several benchmarks to test the long-term stock and operating performance. The researchers state that they are using an out-of-the-sample study and the most modern and precise statistical methods. Like in Betton et al. (2008) for US, Dutta and Jog find very conflicting results. When

using reference portfolios (indexes) as benchmarks, the BHAR returns are reported to be statistically negative at a 1 %-level, but using control firms as a benchmark, the results are not statistically significant anymore. Dutta and Jog report that these results for acquiring firms are also robust when they account for different factors. Finally they comment that the contrasting results to US studies which report underperformance may be due to regulatory or capital market differencies.

4. EVENT STUDY METHODOLOGY

The event study methodology is useful when measuring the impact that some specific event has on asset prices. Rationality in the market assures that asset prices will change accordingly when new news becomes public. It can be applied to studies with a short or long observation period and for observing the long-run results, like for instance M&A. Event studies focusing especially on measuring short-horizon effects provide additional information about corporate policy decisions and help to better understand them. Also, for short-period studies the results are thought to be more reliable compared to long-horizon studies. (Campbell, Lo and MacKinlay 1997: 149; Kothari and Warner 2006.)

The event study method has its roots in the 1930`s, but seminal studies were done in 1960`s (see Ball and Brown (1968) and Fama, Fisher, Jensen and Roll (1969)). Ball and Brown studied the information content of earnings, whereas Fama et al. studied the effects of stock splits. The event study method quickly established itself, and ever since has been used extensively for measuring several different corporate events e.g corporate mergers and their effects.

The existence of efficient capital markets creates problems when trying to evaluate and interpret results of residual analyses i.e event study approach. An announcement of a merger or tender offer provides considerable amount of information regarding e.g the event itself, the identity of the acquirer or the method of payment. Even the information about the acquisition could allready be incorporated in the security prices because of information leaks or insider trading. The separation and evaluation of the reasoning behind the merger announcements may therefore be difficult. (Halpern 1983: 298.)

4.1. Models for estimating abnormal returns

Several models have been developed for the testing of abnormal returns. The most commonly used are, the Constant-Mean-Return-Model (CMRT) or the market model. Brown and Warner (1985) find that despite the simple nature of the mean-return-model it yields similar results to those of more complex design. Campbell et al. (1997:154) explain that this is attributable to the fact that the variance of the abnormal return isn`t reduced much by choosing more sophisticated methods

Fama (1998) explains that the market model is, used outside of the event window to estimate the stock`s expected returns conditional on market returns for the specific event period. And because these estimations are done without constraining the cross-section of expected returns, thus can be used to study firm-specific events e.g mergers. Campbell et al. (1997) recommend the market model over the CMRT, because the market model can reduce the variance of the abnormal return and therefore yield better results.

The market model is usually defined as:

(1) $$R_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it}$$

where R_{it} and R_{mt} are period-t returns for security *i* and the market portfolio respectively. ϵ_{it} is the error term and α_i and β_i are parameters of the market model. When rearranged, abnormal returns can be calculated:

(2) $$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$$

Where AR_{it} is the observed abnormal return for stock *i* on day *t*.

Brown and Warner (1985: 4–5) report some problems associated to the use of daily data in event studies. They summarize them as non-normality, non-synchronous trading and market model parameter estimation, and variance estimation. Kothari and Warner (2006) mention, that the use of daily data is preferred because it provides more accurate measurements of abnormal returns and thus more informative studies.

Extensive testing has also been done on a couple of other well known models, like, the Capital Asset Prising Model (CAPM), the Arbitrage prising model (APT), and with several multifactor models e.g. the Fama-French (1993) three factor model. The Fama-French model in particular has been used on several research papers studying the long-term performance of M&A.

Fama-French three factor-model is defined as:

$$(3) \qquad R_{(t)} - RF_{(t)} = \alpha + \beta_1\left[RM_{(t)} - RF_{(t)}\right] + \beta_2 SMB_{(t)} + \beta_3 HML_{(t)} + \varepsilon_{(t)}$$

where, $R_{(t)}$–$RF_{(t)}$ is the portfolios excess return, $[RM_{(t)} - RF_{(t)}]$ is the excess market return, $SMB_{(t)}$ is the excess return of small – big firms (market capitalization), $HML_{(t)}$ is the excess return of high-book-to market – low-book-to market firms and $\varepsilon_{(t)}$ is the error term. β_1, β_2 and β_3 are estimated from the regression.

Also an important factor affecting the estimation and testing is the choice of the benchmark index. Dimson and Marsh (1986) report when using capitalisation weighted indexes, they can be expected to underperform equally-weighted portfolios of event securities in case of powerful size effect, and similarly, an equally weighted index will produce biased results if event securities differ greatly in size from typical companies included in the index. The researchers also report serious problems when using CAPM-type models.

4.2. Long-run event studies

The long-horizon event study for specific sample of firms tests, if one-to-five year returns following a specific event are non-zero systematically. The basic thought behind this, is that markets over- or under-react after a specific event because of human judgements or behavioral biases. A systematic component in e.g. behavioral biases doesn`t cancel them out, but appear in the security prices which continuously differ from the underlying fundamentals. (Kothari 2001: 188; Kothari and Warner 2006.)

Fama (1998) challenges the behavioral explanation arguing that the existence of efficient markets, presents and creates naturally over –and under-reaction by chance, and also that the frequency for both is about the same. Fama also adds that if long-term returns can`t be attributed to chance, i.e. the returns are too large, then the existence of over –and under-reaction is a victory for the market efficiency. Finally, Fama argues that studies for long-term returns usually neglect to test or offer any suitable alternative to market efficiency, but instead relax on market inefficiency. Instead Fama states that if

the market efficiency is rejected, it should be done by some better model for price formation, and one that can be tested by empirical tests.

Compared to short-event studies, long-horizon studies require an appropriate adjustment for risk. While inadequate risk adjustment doesn`t affect the test results in short event testing (or the effect is minimal), risk adjustment is usually the main reason for difficulties in long-term testing. A small error in risk adjustment could be economically substantial also the choice of return model is a cause of errors. (Kothari and Warner 2006.)

4.2.1. Models for testing long-run performance

Recent studies measuring the long-term performance of acquiring companies have used mainly the Cumulative Abnormal Returns (later CAR) and BHAR returns to measure the post-event returns. Fama (1998) explains that when measuring returns on a longer time period than one month, the monthly average abnormal returns can be averaged or summed (CAR). Kothari and Warner (2006) add that both testes provide also information about market efficiency, as systematically non-zero abnormal returns suggests inefficiency, and therefore a possibility for a trading rule. The CAR and BHAR methods can be presented in a following way.

$$(4) \qquad CAR_{it} = \sum_{t=1}^{\tau} \left[R_{it} - E(R_{it}) \right]$$

where, R_{it} is the simple return for month t for a sample firm, $E(R_{it})$ is expected return for the sample firm at time t, and AR_{it} is the abnormal return in month t. When cumulated across (τ) periods yields CAR.

The return for a buy-and-hold investment for a sample firm (BHAR) is illustrated as

$$(5) \qquad BHAR_{it} = \prod_{t=1}^{T} (1 + AR_{it}) - 1$$

where, $BHAR_{it}$ is the buy-and-hold abnormal return for company *i* over the time period *T*.

Rosen (2006) explains that the choice of using a portfolio approach or BHAR method leads to different trade-offs between type 1 or type 2 errors. The use of BHAR method gives a lot of power for the hypothesis testing, but in turn may reject too many nulls (type 1 errors). On the other hand, the use of the portfolio method fails to measure all relevant information when aggregating individual events to calendar time portfolios. This reduces the power of the hypothesis testing i.e (type 2 errors.)

Lyon et al. (1999) study improved methods for the long-term testing. The first method is constructed around the basic BHAR method, but Lyon et al. improve the estimates by controlling for the reported biases (a detailed discussion follows) in order to decrease the misspecifications of test statistics. The second method is based on calendar-time portfolios where abnormal retuns are calculated for sample firms. The first model for calendar time-returns for a portfolio is estimated using a regression of the Fama-French three factor model (equation 3). The estimated α_i intercept denotes a test for null hypothesis that the mean monthly excess return for a portfolio is zero.

The second method employed by Lyon et al. is for calculating Mean Monthly Calendar-Time Abnormal Returns. For an event period of three to five years, abnormal returns for portfolios are calculated first. Then for each calendar month i mean abnormal returns (MAR_t) across firms in the portfolio is calculated:

$$(6) \qquad MAR_t = \sum_{i=1}^{n_t} x_{it} AR_{it}$$

Where n is the number of stocks in the portfolio, and x_{it} describes the weight when abnormal returns are equal -or value-weighted. The grand mean monthly abnormal returns (MMAR) can be then calculated as:

$$(7) \qquad MMAR = \frac{1}{T} \sum_{t=1}^{T} MAR_t$$

A very contemporary study by Jegadeesh and Karceski (2009) states that methods suggested by Lyon et al. (1999) are now commonly used in studies concentrating on the long-term performance of corporate events. They however are concerned about some misspecifications and limitations in the Lyon et al. findings and suggestions. Therefore Jegadeesh and Karceski develop improved methods for long-term testing designed to

overcome the problems in Lyon et al. They perform the testing using the same data sample employed by Lyon et al. and their models are designed to take into consideration the similar characteristics of sample companies (e.g same industry) and also the possibility of multiple inclusions in the sample (i.e overlapping returns). Jegadeesh and Karceski propose two models for autocorrelation-consistent test statistics. These models are presented as:

$$(8) \qquad SC\_t = \frac{\overline{AR\ sample}\ (H)}{\sqrt{w'SC\_vw}}$$

$$(9) \qquad HSC\_t = \frac{\overline{AR\ sample}\ (H)}{\sqrt{w'HSC\_vw}}$$

where SC_t is the Hansen and Hodrick (1980) estimator which allows correlation across monthly cohort results but assumes heteroskedasticity. The other estimator is HSC_t which allows heteroskedasticity and serial correlation. (See Jegadeesh and Karceski 2009 for a detailed presentation of the estimator construction.)

4.2.2. Problems with long-run event studies

Because the aim of this study is to concentrate on the long-run performance of the acquirers it`s imperative to consider some methodological problems that may arise. Lately, there has been vivid discussion about how the long-term testing should be conducted and which methods should be used.
Dimson and Marsh (1986) show that discarding the size effect when conducting a long-horizon event study causes distortion in the test results, and therefore should be controlled as part of the testing. Later studies by Fama and French (1992, 1993) and Barber and Lyon (1997) confirm this. A conflicting result is reported by Lyon et al. (1999) who find that controlling for size and the book-to-market isn`t enough to produce well-specified test statistics.

As reported in Kothari and Warner and Barber and Lyon (1997) long-horizon event studies tend to produce biased test results. Part of the biases is caused by using the conventional t-statistic to measure the statistical significance of the abnormal returns.

Rau and Vermaelen (1998) report that the t-statistic suffers from assumptions of: normality, stationary and time independence of observations. Jegadeesh and Karceski (2009) state that in their tests of long-term performance of conventional t-statistics, their results imply that the in the case of industry clustering or overlapping returns the t-tests are miss-specified. They suspect that the reason is that the "…standard errors in a random sample understate the true standard errors p. 109." To avoid these problems Lyon et al. (1999) advocate the use of bootstrapped t-statistics in favor of the conventional t-test. (See Lyon et al. 1999 for a detailed discussion of the bootstrap measure)

Kothari and Warner (1997) and Barber and Lyon (1997) show that, the use of the CAR method alone for testing the long-horizon performance is susceptible for biases which can lead to flawed test results and indicate e.g. abnormal returns where they don`t exists compared to the BHAR method. They report that a *survivor bias* is possible in long-run event studies, where sample firms are tracked for the post-event period but firms which are included in the reference portfolio might start trading after the event month. *Rebalancing bias* arises when the compounded returns are calculated differently for a weighted market index and the sample firms. Also, *skewness bias* is caused by positive skewness in the distribution of long-run abnormal returns. Lyon et al. (1999) add *cross-sectional dependance* and *a bad model of asset prising* as causes for misspecification and add that the choice of methods for the calculation of the abnormal returns will determine if and how these factors affect the misspecification. Finally, Kothari (2001) lists three problems with the long-horizon event studies: *risk estimation, data problems* and *lack of a market theory of market inefficiency*.

Fama (1998) critizes both models for being susceptible for bad-model problems especially for long-term studies, because when the average abnormal returns are calculated over a long-horizon (compounded) it eventually becomes statistically significant. Antoniou et al. (2006) add that cross-sectional dependance is caused by companies which undertake several acquisitions during the long observation period, causing their measured monthly returns to become non-independent because of the overlapping of monthly returns.

Because of findings by e.g Gregory (1997), Betton et al. (2008) and Dutta and Jog (2009), who report that the choice of the comparable benchmarks -or portfolios significantly influence the test results and ultimately the conclusions drawn from them. Antoniou et al. (2006) show that in their research, results for BHAR returns were

restricted only to equal-weighted results but they couldn`t find any underperformance using value-weighting. Kothari and Warner (2006) add that despite the problems with comparable return benchmarks, their use is still necessary in order to isolate the increment effect a single event has on a security price performance.

As a conclusion it can be noted that Kothari and Warner (1997) and Barber and Lyon (1997) strongly favour the BHAR method and suggest that for future studies the use of nonparametric procedures like the bootstrapping method as ways to reduce the misspecification of long-term testing. Fama (1998) and Lyon et al. (1999) recommend that for long-run studies, researchers should apply the BHAR-method with bootstrapping and also use calendar-time portfolios for the calculation of abnormal returns.

Antoniou et al. (2006) and Jegadeesh and Karceski (2009) comment that the bootstrapping method is also susceptible for errors as it assumes that sample firm abnormal returns are independent. But because of the cyclical and clustering nature of M&A, stock returns become positively cross-correlated and thus, test statistics which assume observation independence become overstated. Therefore they strongly advocate that future long-term studies would take the cross-correlation of sample stocks in to consideration in order to obtain reliable statistical results.

In the end, much is known on how to make long-horizon event studies more accurate but so far a method that could be completely trusted doesn`t exist. Also compared to short-event studies long-horizon studies lack the power to succesfully measure the abnormal returns inside and outside of the event window. The longer the horizon, the worst are the results. (Kothari and Warner 2006.)

5. DATA DESCRIPTION AND METHODOLOGY

This chapter presents the methods used in the research paper, the sample for the study and also the hypotheses for the study of the long-term performance of Finnish publicly traded companies from January 1995 to June 2006 which complete acquisitions. As this research paper uses the event study method, all required definitions are presented next.

Event study method is usually applied to study short-term abnormal returns where the observed event period could be really short, usually denoted by e.g. [-5, 5], and the studied event is included in the observation period. This research paper uses the event study method to evaluate long-term performance and also the market model to estimate the average returns for the observation period. The market model that is used in this study is by definitions similar to equation number (2).

The average returns from the market model are estimated from the time period of [-360, -30] i.e. 360 days before the first announcement date to 30 days before it. This is done to obtain reliable estimates for the company alpha and beta estimates and also to avoid the possible build-up (e.g. Halpern 1983 mentions information leaks) related to stock returns. To minimize data lost some firms which are included in the data set have a shorter estimation period.

This study concentrates on the long-run post-merger performance and this event window is denoted by [40,750] i.e. beginning 40 days after the first announcement date to 750 days after. The three year period is chosen because the majority of studies assessing the long-term performance uses it, and it is long enough to sufficiently evaluate the effects of the M&A.

After the interesting event and the observation period are both determined, a data set for the study must be obtained. For this study, the data is received from the Thompson One Banker Deals thorough the Department of Accounting and Finance of University of Vaasa. Additional data is gathered from the databases of Helsinki School of Economics (Helecon) and Kauppalehti Online and also from the ETLA database to obtain the necessary accounting information.

5.1. Portfolio formation

After the interesting event has been chosen and event periods have been determined, criteria for streamlining the original data sample must be chosen to determine which companies are included in the study or why they are left out. Depending on the completed long-term studies, researchers use different excluding methods of factors when refining the original data. Loughran and Vijh (1997) discard target or acquiring companies which are trading at less than three dollars on the effective date. Gregory (1997, 2005) Sudarsanam and Mahate (2003) exclude acquirers that have a market value less than 10M£. Dutta and Jog (2009) exclude firms from the financial sector from their sample but include all acquisitions regardless of their size. Campa and Hernando (2006) leave out acquisitions where the buyer already owned at least 50% off the target company (a toehold). Similarly, Rosen (2006) doesn`t include toeholds where acquirers gradually increase the size of their holding and also includes only acquisition valued at least 10% relative to the acquirer. Rosen also requires that afterwards the acquirer owns at least 90% of the target to be considered as a merger.

In this study, the following requirements are adopted:

–The acquisition is listed as *completed* in the original data sample.

–Sufficient stock return data must be available for the estimation purposes of the market model and also companies must have available accounting information for the gathering of their P/E and P/B values. If the bidder has had two or stock series listed, the one with a higher liquidity is included in the sample.

–The acquisition has to be valued at least 10% compared to the acquirers book-value. This is required to study acquisitions of greater significance. The 10 % cut-off rate is also included in the OMXH Harmonized Disclosure Rules (2008) and as Ali-Yrkkö (2002) reports a majority of acquisitions made by Finnish companies have been of small targets so this limitation ensures that economically significant acquisitions are studied. Although the 10% cut-off rate might be somewhat arbitrary, e.g. Rosen (2006) mentions that his main research results hold also for acquisitions valued 5% to 25% relative to acquirers` size.

–Toeholds are allowed, if the acquirer doesn`t control over 50 % of the target before the acquisition, but does own at least 50 % afterwards, and at the same time the acquisition is at least 10 % relative to the acquirers book-value. Again, this limitation is required for the purpose of studying acquisitions of greater significance, as usually the acquirers just increases their overall holding to just over 50 % i.e usually the required level for a majority ownership, but the acquisition itself might be insignificant.

An un-necessary exclusion of firms that do not survive the full post-merger period could lead to survivorship bias. An elimination of non-survivors with negative returns would bias the sample performance estimates upwards. This bias may affect both the acquirers and also control samples used as benchmarks. Still, it`s unclear what kind of an effect the survivorship bias might have, in case of a merger or acquisition it could be positive and in case of a bankruptcy or liquidation negative. If both samples have similar elimination rates, the effect could be possibly canceled out. (Barber and Lyon 1997:356; Sudarsanam and Mahate 2003.)

For this data set, the elimination rate is only 3,4% where as Sudarsanam and Mahate (2003) report a 15,2% exit rate for non-survivors, a number previously shown to be normal with UK acquisitions. In the case where an acquirer itself becomes a target, the missing stock data for the three-year period is replaced by relevant benchmark return following the reasoning in Mitchell and Stafford (2000).

After the data selection is completed, all surviving companies are assigned to portfolios and from the original sample, 117 M&A survive the selection criteria when allowing for multiple acquisitions and 87 acquisitions survive the Mitchell and Stafford (2000) selection process i.e. only one acquisition per company is allowed for the three-year post-merger period. In table 1 is shown the descriptive statistics from the formation of the P/E and P/B portfolios.

The pre-merger valuations are calculated three months before the announcement date and companies are included to portfolios based on this valuation. If the required accounting information is unavailable the closest accounting release to the announcement date is used to minimize data lost. The surviving sample of companies is then divided to three equal parts based on their pre-merger valuation. These portfolios are labelled glamour, neutral and value. Again to minimize data lost when forming portfolios based on their P/E ratio, companies that reported negative earnings are gathered to a separate portfolio denoted by neg. P/E. So in total, four P/E portfolios and

three P/B portfolios are formed and after the formation no rebalancing is conducted following the reasoning in Mitchell and Stafford (2000).

Table 1. Descriptive statistics of P/B and P/E portfolios.

P/B portfolios (allowing multiple bids)					P/E portfolios (allowing multiple bids)				
	N	**Median**	**Low**	**High**		**N**	**Median**	**Low**	**High**
Value	39	1,10	0,28	1,56	**Value**	33	21,37	4,9	35,4
Neutral	39	2,16	1,57	2,95	**Neutral**	33	70,4	37,0	195,1
Glamour	39	5,30	3,00	80,91	**Glamour**	33	501,4	202	12220
					(Neg P/E)	18			
All acquirers (N=117)		2,14			**All acquirers (N=99)**		73,3		

As can be seen from table 1, for the P/B portfolios the median P/B value for the glamour portfolio is 2,45 times the median of neutral portfolio and almost five times the median of the value portfolio. Even higher deviation is observable in the P/E portfolios. There, the median of the glamour portfolio is over seven times the median of neutral portfolio and astounding 23,46 times the median of the value portfolio. The reported absolute high and low values in the P/E are also extremely high. Although the P/E ratio doesn`t have any theoretical (positive) limitations, the low value of 202 and a high value of 12220 are very unprecedented, and are a direct result of the baseless valuation that several companies had in the turn of the millennium. Even the reported P/E ratio for the neutral portfolio is unfamiliarly high.

Table 2. includes more descriptive statistics for the full sample. The merger activity for the study period seems to increase towards the turn of the millennium, where almost 40% of the total M&A is completed between 1999 and 2001.

Table 2. Descriptive statistics of method of payment and size.

Year of Acquisition	N	Cash	Mi-xed	Equi-ty	Portfolio Size	N	Median €	Low €	High €
1995	7	1	3	3					
1996	4	3	-	1	**Small**	39	49,0M€	10,4 M€	120M€
1997	6	5	-	1					
1998	9	3	2	4	**Medium**	39	308M€	121,2M€	772,7M€
1999	10	5	1	4					
2000	21	7	1	13	**Large**	39	1,89B€	812,8M€	12,78B€
2001	14	9	1	4					
2002	9	8	-	1					
2003	7	6	-	1					
2004	8	6	1	1					
2005	10	4	2	4					
2006 (June)	5	1	4	-					
∑	117	65	15	37					

After the global economic downturn the number of acquisitions quickly drops, and again, after the economy started to recover the M&A activity seems to be on the rise. Table 2 also shows the statistics for the size portfolios. The sizes for the bidders vary a lot, ranging from 10,4 M€ to 12,78 B€ measured by market capitalization.

In this sample, over a half of the M&A are financed using cash only, about one third using equity only and 15 M&A are financed by the acquirer using both cash and equity (denoted by mixed). Faccio and Masulis (2005) report that for their European sample a majority of deals is financed using cash only (about 80%) with the lowest procentages reported in Finland (66%) and Norway (69%). For US Betton et al. (2008) report that the mixed form of payment is the most used followed by all equity deals and all cash deals, and for the UK Sudarsanam and Mahate (2003) state that over 60% of the deals in the sample are financed using the mixed method of payment and the rest spread between all equity and all cash deals. The uneven deviation creates also problems for the present study when drawing the statistical inferences for each of the portfolios.

5.2. Calculation of abnormal returns

The abnormal returns for each stock in the portfolio are done by firstly calculating their daily abnormal returns:

$$(10) \qquad AR_{it} = R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt})$$

where AR_{it} is the abnormal return for the stock in the portfolio on day t, R_{it} is the observed daily return and $\hat{\alpha}i$ and βi parameters respectively are estimators calculated using the market model. After the abnormal returns for individual stocks are calculated, the long-run BHAR returns for stocks are then calculated using equation (5).

The performance of the portfolios is then compared to the OMXH25 and OMXH general indexes, as many studies (e.g. Gregory 1997 and Rosen 2006) compare the long-term performance of the portfolios to the general stock indexes. The performance of an individual portfolio is then compared to the index using average abnormal buy-and-hold returns, calculated as:

$$(11) \qquad ABHAR_T = \frac{1}{N} \sum_{i=1}^{N} BHAR_{i,T}$$

where, $ABHAR_T$ is the average abnormal return across a portfolio of companies during a holding period *T*.

5.3. Statistical significance

In order to draw reliable conclusions about the calculated abnormal returns and their meaningfulness, a statistical method must be employ to test the null hypothesis. A standard t-test is used to observe if the BHAR returns are significantly different from zero and also if the calculated means differ significantly from one another. Although its` reported limitations, the t-test is and long has been used as the method for testing short – and long-horizon post-event abnormal returns. In this study the following measure for testing the t-value is employed:

$$(12) \qquad BHAR_t = \frac{\overline{BHAR_{it}}}{(\sigma BHAR_{it} / \sqrt{N})}$$

$$(13) \qquad \sigma BHAR_{it} = \frac{1}{N} \sqrt{\left(\sum_{i=40}^{750} (AR_{it} - R_{mt})^2 \right)}$$

where, $BHAR_{it}$ is the portfolios average ABHAR return and $\sigma BHARit$ is the cross-sectional standard deviation of 36-month mean abnormal returns.

5.4. Theoretical background

This section presents the theoretical background of the testable hypotheses. The main hypotheses tested in this study are constructed based on findings by Rau and Vermaelen (1998) in the US, and Sudarsanam and Mahate (2003) in the UK, who find that acquirers pre-merger valuation affects the long-term performance of M&A. As proxies of the valuation, these studies use acquirers P/E –and B/M-ratios, which are also chosen for this research paper. Also hypotheses for the method of payment and size are tested. The method of payment hypotheses was also tested by Rau and Vermaelen and Sudarsanam and Mahate who show that cash financed acquisitions outperform those financed with equity. Because of findings by Bauman et al. (1998) whom show that value firms generally outperform similar sized glamour firms, I also test if acquirer size affects the long-term post-merger performance.

5.4.1. P/E ratio

The price-earnings ratio (later P/E) is a simple and much used performance ratio. It`s the current share price divided by most recent reported earnings per share. In a sector level it is the current market value of all sector companies divided by total sector earnings. A high P/E ratio implies that investors have high growth expectations for a specific company, although irregular events affecting the share price naturally affects the P/E ratio. A divergence of a sector average P/E might mean that a company is under –or overvalued. Also and evident problem using the P/E ratio is that it uses accounting profits instead of expected cash flows. The P/E ratio could also be considered as a payback period, where e.g a P/E value of 18.7 would mean that it will take 18 or 19 years to recover the initial investment back. (Pike and Neale 2006: 45, 97.)

Basu (1977) was one of the first to study how a firms P/E ratio affects its performance. Basu formed portfolios consisting of firms with similar P/E ratios and compared their risk-return performance. Also the return of the low P/E portfolio was compared to a portfolio constructed with random stocks to test the efficient market hypothesis. Basu shows that portfolios with the lowest P/E ratios outperformed portfolios with a higher P/E ratio, a result generally robust when adjusting for the risk accordingly. Basu concludes that the information concerning the P/E ratio wasn`t completely assessed in the security prices as quickly as it should have been, at least not during the studied time frame. This result implies that the semi-strong form of the efficient market hypothesis didn`t hold but couldn`t been completely denied.

Booth, Martikainen, Perttunen and Yli-Olli (1994) tested the E/P anomaly using US and Finnish data for the period of 1976 – 1986. Their results confirm the existence of the E/P anomaly in the US and also confirm the similar existence in Finland. Booth et al. conclude that the results are interesting considering the major differences between the Finnish stock market and other major stock markets. Pätäri and Leivo (2009) also examine how portfolios constructed using e.g the E/P ratios perform against a market portfolio in Finland. They report that a value portfolio constructed on the basis of the E/P ratio outperforms the market portfolio statistically significantly during the observation period from 1993 to 2008, but conclude that when a more precise measures for kurtosis and skewness are used, the result isn`t significant no more.

Anderson and Brooks (2006) offer additional evidence on performance of the P/E ratio. Studying UK firms from 1975 to 2003, Anderson and Brooks are able to show that increasing the number of years from which the P/E is calculated, significantly increases the predictive power of the P/E ratio. When using eight years of returns compared to one, the observed value premium between glamour and value deciles is almost doubled. Anderson and Brooks note that predictive power of the P/E ratio isn`t linear (years two and three perform badly) and also mention that the bid-ask spread and liquidity had effect on the value premium although marginal.

Welch and Goyal (2008) study several factors which in the financial literature have been suggested as predictors for the equity premium, one being the E/P ratio. They employ a conventional ordinary least squares (OLS) approach but statistical significance of the variables is computed using bootstrapped F-values. Using the S&P 500 index returns from 1926 to 2005, Welch and Goyal state that for the E/P ratio, the general results show insignificant predictive performance and only vaguely significant

performance on certain specific time periods. Overall, almost all models based on these predictors are unstable and perform badly. Welch and Goyal do admit that their analysis are simple but nevertheless offer additional information of the validity of these models and how to improve them in the future.

A very recent study by Barnhart and Giannetti (2009) studies also the predictive power of E/P ratio (earnings yield) and its` predictive power in the US. The research divides the E/P ratio to winner and loser components based on quarterly earnings releases from companies, and measures the future stock return capabilities of these. Barnhart and Giannetti find that the E/P ratio has predictive power for S&P 500 quarterly returns but report that the negative earnings component (denoted EPLOS) is the main reason behind this. They also report that when implementing market-timing strategies for assessing the forecasting capabilities of the earnings measures, only the EPLOS measure is able to generate excess returns which leads Barnhart and Giannetti to conclude that "… the negative earnings component is the driving factor behind the aggregate earnings-price yield and in our ability to significantly predict future market returns p. 83 ".

Firms considered as glamour acquirers are those which have high values as result from a prior stock market performance. These stocks have high P/E and high market to book value ratios. Inversely companies with low P/E and market to book values are considered as value stocks. They could be undervalued but may offer positive value gains in the future. More precisely, glamour firms have high growth rates and value firms have low growth rates (Sudarsanam and Mahate 2003.) Rau and Vermaelen (1998) state that for glamour firms, the ultimate decision makers (i.e large stock holders or a board of directors) are more likely to accept acquisition proposals from company management than value firm owners, whose company may have have suffered from a poor track record and thus are more careful at approving major transactions. Rau and Vermaelen report that this means that company directors aren`t suffering from the hubris and therefore these acquisitions "…should create shareholder value rather than destroy it p.226".

International evidence of the performance for value vs. growth is provided by Bauman et al. (1998). They study the performance of value vs. growth stocks in 21 countries, to test if value stocks outperform growth stocks in non US-markets also. The study period is from 1986 – 1996 and stocks are placed into portfolios based on four different valuation methods one being the P/E ratio. The results for the full sample show that

value stocks (measured by the P/E ratio) outperform glamour stocks on a 1% significance level.

As an explanation for the underperformance of M&A Rau and Vermaelen (1998) propose a *performance extrapolation hypothesis*, where market participants would give too much weight for the previous success of a bidding company concerning the announced M&A bid. More specifically, Rau and Vermaelen argue that bidding company managers are overoptimistic about their own abilities to manage the forthcoming acquisition, and so, would be infected by hubris. They find evidence supporting the hypothesis and show that markets are overly optimistic about the prospects of glamour bidders and vice versa, overly pessimistic about value bidders whom aren`t infected by hubris. Sudarsanam and Mahate (2003) test the same hypothesis for the long-term performance of M&A in the UK and find also supporting evidence for it. While Rau and Vermaelen (1998) don`t use the P/E ratio as a proxy for the glamour/value status, Sudarsanam and Mahate advocate the use of it as "since P/E is more widely used as a valuation tool in acquisition valuation… p.303". This leads to the first hypothesis, stated as:

> H1: Low P/E acquirers (value acquirers) outperform high P/E acquirers (glamour acquirers)

5.4.2. B/M ratio

The book-to-market ratio (B/M) has become a factor as a determinant of future expected returns. It has been shown that the B/M ratio explains a significant portion of cross-sectional variation in average returns. This could be because the B/M ratio proxies for future cash flows, and thus is a proxy of cash flows for the current price level. More specifically, holding expected cash flows constant, a positive increase in discount rate leads to a lower market value but to a higher B/M ratio. Still, the observed effects have been weaker on larger firms and the results might also been somewhat affected by data mining. (Kothari and Shanken 1997; Pontiff and Schall 1998.)

The Price-to-Book (P/B) value is calculated as market value of a company's market value of its assets divided by their book value. As measure of the current valuation, the higher the P/B value the higher is the appropriate valuation used by investors. A relative high market valuation, high profitability etc. are factors which increase the observed

market value but don`t affect the book-value. The P/B ratio follows the development of the return of assets (ROA), i.e. the higher is the ROA the higher is the value of P/B value. Companies with high P/B ratios are considered to have high levels of profitability and growth or those that have intangible assets that carry growth potential. (Kallunki et al. 2009.)

An influential study by Fama and French (1992) reports that BE/ME factor has a stronger relation to average returns than the size effect. For the research period from July 1963 to December 1990 portfolios formed on the basis of BE/ME ranks, show strong positive relation between average return and BE/ME. The reported effect is twice as large as the difference between average returns of the smallest and largest size portfolios. Furthermore, the combination of ME and the BE/ME factors include the apparent roles of leverage and E/P ratio in average returns. Also an important finding is that on average, low BE/ME companies have continuously high earnings compared to high BE/ME firms which tend to have persistently low earnings.

Fama and French (1993) expand their earlier research and test how time-series regressions especially their slopes (i.e. "factor loadings that unlike size or BE/ME have a clear interpretation as risk factor sensitivities for bonds as well as for stocks" p.4) and R^2 values show if size and BE/ME risk factors capture shared variations of stocks and bonds that other factors can`t explain. The results prove that portfolios made to mimic risk factors related to size and BE/ME capture this variation, depend less of what else is included in the time-series regressions. A result what Fama and French consider as evidence that size and BE/ME are proxies for the sensitivity of common risk factors in stock returns. The researchers do however point out that these factors alone can`t explain the substantial difference of average returns of stocks and the one-month bills, this is attributable for a market factor.

Kothari and Shanken (1997) test the predictive powers of B/M ratio and the dividend yield on the US market. They use a bootstrap simulation to test the null hypothesis i.e no predictive power, and also to test the economic significance of its determinants, i.e the B/M ratio and the dividend yield. For a time period from 1926–91, they find evidence that both ratios track the time-series variation in expected real one-year stock returns. Still, Kothari and Shanken state that despite the success of the B/M ratio in explaining cross-sectional variations of stock returns, it appears that the forecasting power varies from time to time, and therefore should be remembered when making

future investment decisions. Welch and Goyal (2008) report that the B/M had excellent predictive power until the oil shocks of the 1970s, but perform indifferently afterwards.

Also motivated by the Fama and French (1992) study, Pontiff and Schall (1998) investigate how an aggregate B/M ratio forecasts market returns on Dow Jones Industrial Index (DJIA). They report a similar result as Kothari and Shanken (1997) i.e the B/M ratio predicts market returns, but additionally report its` capability to predict the excess returns of small firms over large firms. Pontiff and Schall find also evidence of a cross-sectional relationship between the B/M ratio and cash flows and recommend that future research should be conducted on this relation in order to better understand the relation of B/M and returns.

On an international level Bauman et al. (1998) report that portfolios constructed using the P/B value and dividing the sample companies to value and growth firms, value portfolios outperform glamour firms on a statistically significant 1%-level, a result consistent with previous US studies. On a country level value stocks performed best in Australia, France, Germany and Japan whereas growth firms outperformed in the UK. In Finland, Pätäri and Leivo (2009) report that during their study period neither the glamour nor value portfolios constructed using the B/P values, statistically differ from the returns of the market portfolio which is an unusual finding. They do report that value portfolios nevertheless perform better than the glamour portfolios.

Cohen, Polk and Vuolteenaho (2003) study what part of cross-sectional dispersion in book-to-market ratios is caused by variation of expected stock returns, and how much is caused by variation in expected cash-flow growth. They examine the US markets for a long time period and also study international panel data. Cohen et al. report that their findings suggests that 20 to 25 % of the book-to-market dispersion is due to dispersion in expected stock returns, and rest due to dispersion in expected profitability. Cohen et al. also report that for value strategies (long on value stocks, short on growth stocks), the expected return on value-minus-growth coincides with times when the value spread is high and the market is cheap i.e. it`s time varying.

Eleswarapu and Reinganum (2004) also study the predictability of stock returns focusing on value and growth stocks. They report that annual excess returns of the stock market (over the risk-free rate) are negatively related with past returns of glamour stocks. While Eleswarapu and Reinganum are unable to find any predictive power for value stocks, a glamour stock portfolio continues to predict future stock returns. This

finding implies that the probability of a major stock market decline increases following periods when glamour stocks have performed exceptionally well. Welch and Goyal (2008) also suggests further research on e.g. predicting disaggregated returns of value and growth stocks. They speculate that value stocks could respond more strongly to dividends, while growth stocks could respond more to book-to-market factors.

As discussed earlier, Rau and Vermaelen (1998) and Sudarsanam and Mahate (2003) both use B/M proxy as a valuation method for value and growth acquirers. Both studies report that value firms clearly outperform glamour acquirers, thus I construct the following hypothesis:

> H2: Low ME/BE acquirers (value acquirers) outperform high ME/BE acquirers (glamour acquirers)

5.4.3. Method of payment

The chosen method for the payment of the M&A is an important one for the acquirer, as they can make a decision to use either cash or issue new equity to finance the M&A. Several studies have examined the reasons that influence the choice of payment and also how it affects the overall outcome of the M&A afterwards. Also the current valuation of the acquirer has been shown to influence the chosen method, e.g. overvalued companies have an incentive to use their stock to finance the acquisition and use cash otherwise. Sudarsanam and Mahate (2003) describe this as an adverse selection problem where the acquirer and the target have a problem on how to adequately value the counterpart if one or the other has private information of the true value of their company.

Several studies have also examined if the type of the merger (a merger or a tender offer) and how it has been has financed affects the long-term performance of the acquirer. For US e.g. Agrawal et al. (1992) find but don`t report that tender offers completed using equity fare worse than those financed with cash and they find a similar result for mergers also. Loughran and Vijh (1997) show that mergers completed using equity earn a statistically significant negative returns of -25% compared to similar sized reference stocks, and also that tender offers financed with cash earn statistically significant positive returns of 61,7% compared to reference stocks. They though are a bit cautious when interpreting the results, as they could be limited to the type of the acquisition or caused by overoptimistic beliefs of markets or managers. In the UK e.g. Gregory (1997)

reports that equity financed M&A perform worse compared to cash financed and the initial findings by Antoniou et al. (2006) confirm this but when they apply the corrected t-test method the observed underperformance of equity financed M&A disappears.

Faccio and Masulis (2005) study also European M&A markets, stating that European markets offer an excellent opportunity to examine several factors related to M&As which don`t exists in the US markets. Faccio and Masulis argue that when making M&A finance decisions, the bidder is facing a choice between cash –or equity finance and their different implications. Cash offers e.g usually require more debt financing leading to possible distress problems and equity financing in the other hand to corporate control issues. These corporate control issues might be related to stock holding changes or the ultimate power to control a firm. Faccio and Masulis show that corporations prefer to use cash financing when there is a possibility of surrendering shareholder voting power. On the other hand, bidders' frequency to use equity finance increases if the measures of their financial conditions get worse.

Rau and Vermaelen (1998) test a means of payment hypothesis that long-run abnormal returns for acquirers will be on average negative in equity-financed and positive in cash-financed deals. They find some supporting evidence for this hypothesis, reporting that in the merger sample bidders typically pay using equity and cash in the tender offers. More presicely glamour bidders pay with stock more frequently as compared to value bidders but the means of payment hypothesis cannot predict the significant difference in the tender offer sample were glamour acquirers fare much worse than value bidders. Sudarsanam and Mahate (2003) conduct a similar test in the UK reporting supporting results. They find that in high P/E portfolios there is higher tendency to use equity as a source of financing the bid than cash, and an opposite result in the low P/E portfolio. They also report evidence that for the long-term post-merger period, cash bidders generally statistically outperform equity bidders. These findings lead to the following hypotheses:

> H3: Bidders using cash as a method of payment will outperform bidders using equity as a method of payment

5.4.4. Size

An observable size effect would have important implications to both practioners and academics. For asset management purposes the notion that small firms could yield higher returns is particularly interesting, and for academics too, because a finding of a risk-based explanation for the size effect would affect the standing academic view of alternative asset prising models and thus impact the current research methods like the event-study method and fund performance evaluation. It`s also of importance to study if the size effect exists on international level, as various factors and characteristics like corporate finance decisions or the level of market efficiency varies from country to country. (van Dijk 2007.)

Banz (1981) is one of the earliest studies concentrating on the size effect and how it affects average returns. Banz studies stocks listed in NYSE in the 1936-1975 period and finds that small firms had, on average, higher risk-adjusted returns than the stock of large firms. He shows that size effect isn`t linear, varies over time (it has a negative value in 1946 – 1955) and it`s most pronounced for the smallest firms in the sample while the differences between medium and large firms are insignificant. In the UK Dimson and Marsh (1986) show that a size effect causes distortions in long-run event studies, and thus produce different results depending if an equal –or a value-weighted performance method is used. They strongly advocate that size-adjusted methods should be used in event studies.

The Fama and French (1992, 1993) studies which report that company size (measured by a stock`s price times shares outstanding, ME) is an important factor explaining the cross-sectional variation in stock returns. When constructing portfolios based on size only and observing their performance the Fama and French (1992) study confirms the findings in Banz (1981) i.e there seems to exist a strong negative relationship between size and average return. Fama and French also show that the smallest decile of firms outperforms the largest firms by 0,74% per month, and that small companies have higher returns in all stock indices which they study. In Fama and French (1993) they expand their previous study by testing stock and bond returns. The results confirm that portfolios designed to mimic size and BE/ME factors capture the normal variation in stock returns and therefore size and the BE/ME factors proxy for the sensitivity to common risk factors in stock returns. Fama and French note that, in almost all BE/ME quintiles, average returns tend to diminish when moving from small –to bigger-size portfolios.

Fama and French (2008) paper discusses several previously observed anomalies, their causes and empirical shortcomings when studying them. They argue that e.g. when studies are reporting results for equal-weighted returns for different size decile portfolios, the researchers usually are focused on comparing the extreme size deciles (large vs. micro cap) which Fama and French mention could be a problem as micro cap stocks account only for roughly 3% of the overall index values but 60% of the total number of stocks. Fama and French show that when measuring equal-weighted returns micro cap stocks increase the average equal-weight return considerably. The opposite is observed when comparing the value-weighted returns which are dominated by large cap stocks, now the observed average value-weight retuns across all stocks is close to average large cap portfolio return. Fama and French report that their results imply that the size effect itself is strongest among the micro caps and has some effect on small and large companies and their average returns.

Pätäri and Leivo (2009) examine if the size (Fama-French SMB factor) effect has any impact on the observed value premiums when it is added to the regression models. When comparing value and glamour portfolios Pätäri and Leivo report that although size does create changes to the originally observed results, they aren`t statistically significant leading them to conclude that the size anomaly does not explain the value premium in Finland

Moeller et al. (2004) focus on company size and how it affects the observed *announcement* period returns of M&A. For a large US sample they show that small acquirers make profitable acquisitions, although small in absolute dollar value, whereas large firms in the other hand make large acquisitions but also suffer large losses. Also, regardless of the payment used in the acquisition small firms display higher announcement period returns, results which are un-reversed over time (tested for different subsamples).

Moeller et al. also study the reasons behind the observed size effect. They state that small firms use cash more likely than equity to finance the acquisitions and also that small and large firms have different characteristics which could help to explain the size effect. The authors also report that in their sample equally-weighted abnormal returns and similarly weighted abnormal dollar returns have opposite signs, an inclination of a size effect. In the UK, Antoniou et al. (2006) state that the significant long-run BHAR underperformance is observed only on equal-weighting and not in value-weighting leading them to suspect that small firms are cause for the underperformance.

Although studies which account both acquirer size and the valuation effects are scarce, international evidence is provided by Bauman et al. (1998) whom report that small non-US companies fared considerably better than larger firms but that the observed quartile returns decrease as the quartile size increases. The reported return spread between the smallest –and largest cap is 11,2% (significant at 1% level) but Bauman et al. note that the sample median for the smallest portfolio is very small and the standard deviation very large. (See Fama and French 2008 for implications.)

Bauman et al. further examined how value and growth firms performed in similar size deciles. They report that both the value –and the size effects influence the observed average returns in all size deciles. The smallest value firms when measured by their P/B value had the highest average returns in all size deciles (27,5%), and the largest value firms outperformed their glamour counterparts by the highest margin (7,4%). To test if similar value –and size effects are observable in Finnish M&A, I test the following hypothesis:

H4: Value acquirers will outperform similar sized glamour acquirers

6. EMPIRICAL FINDINGS

This section presents the empirical findings of the current study. This study has concentrated on the long-term post-merger performance of Finnish acquirers. The empirical tests have been done for 117 and 87 companies for a three-year post-merger time period starting from the original announcement date of the merger. Previous chapter has described the methodological approach and the statistical tests which have been used.

6.1. Do acquirers underperform?

In table 3 is shown the empirical results for the whole sample, the results are presented for multiple –and single bids. The results for the whole sample show that acquirers underperform following their merger bids. Also the choice of leaving multiple bids out of the sample doesn`t alter the reported results as they also underperform on a 5%-significance level. Multiple bidders have negative returns of -73,44% and -71,76% and single bidders -51,42% and -49,23%. All reported t-values are significantly negative at the 5%-level and appear to be very similar for both benchmark indexes, the differences between means aren`t significant for multiple or single bidders.

Table 3. The long-term performance of single –and multiple bidders.

		OMXH index				OMXH25 index		
Buy and Hold Abnormal Returns for Acquirers								
	N	ABHARpf %	Std. ABHAR	T-statistics	N	ABHARpf %	Std. ABHAR	T-statistics
Multiple bids	117	-73,44	3,304	**-2,055****	117	-71,76	3,281	**-2,022****
Single bid	87	-51,42	2,473	**-2,229****	87	-49,23	2,442	**-2,162****

*,**,*** denotes statistical significance at 1%, 5% and 10% levels, respectively. ABHARpf% is the sum of the portfolios BHARit and Std.ABHAR denotes the standard deviation of the portfolio calculated from equation (12).

The results are also very similar to other international studies. In the US e.g. Agrawal et al. (1992) and Rau and Vermaelen (1998) report that acquirers significantly underperform, and in the UK the same is reported by e.g. Gregory (1997) and Sudarsanam and Mahate (2003). Overall the results suggest that acquirers clearly underperform, but it could be too premature to confirm these results. As has been discussed earlier, several problems and biases affect the outcome of long-term event-studies and ultimately the conclusions drawn from them. Next, a more detailed look is provided of the reported results as I further evaluate different causes affecting the long-run results.

6.1.1. Results for P/E portfolios

This section presents the empirical findings of the Finnish post-merger performance for both samples when portfolios are constructed based on the company pre-merger P/E ratio.

Table 4 presents the empirical findings of value, neutral, glamour and the negative P/E portfolios compared to the OMXH general- and OMXH25 indexes. The results clearly show that on a 1% confidence-level, the neutral, glamour and the negative P/E portfolios underperform while the value portfolio seems to perform in a very similar way as both indexes. Only the value portfolios have a positive sign and abnormal returns of 0,96% and 1,35% although either isn`t close to being statistically significant. The negative abnormal returns for glamour, neutral and neg. P/E portfolios range from -38,61% to -11,73%. Although the number of stocks in the negative P/E portfolio is less than in the others and thus not really an exact comparable to the other portfolios, the neg. P/E portfolio exhibits high negative abnormal returns and thus, high negative t-values of -6,436 and -6,574 indicating that this portfolio (and the stocks included) suffer immensely after completing M&A. The performance of the neg. P/E portfolio is actually very similar to the glamour portfolio.

The reported results also are very similar to those reported in e.g Rau and Vermalen (1998) for the US and in Sudarsanam and Mahate (2003) for the UK. None of the portfolios seem to positively outperform their benchmark indexes, a similar result as in th UK, but Rau and Vermaelen report that value acquirers had positive abnormal retuns (7,4% for mergers). Bauman et al. (1998) finds also that on an international level, when portfolios are constructed using the P/E ratio, value firms outperform growth firms on a 1%-significance level.

Table 4. P/E portfolios long-term performance.

Buy and Hold Abnormal Returns for Acquirers				
OMXH index				
	N	ABHARpf%	Std.ABHARpf	T-statistics
Value	33	0,96	0,029	0,209
Neutral	33	-11,73	0,772	**-2,646***
Glamour	33	-38,61	0,990	**-6,789***
Neg.P/E	18	-20,75	0,744	**-6,574***
OMXH25 index				
	N	ABHARpf%	Std.ABHARpf	T-statistics
Value	33	1,35	0,784	0,301
Neutral	33	-11,88	0,769	**-2,691***
Glamour	33	-37,99	0,987	**-6,697***
Neg.P/E	18	-20,26	0,742	**-6,436***

*,**,*** denotes statistical significance at 1%, 5% and 10% levels, respectively.
ABHARpf is the sum of the portfolios BHARit and Std.ABHARpf denotes the standard
deviation of the portfolio calculated from equation (12).

In table 5 is reported the empirical findings using the Mitchell and Stafford (2000)
portfolio formation. The number of companies drops to 87 from 117 as multiple bidders
are excluded from the sample. The overall results are strikingly similar to table 4. Value
firms don`t display any statistically significant returns but neutral, glamour and the neg.
P/E portfolios all earn statistically negative abnormal returns. Compared to table 4 the
observed negative abnormal returns are now lower, ranging from -27,76% to -5,49%.
Similar results are reported by Loughran and Vijh (1997). When they exclude multiple
bidders from their sample, the results are similar as for the whole sample i.e acquirers
underperform.

Table 5. P/E portfolios long-term performance (single bid allowed).

Buy and Hold Abnormal Returns for Acquirers (P/E)				
OMXH index				
	N	ABHARpf%	Std.ABHARpf	T-statistics
Value	25	-0,71	0,596	-0,239
Neutral	25	-10,34	0,581	**-3,558***
Glamour	25	-27,76	0,727	**-7,377***
Neg. P/E	12	-14,23	1,095	**-3,750***
OMXH25 index				
	N	ABHARpf%	Std.ABHARpf	T-statistics
Value	25	0,83	0,594	0,279
Neutral	25	-8,23	0,579	**-2,844***
Glamour	25	-20,16	1,316	**-3,063***
Neg. P/E	12	-5,49	0,737	**-2,149****

*,**,*** denotes statistical significance at 1%, 5% and 10% levels, respectively.

In table 5 is reported the empirical findings using the Mitchell and Stafford (2000) portfolio formation. The number of companies drops to 87 from 117 as multiple bidders are excluded from the sample. The overall results are strikingly similar to table 4. Value firms don`t display any statistically significant returns but neutral, glamour and the neg. P/E portfolios all earn statistically negative abnormal returns. Compared to table 4 the observed negative abnormal returns are now lower, ranging from -27,76% to -5,49%. Similar results are reported by Loughran and Vijh (1997). When they exclude multiple bidders from their sample, the results are similar as for the whole sample i.e acquirers underperform.

Some peculiar changes though are worth mentioning. When comparing the performance of value firms in tables 4 and 5, it seems that in full sample they had positive signs for both benchmarks but in table 5 and compared to OMXH index they have a negative sign. What is also interesting is that reported the abnormal returns for glamour portfolios differ significantly from each other at a 1%-significance level, ranging from -27,76% (OMXH) to -20,16% (OMXH25). Similar deviation wasn`t observed when

allowing multiple bids for acquirers. There is also an interesting difference with the standard deviations of these two. The Std.ABHARpf for the glamour portfolio is a lot lower when compared to OMXH index than OMXH25 index. The latter is also higher than what was reported in table 4 although the total number of stocks in the portfolio is lower. This finding implies that some stocks have a higher correlation with the OMXH index than with the OMXH25, but also that using several benchmarks is recommend, although it doesn`t alter the reported results. The t-values for the neg. P/E portfolio seem to vary also, but the result could be more of a product of the low number of stocks (N=12) which affects the statistical inferences.

In the end, when using the P/E ratio as the valuation method, leaving multiple bidders out of the sample doesn`t change any of the previously reported results and based on the findings in tables 4 and 5, the results show that hypotheses H1 is strongly supported.

6.1.2. Results for P/B portfolios

This section presents the empirical findings of the Finnish post-merger performance for the full sample when the portfolios are constructed based on the company P/B ratio.

Table 6 presents the performance of the P/B portfolios compared to the OMXH and OMXH25 indexes. The reported results show that only the glamour portfolio underperforms statistically significantly and the result is similar for both benchmarks. The glamour portfolios have very high negative abnormal returns of -53,37% and -51,34%. These ABHARpf values for the glamour portfolios are six or seven times higher than those of value or neutral portfolios. Also the standard deviation of the glamour portfolio is the highest of the portfolios. The neutral portfolio has a t-value of -1,45 which is close of being statistically significant at the 10% level when comparing to the OMXH index, but becomes only -1,356 for the OMXH25 index. An interesting result compared to P/E portfolios is the negative sign for the value portfolios. Although not statistically significant, it implies that value firms were unable to undertake profitable acquisitions, while e.g Rau and Vermaelen (1998) reported a statistically significant positive performance for value acquirers.

Table 6. P/B portfolios long-term performance.

Buy and Hold Abnormal Returns for Acquirers				
OMXH index				
	N	ABHARpf%	Std. ABHARpf	T-Statistics
Value	39	-6,84	0,948	-1,155
Neutral	39	-8,21	0,907	-1,45
Glamour	39	-51,34	1,415	**-5,808***
OMXH25 index				
	N	ABHARpf%	Std. ABHARpf	T-Statistics
Value	39	-8,78	0,967	-1,45
Neutral	39	-7,67	0,905	-1,356
Glamour	39	-53,37	1,383	**-6,180***

*,**,*** denotes statistical significance at 1%, 5% and 10% levels, respectively.

In table 7 is shown the results when multiple bidders are left out of the sample. The results are quite similar to table 6 but some changes do appear. The value portfolios again don`t show any statistically significant performance and the original signs remain the same. Neutral portfolios in the other hand, now appear to underperform on a 5%-significance level, the t-values being -2,332 and -2,15. The reported ABHARpf value for the neutral portfolio is almost identical with table 6 but the standard deviation is lower for single bidders. This result is a bit puzzling as it suggests that neutral valuation multiple bidders could actually fare better than single bidders. An opposite result is observable in the glamour portfolio where the reported underperformance becomes much lower but the reported t-values actually become higher than in table 6.

The reported result for P/B portfolios compared to both indexes are very similar to those reported in Rau and Vermaelen (1998), Bauman et al. (1998) and Sudarsanam and Mahate (2003). A different result is found by Petmezas (2009) who reports that mean differences between high –and low valuation bidders to be insignificant for the three-year post-merger period.

Of course, the reported results could again be affected by measurement problems and other biases. Still, like in table 6 the original hypotheses H2 is supported, although all reported signs in tables 6 and 7 are negative suggesting that companies undertaking M&A underperform, the results clearly support the stated hypotheses H2 i.e. value firms outperform glamour firms when their P/B values are used.

Table 7. P/B portfolios long-term performance (single bid allowed).

Buy and Hold Abnormal Returns for Acquirers				
OMXH index				
	N	**ABHARpf%**	**Std.ABHARpf**	**T-statistics**
Value	29	-3,71	0,733	-0,939
Neutral	29	-8,82	0,703	**-2,332****
Glamour	30	-43,01	0,961	**-8,172***
OMXH25 index				
	N	**ABHARpf%**	**Std.ABHARpf**	**T-statistics**
Value	29	-3,47	0,731	-0,881
Neutral	29	-8,10	0,700	**-2,15****
Glamour	30	-45,16	0,893	**-9,224***

*,**,*** denotes statistical significance at 1%, 5% and 10% levels, respectively.

6.1.3. Results from Method of payment

The results from the empirical tests of method of payment and it`s effects to the long-term post-merger performance are shown in table 8. The observed results show clearly that acquirers using only equity or a mixed finance underperform the benchmark indexes on a statistically significant 1% level. For the M&A which were completed using cash to finance them, the results aren`t nearly as conclusive. Acquisitions completed using cash only perform also poorly with negative abnormal returns of -20,5% and -19,96% compared to the benchmarks. Their reported t-statistics (-1,545 and -1,570) are very close to being statistically significant at the 10% -level (a t-value of 1.645).

Table 8. The effect of method of payment to long-term performance.

Buy and Hold Abnormal Returns, Method of Payment				
		OMXH index		
	N	**ABHARpf%**	**std.ABHARpf**	**T-statistics**
Cash	65	-19,96	1,603	-1,545
Mixed	15	-16,76	0,448	**-9,657***
Equity	37	-39,98	1,222	**-5,381***
		OMXH index		
	N	**ABHARpf%**	**std.ABHARpf**	**T-statistics**
Cash	65	-20,50	1,619	-1,57
Mixed	15	-16,66	0,439	**-9,801***
Equity	37	-27,60	1,149	**-3,950***

*,**,*** denotes statistical significance at 1%, 5% and 10% levels, respectively.

The high number of stocks in the cash portfolio does increase the validity of the observed t-value while the results for the mixed portfolio with a low number of stocks might remain inconclusive despite its` high t-value. The differences between the benchmark indexes are also minimal as only in the equity portfolio happens sizable changes. When comparing the reported ABHARpf values for equity portfolio, it is significantly smaller when the performance is compared to the OMXH25 index than to OMXH index. The difference between reported t-values for equity portfolio differs from one another at the 1%-significance level.

The reported results are broadly similar when compared to other international studies. For US Loughran and Vijh (1997) report that equity financed *mergers* underperform statistically significantly but mixed or cash financed merger deals don`t. For *tender offers* they report that cash deals underperform. Moeller et al. (2004) on the other hand don`t report any statistical abnormal performance for their long-run sample. In the UK Sudarsanam and Mahate (2003) report that cash acquirers clearly outperform equity bidders. For the post-merger period, cash bidders earn abnormal returns ranging from -2% to 14% compared to equity bidders -2% to -57%. The results by Petmezas (2009) also show that almost all deals (cash, equity or mixed) underperform the following three year post-merger period. He also reports that the observed magnitude of the underperformance increases from the first post-merger year to the third-post merger

year. Overall though, the reported results in table 8 support the H3 as cash bidders although having a negative sign, outperform equity bidders.

6.1.4. Results for Size

Table 9 shows the results of acquirer performance when portfolios are constructed using market capitalization as a measure of size. The results are very clear, showing that both medium and small acquirers clearly underperform at a statistically significant 1%-level. And also what is notable is that medium acquirers have an ABHARpf value about twice higher than the small firms and over five times higher than large firms. The large bidders also have a negative sign suggesting that they fare worse than the benchmark indexes, but the negative abnormal returns of -7,62% and -7,32% and the reported t-values (-1,175 and -1,22) are far from being statistically significant.

Table 9. Long-term performance of large, medium and small acquirers.

		Buy and Hold Abnormal returns			
Acquirer size		*OMXH index*		*OMXH25 index*	
	N	**ABHARpf%**	**T-values**	**ABHARpf%**	**T-values**
Large	39	-7,62	-1,175	-7,32	-1,22
Medium	39	-42,98	**-5,89***	-41,24	**-5,68***
Small	39	-21,71	**-3,00***	-21,81	**-3,01***

*,**,*** denotes statistical significance at 1%, 5% and 10% levels, respectively.

The results imply that a measurable size effect affected the Finnish M&A at least during this observation period, but at the same time the results are somewhat inconsistent with other earlier studies. This finding might be caused by the fact that the employed benchmark indexes do not sufficiently control for company size. Another plausible reason might be that the managers of large companies are more capable than their small firm counterparts or that small firm managers might be affected by hubris. (Confirming tests for these possibilities are left for future studies). Bauman et al. (1998) show, that small firms had the highest overall returns and also the highest standard deviation each year. They also report that the reported returns got smaller as the size decile grew. Moeller et al. (2004) state that for their full sample they were unable to find any

statistical differences between large and small acquirers, but the results show that when they acquire private companies large firms outperform small bidders significantly.

In table 10 is shown the calculated t-values for each individual size portfolio which are further decomposed to value, neutral and glamour bidders. It must be immediately mentioned that the low number of stocks in an individual portfolio (N=13) affects the measurements and therefore also the validity of these findings. Still, the results are largely what to be expected, as several portfolios display severe underperformance regardless of the size or valuation level.

Table 10. The long-term effects of size and valuation.

Buy and Hold Abnormal Returns			
OMXH index			
		Size	
Valuation	**Large**	**Medium**	**Small**
ABHARpf(%)	-0,35	-33,30	-17,63
Glamour	(-0,235)	**(-17,637*)**	**(-10,611*)**
	-7,44	-10,27	-1,40
Neutral	**(-7,650*)**	**(-8,318*)**	(-1,160)
	-0,32	0,58	-2,67
Value	(-0,312)	(0,537)	**(-2,045**)**
OMXH25 index			
ABHARpf(%)	0,15	-32,81	-17,49
Glamour	(0,101)	**(-17,478*)**	**(-10,544*)**
	-7,27	-9,14	-1,60
Neutral	**(-7,522*)**	**(-7,400*)**	(-1,318)
	-0,20	0,70	-2,72
Value	(-0,194)	(0,651)	**(-2,082**)**

*,**,*** denotes statistical significance at 1%, 5% and 10% levels, respectively. In this table is shown the ABHARpf values for every size/valuation portfolio and also their t-values in parentheses.

It appears again that glamour firms are the primary source of the poor post-merger performance, but the magnitude is very different across the size groups. The highest observed ABHARpf% difference (-33,88%) is between medium sized value and glamour firms, and the smallest between large value and glamour firms only 0,03%. In the large portfolio, a majority of it`s poor performance reported in table 9 appears to be

caused by neutral valuation companies which perform badly while glamour and value bidders do not show any over –or underperformance.

Additional comparison reveals that the tested hypothesis H4 isn`t supported, as on an intra portfolio level, value firms do outperform their glamour counterparts in the small and medium portfolios, in the large portfolio though the hypothesis is rejected. Large value firms are unable to outperform large glamour firms, although as mentioned, the number of stocks per portfolio is low and therefore a very poor performance by a single bidder could cause the results to be biased.

Even so, a more detailed discussion of some of the results is in order. Firstly, it appers that, a size -and a valuation effect does seem to affect the long-term post-merger performance, and the effects are observable in almost all individual size/valuation groups. Small value firms fare worst when compared to medium –and large value firms. The small firms underperform on a statistically significant 5%-level while no under –or overperformance is found for medium and large value firms. The opposite is evident when comparing neutral portfolios. Regardless of the size of the acquirer, they all have a negative sign and the observed t-value for small acquirers is the only one unsignificant. Again for glamour acquirers, a complete reversal is notable.

Large glamour companies clearly outperform their medium –and small counterparts which both perform poorly. Bauman et al (1998) report, that in their study the largest difference between glamour and value companies was in the largest size group while the smallest difference was between small value and growth stocks. They also state that among medium and large companies value stocks outperform growth stocks.

Secondly, as was reported in several tables before, the choice of the benchmark index doesn`t appear to be significant. All results appear to very stable regardless of which benchmark is used as only change in the reported sign between benchmark indexes happens in the portfolio of large glamour firms and even the magnitude for this change remains statistically un-significant.

7. CONCLUSIONS AND RECOMMENDATIONS

The present study has studied how pre-merger valuation, size and the chosen method of payment affect the long-term performance of the acquiring companies in Finland. A time period from 1995 – 2006 was studied and the performance of 117 mergers and acquisitions evaluated using an event study method.

The event study results were very convincing and rather stable regardless of which benchmark index was used to measure the post-merger performance. The results showed that all acquirers underperformed on a 5%-statisticly significant level, but most of the underperformance was later shown to be attributable for glamour acquirers which fared very poorly. The complete sample had negative abnormal returns of -73,44% and –71,76 for multiple bidders and -51,42% and –49,23% for single bidders, and the removing of multiple bidders from the sample didn`t have any statistical effect on the observed results. The reported abnormal returns though are extremely high compared to many other similar studies, as previously have been reported abnormal returns ranging from -25% downwards.

As a majority of the sample firms cluster to the turn of the millennium, the large difference with previous studies and their reported long-term returns could be partly caused by a "peripheria" syndrome. As discussed, the majority of the long-term performance studies have been conducted in the US and UK, but Finland as a remote financial market is more thinly traded as compared to many other markets and this might cause more extreme variation in stock returns. Foreign investors particularly are more eager to pull their investments out in an event of economic downturn and therefore facilitating excess variation to stock returns.

When further dividing the sample based on individual stocks pre-merger valuation, the poor performance of high valuation companies becomes evident. Almost all portfolios, discarding the value i.e. low valuation portfolio, had negative abnormal returns and underperformed on a one or a five percent significance level. The reported results are very similar as what has been found on other international studies. Rau and Vermaelen (1998) reported for a US sample that value firms outperformed glamour firms, but I was unable to find any significant positive abnormal returns for value firms as reported by Rau and Vermaelen. On an international level, broadly similar results were reported by Bauman et al. (1998) and in the UK by Sudarsanam and Mahate (2003).

When testing the effects of chosen method of payment the results remained very robust. Cash –or equity only and the mixed finance portfolio all had negative abnormal returns ranging from -39,98% to -16,76%. Acquisitions financed using cash only, didn`t underperform on a statistically significant level like the other portfolios thus supporting reported findings from other countries. The very poor performance of the equity financed deals implies that high valued acquirers were using overvalued stock to complete their M&A.

Finally, when evaluating if acquirer size affects the outcome of the M&A, sample companies were divided to size portfolios based on their market cap. Again all acquirers underperformed but interestingly large firms fared the best. While medium and small firms underperformed poorly, the reported negative t-value for large firms was un-significant. A size effect did indeed appear for this time period but it suggests that large firms could be better acquirers than medium and small bidders. van Dijk (2007) reports in his review paper that several studies show that the size effect is time varying and in this paper size adjusted benchmarks weren`t used so the confirmation of these results is left for future studies.

When each size portfolio was further decomposed based on company pre-merger valuation, several interesting results appeared. It must be noted that this lead to very small individual portfolios casting a doubt on the reported results and the validity of the findings. For the large portfolio, majority of the previously reported underperformance was caused by neutral valuation companies which had high negative returns, while glamour and value firms fared fairly well. In the case of the large portfolio, hypothesis H4 was rejected as no statistical significance was found between value and glamour firms. Medium sized value firms outperformed other similar sized companies easily, but opposite results were again found for small acquirers. Now, while the glamour firms again had very high negative returns neutral firms were able to outperform value firms. The results reported in table 10 especially are somewhat susceptible as each portfolio had only 13 stocks in them.

Overall, the results clearly imply that acquisitions undertaken by Finnish companies where very unsuccessful. While the three-year post-merger period might not be sufficient enough to fairly judge the acquisition choices or their eventual success, at a first glance they seemed to destroy shareholder value rather than maximize it.

Several possibilities for future research have risen during this study. First of all, more sophisticated research methods should be used. As reported by Antoniou et al. (2006) and Dutta and Jog (2009) the use of the "corrected" t-values suggested by Mitchell and Stafford (2000) when measuring BHAR returns is highly recommend. Antoniou et al. state that several previously reported abnormalities disappeared entirely or the reported results became less significant when more precise statistical methods were employed. The results found in this study might also be altered or corrected by using the "corrected" t-values.

Another path that could be taken is the evaluation of multiple bidders and how they fare. While leaving multiple bidders out of the sample didn`t alter the reported results, it doesn`t really give an idea how they perform and how much and if they actually over – or underperform in the long-term. And as has been noted in several studies M&A cluster in time and by sector, so a choice to leave them out doesn`t represent the true reality of the markets.

Future studies could also try to employ a more complete acquisition sample. As nearly two decades have passed since Finnish financial markets became more open and more efficient, a more thorough investigation of the completed mergers could be in order, e.g. dividing the full sample to sub-samples, concentrating on the turn of the millennium etc. While Kallunki et al. (2009) examine the reasons and consequences of foreign bidders' acquisitions of Finnish companies; similar study regarding domestic acquisitions could be insightful. These might ver well offer more insights about the M&A markets of Finland. Also some additional explanatory factors could be tested, like the relative bidder/target size, is the merger diversifying or non-diversifying or does acquiring public or private companies produce different announcement period or long-term results.

As almost all of the threats described in the M&A outlook (2007) became reality very soon after, somewhat ironically even, the M&A markets experienced a rapid halt. The worldwide economic disaster caused firms to streamline and cancel or delay their ongoing projects. Now, two years later the current low interest rate-level and expansionary monetary policies are again offering a boost to faltering economies and businesses. In light of the events of last few years, it is therefore interesting to see if the probable resurrection of the acquisition markets is approached by bidders and managers in a more careful way. Do they continue to make questionable acquisitions or are we going to see companies concentrating more on internal growth instead?

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