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M&A Success and Economic Cycles:

A Survey of European Firms

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Abstract

There is limited research that investigates the relationship between M&A success and market valuation periods. Furthermore existing research deals primarily with the U.S. market. This paper explores whether acquisitions in Europe occurring during high market valuation periods are fundamentally different than those occurring during low market valuation periods. We find that acquisitions during high valuation periods yield significantly higher announcement returns than those that occurred during the low valuation periods. Furthermore, the high valuation firms yielded significantly higher long term returns than the low valuation firms. However, the combined sample of firms and the high, low and neutral portfolios all had significantly negative long term returns. We attribute the negative long term returns to the dynamics of the European market and the cross-border nature of a large portion of the acquisitions our sample

Keywords: Mergers and acquisitions, event study, calendar time abnormal returns, domestic and cross-border acquisitions, economic cycles, announcement effects

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1. Introduction

1.1 Background

Mergers and acquisitions have been studied in great detail and have been evaluated from many different perspectives by academic researchers. Initial studies focused primarily on the financial aspects of mergers and whether acquisitions added value to the firm. Here they examined largely the relationship between acquisition activity and firm performance through changes in shareholder value. This relationship was tested mainly through the use of the event study methodology developed by Brown and Warner (1980). The event study methodology looks to assess market expectations of future cash flows related to a fixed event, such as an acquisition announcement. These studies have looked at M&A's from the perspective of both the acquiring and acquired firms' shareholders and in combination.

In their survey of M&A research, Haleblian et al. (2009) deconstructs M&A research into three categories. The first is called antecedents. This looked at such subjects as: Value creation, managerial self-interest, environmental factors, and firm characteristics. Next they look at the conditions that moderate the acquisition-performance relationship. These factors are; deal characteristics managerial effects firm characteristics and environmental factors. Lastly, they look at other acquisition outcomes such as; the acquisition premium, employee turnover and customer and bondholder outcomes. This list doesn't include the other studies that look more at the HR and career aspects of M&A activity.

1.2 Problem Discussion

One area of M&A studies we feel has not been explored fully is that of strategic M&A's during the low point in an economic cycle. Much study has been devoted to merger waves and their concurrence with booms in the economic cycle (Moeller et. al. 2005). Furthermore, research that has focused on acquisitions during economic downturns has been from the perspective of a distressed firm that is divesting a segment of their firm and the liquidity or illiquidity of those assets (Shlingemann et. al, 2002). However, there seems to be little research into whether it pays to be an acquirer during economic downturns. Acquiring on the

downside does seem to have its merits. If a firm is acquiring during an economic expansion and the longer the economy has been in this expansionary mode the more the odds increase that a downturn is eminent and with the downturn comes greater stress to make the merger work. Conversely, when acquiring during a recession, the further a firm is into the downturn the more the odds of an upturn increase and with the upturn come the advantages of integration during an expanding economy.

One early study by Lubatkin and O'Neil, (1988) titled "Merger strategies, Economic Cycles and Stockholder Value", found that certain types of mergers completed during certain economic contexts can enhance the wealth of stockholders in the acquiring firms. Specifically, the authors found, using an event study format, that the value of the acquiring firm's stock increases more during bull markets than during bear markets and that during bear markets, only conglomerate mergers increase the stock value of acquiring firms. The authors suggest that during a bear market the high-risk/low-return environment leads investors to heavily discount the expected returns associated with the mergers.

Following in the footsteps of the Lubatkin study, Bouwman, Fuller, and Nain (2009), examine whether acquisitions occurring during boom markets are fundamentally different than those occurring during depressed markets. Here they found that acquirers buying during high-valuation markets have significantly higher announcement returns but lower long run abnormal stock and operating performance than those buying during low-valuation markets. They examine multiple explanations and conclude that this result is consistent with managerial herding.

The Bouwman study was based on a sample of 2944 acquisitions in the U.S. between 1979 and 2002. The acquiring firms short term performance was measured using three day cumulative abnormal returns (CARs) and long-run stock performance with two year buy and hold abnormal returns (BHARs) and calendar-time portfolio returns (CTARs). The long term measures were used to test whether the initial market reactions were consistent.

M&A activity in Europe is another overlooked area of research. The last merger wave in Europe which started in the late 1990's and ended in the middle of 2003 was for the first time on a scale equal to that in the U.S. However, despite this increased activity there has been

little in the way of academic investigation and little is known regarding the differences between the two markets (Martynova and Renneboog, 2009).

1.3 Purpose and research questions

The purpose of this paper is to explore whether or not acquisitions initiated during low market valuation periods outperform acquisitions that take place during high market valuation periods. We intend to explore this issue in a long-run as well as short-run context. By focusing on the under researched European market, we hope to be able to contribute to existing research in this area.

In essence we propose to answer the following research questions

- (i) *Do acquisitions in low market valuation periods outperform those made in high market valuation periods at the time of the announcement?*
- (ii) *Do acquisitions in low market valuation periods outperform those made in high market valuation periods in the long-run?*
- (iii) *Do the acquisition performance differ between the long-run and short-run?*

1.4 Limitations

Although our initial intention was to utilize a sample that stretches over several business cycles, due to data unavailability on European M&A before January 1993 and the market anomaly represented by the financial crisis in 2008, we must limit ourselves to conduct the study between 1993 and 2007. Hence we will cover fewer business cycles than Bouwman (2009) who used a sample stretching from 1979 to 2002.

In addition, the Bouwman study examined the long term acquisition by using three empirical methods. They are Buy and hold abnormal returns (BHAR), Calendar time abnormal returns (CTAR), and lastly Abnormal returns on operating income (AROOI). Due to time constraints we were not able to replicate the full extent of their methodology. As a consequence we will only employ CTAR to measure the long-term acquisition performance.

Finally, due to data unavailability, time constraints and liquidity considerations, this study will focus on the 16 of the most developed and liquid equity markets in Europe.

1.5 Disposition

This paper is structured as follows. Section two provides a review of the relevant academic literature and is followed by the theoretical framework of our paper. Section three describes the methodologies used in the creation of our sample and how the sample is then tested empirically. Section four contains a brief statement of our empirical results. Section five provides a discussion of our short-term and long-term results. Section six is a summary of conclusions. Lastly sections seven and eight contain reference list and appendix, respectively.

2. Theoretical approach

2.1 Motivations for mergers and acquisitions

Numerous arguments have been formulated over the years to explain why firms engage in M&A activity. For the sake of brevity and not wishing to overwhelm the reader with a history of M&As we will only discuss some of the more researched and relevant motivations. We separate prior research into four broad categories; managerial self-interest, synergies, market power, and exploitation of market conditions.

2.1.1 Managerial self interest

While many reasons for engaging in M&A can ostensibly claim to be done in the pursuit of increasing shareholder value this is not the case with managerial self-interest. In fact, scholars have examined the topic with assumption that these types of motivations are destructive to shareholder wealth (Haleblian et al 2009).

Jensen's agency theory (1986) claims that managers with access to substantial free cash flows may be more inclined to pursue acquisitions for the sake of firm growth rather than shareholder value maximization. It is felt that this behavior is due to managers' desire for larger private benefits such as higher salaries and enhanced prestige. The premise of agency theory is that compensation contracts should be designed to reduce managerial self-interest and align managers' and shareholders' interests. However, as Haleblian et al. point out, this is not the case and they cite a large number of studies that suggest that managers' increased need for compensation leads to strong, self-serving motivations for acquisitions. In particular, prior studies have found that acquiring CEO's post-acquisition compensation generally increases, regardless of the performance of the acquisition through large post-acquisition equity based pay grants (Hartford and Li, 2007), bonuses (Grinstein and Hribar, 2004), and other forms of compensation (Bliss and Rosen, 2001). It is felt that these increased forms of compensation serve to mitigate potential losses of the acquiring CEOs' wealth (Haleblian et al. 2009).

Managerial hubris has been cited by Roll, (1986) as another reason for managers' initiating an acquisition. Roll's hubris hypothesis maintains that there is a negative relationship between managerial overconfidence and expected M&A synergies. This is due to overconfident managers typically overestimating the potential synergies to be generated from the deal.

Furthermore, these same overconfident managers are assumed to make more aggressive takeover bids because they typically overestimate the target's value (Craninckx and Huyghebaert, 2011). Empirical studies have been found to support Roll's hypothesis. Hayward and Hambrick, 1997 found that CEO hubris increased acquisition premiums, which in turn led to decreased acquisition performance. Similarly, Malmendier and Tate, 2008 found that overconfident managers overestimate their ability to create additional value and due to this overpay to acquire the target leading to a value destroying merger. In addition, they found this result was stronger with firms that used internal financing to complete the deal, demonstrating a connection between hubris and Jensen's free cash flow hypothesis (Haleblian, 2009).

The timing of a deal is a key factor in whether the acquisition creates value for the shareholders of the acquiring firm. Moeller et al., 2005 found that acquiring firm's shareholders generally realized lower abnormal returns upon the announcement of an acquisition during the later stages of a merger wave. Sharfstein and Stein, 1990 proposed a managerial behavioral explanation for this behavior which has become to be known as the herding behavior hypothesis. This hypothesis proposes that some CEOs merely copy the investment style of their rivals. The principal explanation for this type of behavior is seen as the '*share the blame*' effect. Here the managers feel it is safer for their reputation to copy the action of their rivals than to have an independent investment strategy should those investment strategies turn out to be losers after the fact. Previous deals in an industry could also prompt CEOs to engage in acquisitions even if they are value destroying. This herding behavior may lead managers to make more aggressive bids especially when the competition for deals increases in the later stages of an M&A wave. They also found the nature of the managerial labor market promoted herding behavior. Herding behavior was more likely in cases where managers outside opportunities were relatively unattractive and when compensation was assessed on the basis of absolute rather than relative criteria (Craninckx and Huyghebaert, 2011).

2.1.2 Synergies and market power

Synergistic benefits are those that arise when the profits of the combined firm are more than the profits generated if the two firms had been operated separately. Efficiency theory states that mergers will only occur when they are expected to generate enough reasonable synergies to make the deal beneficial to both parties. This mutual expectation of gains leads to a friendly merger being proposed and accepted and positive returns should be noted by both the target

and acquiring firm. Weitzel and McCarthy note that studies by Banerjee and Eckard (1998 and Klein (2001) have found evidence to support this theory .

Chatterjee (1986) separates synergies into two types: operative and allocative synergies. Operative synergies are efficiency gains that are achieved through economies of scale and scope. Allocative synergies are collusive synergies that result from increased market power and an increased ability to extract more profit from the consumer. Finance literature was the first to propose that having fewer firms in an industry increases firm-level pricing power. In general, there is some limited evidence to support market power as an acquisition motive but most recent studies conclude that operating synergies are the most significant source of gain. (Haleblian et al., 2009), (Weitzel and McCarthy, 2009).

2.1.3 Exploitation of financial market conditions

When stock prices are relatively low state firms may see acquisition as a more viable and less costly form of growth versus a greenfield investment. Additionally, when stock market sentiment is low both public and private firms are valued lower due to higher risk premiums and or through lower valuation multiples. The under-valuation hypothesis posits that stock prices and M&A activity are negatively related and conversely rising prices can promote M&A activity by allowing the bidders to use their stock to finance the acquisition (Huyghebaert and Luypaert , 2008). Shleifer and Vishny (2003) suggest that this later part is true with firms issuing new shares when they feel their stock is overvalued.

2.2 Post-acquisition performance

The results of empirical studies regarding the post-acquisition performance of firms have been mixed. Martynova et al. (2008) find that studies generally fall into three categories: those that find significant improvement in post-acquisition performance, those that find significant deterioration and those that find insignificant changes in operation performance. There are many factors that determine post-acquisition performance such as: method of payment, deal atmosphere, relative size of the target, industry relatedness and if the deal is a domestic or cross-border acquisition.

2.2.1 Method of payment: cash or stock

A study by KPMG (2007), found that after both one year and two years after a deal announcement, all cash deals had significantly higher returns than deals financed solely with stock. Empirical evidence supports this and cash offers have been found to lead to stronger improvement than deals using other forms of payment (Moeller and Schlingeman, 2004). Furthermore Bruner (2004) summarizes the empirical findings in his paper “*Where M&A pays and where it strays*”. He finds that with cash deals target shareholder returns are significantly higher while stock deals leads to higher returns to target firms but less than when payment is in cash. Furthermore, he finds for the acquirer cash deal leads to returns that range from zero to positive while with stock the acquirers returns are significantly negative. Additionally tender offers have been found to amplify this cash versus stock effect with cash tender offer returns additionally higher and stock tender offer returns even lower. Lastly Bruner states that studies have found that stock deals are associated with friendly mergers as opposed to hostile mergers. However, when this is viewed from the long term operating perspective Martynova et al. (2006) note that empirical studies have not found a significant relationship between the method of payment and post operating performance.

2.2.2 Friendly versus hostile mergers

Bruner states that the buyers approach towards a potential target is influenced by the degree of the managerial entrenchment. Friendly deals are generally negotiated between the management of the target and bidder firms. However, hostile deals tend to by-pass management and go directly to the shareholders in the form of a take it or leave it proposition. Bruner notes that several studies have reported larger announcement returns to bidders in tender offers than in friendly mergers, with successful bidders in hostile takeovers having positive abnormal returns of 2 to 4 percent. These higher returns may be indicative of bargain prices as well as the expected gain from replacing the entrenched management and changing the strategic focus of the target firm. Unfortunately, these higher returns are associated with announcement effects and Martynova et al. state that empirical studies have found no evidence to support hostility in corporate takeovers to be associated better long term operating performance.

2.2.3 Firm size

Haleblian et al. (2009) notes that scholars have argued that firm size affect the performance of acquisitions. In support of this he found that some studies found that large mergers produced positive post-acquisition accounting performance. Possible explanations for this were, increased asset productivity, enhanced customer attraction, employee productivity, and asset growth. Conversely they note that another study by Moeller et al. (2004) found that acquisitions by small acquirers resulted in positive announcement gains, whereas large acquisitions by large acquirers led to significant announcement losses. Conversely, Martynova cites a study by Clark and Ofek, (1994) that found that the difficulties with managing a large combined firm may outweigh the operating and financial synergies in large acquisitions and result in the deterioration of operating performance. Both Haleblian and Martynova conclude that the evidence regarding long term performance is inconclusive and feel this is an area for further research.

2.2.4 Industry relatedness

One topic that has been the subject of scholarly studies is the issue whether it is more profitable for a firm to engage in focused or diversifying acquisitions. Bruner makes the following conclusions regarding this debate. First, he notes that focus and relatedness probably pay better as an M&A strategy than one of unrelated diversification. Merger benefits can be best found and exploited when a firms stays closer to what it knows best rather than exploring new territories. Second, unrelated diversification may pay in exceptional circumstances where the acquiring firm has special knowledge and personnel. Bruner cites the LBO firm KKR and value investor Warren Buffet as examples of exceptions to his first conclusion. Third, related acquisitions only pay when they are examined critically and a firm can destroy value by pursuing related acquisitions for the sake of making an acquisition as easily as engaging in a diversification deal. Martynova et al. find that there is contradicting empirical evidence regarding long term profitability of either strategy.

2.2.5 Domestic versus cross-border deals

Bruner finds that cross border deals are similar to U.S domestic deals with regards to announcement returns. Generally target shareholders reap large returns while the acquirers break even. When returns are combined the shareholders the shareholders gain on average. Main difference appears to be that foreign bidders seem to pay more than domestic ones. The

larger premium may be the result of foreign acquirers paying more for the local firm knowledge and market access the domestic firm may provide the acquirer. Martynova and Rennebourg, (2006), in a study of European mergers, found that firms acquiring foreign targets experience significantly lower takeover announcement returns than those firms that acquire domestic firms. Furthermore, Moeller and Schlingeman (2003) note that cultural and regulatory issues may lead to the post-acquisition performance of the combined entity deteriorating with time.

2.3 Acquiring during a downturn

Periods of weak economic growth may be the ideal time for companies to use M&As in a strategic manner to eliminate competitors, consolidate markets, increase market share, strengthen competitive advantage, and place themselves in a position to grow quickly when the economy improves. There are several potential advantages to those firms that acquire during a downturn. First, stock prices are declining and as prices continue to decline the price of the target gets closer to its fundamental value and potential deals become cheaper in absolute terms. Second, during downturns there is less pressure to get the deal done, acquirers can take their time and use due diligence to find the firm that best suits the long terms goals of the acquirer. Third, downturns provide the opportunity to acquire quality firms that are solid financially but weak profitably. Lastly, acquiring during a downturn may ease employee turnover issues that arise during a merger. Key employees may be less likely to leave and seek employment elsewhere and competitors may feel cash constrained and unwilling to hire away the key employees from the target firm (Boston Consulting Group, 2003).

The subject of acquisitions and economic cycles has been noted in consulting studies but, with the exception of a few studies which will be discussed later in this paper, remains largely unexplored in academic circles. One such study by the Boston Consulting Group (BCG) in 2003 found that deals that occurred during periods of below-average economic growth had a higher likelihood of success. The BCG study analyzed 277 M&A transactions in the US between 1985 and 2000 and compared the performance of mergers that occurred during periods above average economic growth and those that occurred during periods of below economic growth.

BCG found that most of the mergers in their sample (64 percent) destroyed value at the time they were announced, and 56 percent continued to do so two years after the deal. However, when the results were de-averaged by the economic cycle the results were different. Most M&As continued to destroy value but weak economy mergers had a somewhat higher chance of success. More than 47 percent of the weak economy mergers created value over the two year period as opposed to only 42 percent for the strong-economy mergers. In addition, BCG found that the average performance of the weak-economy mergers was markedly better than those of the strong-economy mergers. In the sample the strong-economy mergers destroyed value on average while the weak ones created value on average. Furthermore, after two years the relative total shareholder returns of the weak-economy mergers were 14.5 percent greater than that of the strong-economy mergers and 8.3 percent greater than the returns of the market as a whole.

They also found that both types of mergers destroyed value at the time of announcement. The authors felt that this demonstrated that the market was not distinguishing in the short term between strong-economy and weak-economy deals. The mergers were then divided between those deals with positive announcement effects and negative announcement effects. Here they found that on average all deals with positive announcement effects created value two years after the deal but weak-economy mergers outperform strong mergers by 11.1 percent. Furthermore, of the deals with negative announcement effects only the weak-economy mergers created long term value and outperformed strong-economy mergers by almost 17 percent. When these initial announcement effects were factored out the returns to weak-economy firms were even more impressive. BCG found that regardless of positive or negative announcement effects, strong-economy deals subsequently declined in value on average while weak-economy mergers increased in value. The authors feel that this was an indication that the market may systematically overestimate the long-term performance of strong-economy mergers and underestimate that of weak economy mergers.

The BCG study had one last result in favor of weak-economy mergers over strong economy mergers. They found that weak-economy mergers had almost twice the likelihood of producing relatively large returns. 13.5 percent of weak mergers were found to have two year returns in excess of 50 percent compared to only 7.4 percent of strong-economy mergers. Conversely, 14.9 percent of strong-economy mergers produced losses in excess of 50 percent, where only 6.7 percent of the weak economy deals had similar results.

The authors attribute the superior performance of these weak-economy mergers to the reasons listed earlier in this paper: lower target Company valuations due to the poor economic environment, acquirers choose companies with sound finances but weak profits, and lastly weak-economy acquirers tend to focus more on post-merger integration and synergy realization.

We realize that consulting studies lack the rigorous peer review that goes with the successful publication of an academic paper and most likely we would not be granted access to the data used to create the study. However, the BCG report does highlight some of the reasons we feel that this an area M&A research worthy of further investigation and serves to complement the existing academic studies on the subject.

2.4 Empirical research and economic cycles

This subject has not been completely ignored by academics and was explored early by Lubatkin and O'Brien (1988). Here the authors study was comprised of a sample 80 bear market mergers and 134 bull market mergers in the US. The mergers were at least USD 10 million in value and the firms considered had to be relatively merger inactive, having not participated in another merger over a six year period surrounding the date of the merger of interest. Each merger was then classified according to the primary strategic relationship between acquiring and target firms by use of the FTC classification scheme which classifies mergers as horizontal, vertical, related or conglomerate.

The authors used an event study framework to assess the cumulative abnormal returns of the acquiring firms stock around the time of the announcement of an intended deal. The authors found that the value of the acquiring firms' stock increases more during bull markets than during bear markets. Furthermore, that during bear markets only conglomerate mergers increase the stock value of acquiring firms. All other merger types were associated with changes in stock value were insignificant which, the authors suggest, demonstrates that any merger related benefits, if any, are given to the stockholders of the acquired firm.

Additionally, they found that during bull markets, only horizontal mergers were associated with insignificant returns and other forms of merger were viewed very favorably by markets.

Lastly, regardless of the phase of the economic cycle, related mergers were not found to increase stock value more than unrelated mergers.

The authors conclude that mergers are not necessarily detrimental to the stockholders of the acquiring firms. However these returns are moderated by economic conditions and particularly with regards to horizontal and vertical mergers. The authors suggest that this was due to the high-risk/low-return context of a bear market where investors are prone to heavily discount the expected returns associated with mergers. However, with conglomerates they felt that investors may view these mergers as an effective redeployment of the acquiring firms' assets into new markets as opposed to continued investment in the same related markets.

The Lubatkin study is not a particularly well known or often cited work. Additionally, it only looked at short term returns using a small sample. However, a study by Bouwman, Fuller, and Nain (2006) examines both the short term and long term results of M&As and their relationship with the economic cycle. The authors use a sample of 2944 acquisitions announced from 1979-2002 to examine if any differences exist between acquisitions announced when market valuations are high and those announced when valuations are low. The sample was split into sub-samples with firms that made acquisitions during times of high, neutral, and low market valuations and then compare the performance of firms that announce acquisitions during those market periods. The firms' short term performance was measured using three day cumulative abnormal returns (CARs) and long term performance was measured by two-year buy and hold abnormal returns (BHARs) and calendar-time portfolio returns (CTARs). The authors then compare the result to see if the markets initial reactions were consistent with the acquirers' long term performance.

The results of the study were that bidder announcement returns were insignificantly negative for acquisitions initiated in high-valuation markets but significantly negative for deals commenced in low-valuation markets with the difference between the two being significant. However, these firms that acquired when times were booming and produced higher announcement returns in the short-term produced significantly lower long-term abnormal stock returns for their shareholders, as measured by BHARs and calendar-time abnormal returns.

The article explored the possible reasons for why high-market acquirers underperform relative to low-market in the long term. The authors looked at three possible causes: overpayment, market-timing, and managerial herding. They concluded that their results were consistent with managerial herding with the underperformance of acquisitions undertaken when markets were booming were caused by firms that acquired in the later stages of a merger wave.

2.5 Empirical research and European M&As

It has well documented by scholars that mergers and acquisitions occur in waves and these scholars have studied the effects of these waves primarily in relation to the US economy. The European economy has been affected similarly by waves in M&A activity. The first merger wave occurred in Europe during the years 1880 through 1904 and the origin of this wave was the second industrial revolution where monopoly creation was the goal. This led to increased anti-trust regulation and the start of the second merger wave from 1919-1929 where vertical integration was the dominant theme. The third wave started in the 1950's and peaked in the mid 60's. In Europe, as in the US, diversification and the creation of large conglomerations was the primary purpose of M&A activity. New technology and financial innovation sparked the fourth wave from 1983-1989. Here junk bonds helped facilitate the financing of large acquisitions that were primarily hostile in nature. The fifth wave from 1993-2000 started in tandem with three factors: an economic boom, the creation of new European stock exchanges and development of the internet and telecom industries. The year 1999 was a milestone for the European M&A market, as it was now almost as large as the US market. This merger wave ended with the collapse of internet bubble in the US (Goergen and Renneboog, 2004). After the end of the fifth wave in 2000 merger activity declined until the end of 2003.

Subsequently, M&A activity accelerated but again slowed in 2007 due to the worldwide financial crisis. Despite the significant growth in the number and value of M&A transactions in Europe there is little empirical research on the subject and most research is limited to the US and UK markets (Martynova and Renneboog, 2010). This is unfortunate and, due to the fact that European corporations operate under a different corporate governance regime than that of corporation in the US and the UK, should be explored further (LaPorta et al., 1997). Despite the dearth of research into European M&As there has been some research on the subject and has primarily focused on the M&A activity during the fifth merger wave.

However, this research is limited and the results appear to be mixed. A study by Campa and Hernando (2004) ,which performed an analysis of shareholder value creation upon the announcement of M&As involving European firms, found that target shareholders received on average a positive and significant cumulative abnormal return (CAR). Conversely, the CARs for the acquiring firms' shareholders was not significantly different from zero. In fact, the returns to acquiring firms were negative in almost 55 percent of the transactions. The authors concluded that their results were consistent with previous findings in merger literature with zero and negative returns to acquiring firms. The authors further concluded that mergers in industries that had been previously under government control or operating in a heavily regulated environment generated lower value than M&A announcements in unregulated industries. Furthermore, this low value creation in regulated industries became significantly negative when the merger involves two firms from different euro area countries. This was primarily due to the lower positive return that shareholders of the target firm received upon the announcement of the merger. This they attributed to obstacles such as cultural, legal, or transaction barriers that remain in the still integrating financial markets in Europe.

In a similar study of European mergers during the fifth wave authors Georgen and Renneboog (2004) found results similar to the Campa and Hernando study. Here the authors analyzed market reactions to 187 large M&A deals with a value of at least USD 100 million. The survey sample contained 56 merger, 41 friendly acquisitions, 40 hostile acquisitions, 21 hostile acquisitions involving multiple bidders and 29 divestitures. The short term wealth effects in the study mirrored similar studies in the US and UK. The authors found large announcement effects of 9 percent for target firms. Additionally, the cumulative abnormal returns that included the price run-up over the two month period prior to the announcement rose to 23 percent. Acquiring firm's returns were found to have a statistically significant announcement effect of 0.7 percent. They also found that the type of takeover bid had a large impact on the short-term wealth effects with hostile takeovers producing substantially larger price reactions than friendly offers. Furthermore, when a firm from the UK was involved the abnormal returns were higher than those of bids involving both a continental European target and bidder.

Furthermore, they found strong evidence that the means of payment involved in the deal had an impact on the share price. Market-to-book ratios were also found to have an impact on premiums with target firms with high market-to-book ratios having higher bid premiums and

a negative price reaction for the bidder. Lastly, the authors examine whether the pre-dominant reason for takeover activity was for synergistic reasons and their results suggest that this was the case with targets and bidders sharing the wealth gains (Goergen and Renneboog, 2004).

While these studies found that investors, at least initially, reacted positively to the deal announcements, as demonstrated by the combined positive shareholder returns, others have found that M&A's in Europe during the same time period did not create shareholder value in the long run. Aw and Chatterjee (2004), for example, found that acquiring firms lost close to 12 percent up to two years following the deal announcement. In this paper, which focuses on cross border acquisitions, a three way comparison was made between the post-takeover performance of UK, US and Continental European targets between 1991 and 1996. A sample of 79 M&As whose value exceed USD 400 million was used and the returns were examined using an event study format. The study examined if UK firms acquiring large takeover targets experience cumulative abnormal returns significantly different from zero up to two years after the acquisition. In general, the study found that UK firms acquiring large takeover targets, at various significance levels, experience negative cumulative abnormal returns over the period examined. Additionally, the study found that the post-takeover performance of UK firms acquiring UK targets is superior to that of UK firms acquiring US targets. In turn, the performance of UK firms acquiring US targets is better than UK firms acquiring Continental European targets. The authors suggest that these cross border difference may be due to control issues, culture, language and politics (Aw and Chatterjee, 2004).

Similarly, Martynova et al. (2007) found in their sample of 155 European M&As between 1997 and 2001 that half of the firms had declining operating performance for the combined firm up to three years following the deal completion. Here the authors employed four different measures of operating performance and test whether the results vary across the measures. They found that both the acquiring and target companies significantly outperform the median peers in their industry prior to the takeover but the profitability of the combined firm decreases significantly following the takeover. This decrease was found to be insignificant when they control for the peer companies. In addition, they found acquisitions of relatively large targets result in better profitability of the combined firm subsequent to the takeover , whereas acquisitions of small firms leads to a profitability decline (Martynova et al. 2007).

The most recent study by Craninckx and Huyghebaert (2011) examined M&A failures using the following measures: inferior long-term stock performance, inferior operating performance, and target divestment. The study again looks at the fifth merger wave and the sample was comprised of listed companies that acquire listed targets as well as privately held targets from 1997 to 2006. The author's results indicated M&A failure rates of up to 50 percent in both sample of listed and privately held companies. When acquires and targets are listed, they found robust evidence that the stock market can predict the outcome of an M&A deal. Their results indicate a consistent and significant negative relationship between combined short-term M&A value effects at deal announcement and the likelihood as well as the magnitude of M&A failure. The findings continued to hold when they looked at acquirer abnormal returns only and allowing for a longer post-M&A integration period. However, when the target firms were privately held, they found no empirical evidence that investors can predict M&A failure upon deal announcement (Craninckx and Huyghebaert, 2011).

As stated earlier the amount of empirical studies regarding European M&A activity is limited with varying results. In general, M&As seem to be winners in the short term but losers in the long run. It is the purpose of our paper not only to examine if there are differences in the short and long term returns of firms engaged in M&A activity during economic booms and busts but also to add to lack of research into European M&A activity.

3. Methodologies

3.1 Hypothesis

As stated earlier the purpose of this paper is to explore whether firms that make acquisitions during low market valuation periods have better returns in the long run than firms that make acquisitions during high market valuation periods and how did these returns compare to the markets initial reactions at the time of the announcement of the deal.

Using the Bouwman et al. study and, to some extent, the Lubatkin and O'Neill studies as our guide we propose to test the following hypotheses:

H0: Mergers and Acquisitions during high market valuation periods do not produce any short-term abnormal returns

H1: Not so

H0: Mergers and Acquisitions during high market valuation periods do not produce any long-term abnormal returns

H1: Not so

H0: Mergers and Acquisitions during low market valuation periods do not produce any short-term abnormal returns.

H1: Not so

H0: Mergers and Acquisitions during low market valuation periods do not produce any long-term abnormal returns

H1: Not so

3.2 Data collection

As previously argued, there is no comprehensive research on abnormal returns from European M&A activity. Furthermore, there is a lack of real consensus in the findings from the studies at hand. In an effort to bring some clarity to this under researched topic, this study will not only be devoted to researching both the short- and long-term abnormal returns but also doing this in a European setting. To be more precise, we will focus on M&A deals that takes place

within the 16 most developed and liquid capital markets in Europe, namely Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. Other constellations have also been considered, such as only selecting member countries of the European Union and/or including some of the larger eastern European countries. However, only using European Union member states would result in the exclusion of both Norway and Switzerland, which arguably share more characteristics with the rest of the sample than most Eastern European countries do. It seems more natural to make a distinction between countries with more or less developed capital markets. There are two reasons for this. First, to ensure that the abnormal returns (or lack thereof) are not merely a product of illiquid markets. Secondly, Reuters Kobra seem to lack vital information, such as size of the deal, on many of the Eastern European M&A deals.

Our choice of sample period was initially set to mimic that of Bouwman et al. (2009), who used data stretching from 1979 to 2002, and thereby covering several business cycles. However, Reuters Kobra does not provide any information on European M&A before January 1993, hence this will be the starting point of our sample. It is well established that the recent financial crisis represent an anomaly in market behavior and the time period in which it took place must therefore be excluded from our sample. The endpoint of our data sample will therefore be collected in December 2007, well shy of the meltdown that progressively took place in 2008 and 2009. Even though our sample will be shorter than desired, we believe that it is still sufficient as it covers more than one business cycle.

As the constituent countries and the time period of our sample have been established, it is also necessary to define what constitutes an event. In this case we will follow Bouwman et al. (2009) where an event is defined as an acquisition valued at \$50 Mn or more constituting at least 50 percent of the target company's shares. To ensure that there is enough liquidity in the shares of the event firms, we will follow Bouwman et al. (2009) and remove all stocks with a share price smaller than \$3. Finally, in line with most research, we choose to exclude firms that belong to the financial services industry. According to Foerster & Sapp (2005), exclusion of financial firms is justified since their capital structure is markedly different from other industries.

When performing an event study, it is necessary that the event can be isolated, i.e. there should be no other events taking place during the event window. As we will further detail, we

will employ a two year event window after an M&A event to capture the long-term abnormal return. It is of course impossible for us to control for all other potential firm-specific events that may take place during this period, and we must therefore assume that any such event will not have a substantial impact on the stock price. However, it is reasonable that we account for events of the same type that is studied, in this case M&A events. But even this limitation puts extraordinary restrictions on our sample, in the sense that we cannot include companies that conduct any other M&A of a substantial nature during that period. Lubatkin & O'Neill (1988) do indeed make a point of only choosing merger inactive companies in their study for this very reason. However, it is unreasonable to expect any great number of companies to be completely M&A inactive for two full years after an acquisition. We will therefore define any additional acquisition during the two year event window with a deal size greater than \$10 Mn or 10 percent of first acquisition as a disqualifying M&A event. In other words, acquisitions valued at \$50 Mn or more will be only considered an event as long as there are no other acquisitions conducted by the same company with a value higher than \$10 Mn or 10 percent of original acquisition. We find this to be a reasonable assumption of what could constitute a substantial competing event. Of course, this rule will apply regardless of where in the world an event firm makes the disqualifying acquisition, since all such acquisitions may affect the stock price.

Unfortunately, there is no way to specify all of these criteria at the same time in Reuters Kobra. Hence a more general list consisting of approximately 4500 acquisitions between 1993 and 2005 with a value greater than \$10 Mn, including acquisitions with the rest of the world, is compiled. The list is then manually scanned for event candidates, one at a time, until our final sample will only consist of accepted acquisitions within any of our chosen 16 European countries, excluding the financial services industry.

3.2.1 Possible biases

The fact that we deliberately choose only firms that are somewhat merger inactive for two years around the announcement date and completion date, may cause our sample to less representative of the broader market. However not controlling for other acquisitions within the two year event window, would break the most fundamental principle of an event study. As a consequence we would no longer be able to isolate the long-term effect of a specific acquisition. Furthermore, due to each firm likely making a different number of acquisitions at

different times during the event window, the abnormal returns of different firms could no longer be considered to measure the same thing. Finally, we acknowledge that Lubatkin & O’Neill (1988) used a sample of completely merger inactive companies.

3.3 Data statistics

Our final sample is comprised of 317 firms over the period of 1993 to 2005. **Table 1** below provides some general facts regarding the sample.

Table 1. Overview of sample

Sample Summary	
Number of Firms	317
Period of Observation	1993-2005
Largest Deal in USD	75 Billion
Smallest Deal in USD	50 Million
Average Deal Size	164 Million
Number of Countries	17
Number of Domestic M&A’s	186
Number of Cross Border M&A’s	131
Dominant Deal Attitude - Friendly	224 Deals
Number of Industry Sub-sectors	90
Dominant Industry	Packaged foods and Meats

The sample of 317 deals is separated into periods of high, neutral and low market valuations. **Table 2** below illustrates the breakdown of valuation periods and geographic type.

Table 2. Market valuation periods

Market Valuation Period	Total M&A’s	Domestic	Cross Border
High	128	77	51
Neutral	122	72	50
Low	67	37	30
Total	317	186	131

As noted above our survey includes M&A activity in 17 countries in Europe with companies from the United Kingdom being the most active. **Table 3** below further breaks down the observations by country and whether the deal was of a domestic or cross border in nature.

Table 3. Country data

Sample Breakdown by Country	Total	Domestic	Cross Border
United Kingdom	92	71	21
France	44	30	14
Germany	27	8	19
Finland	25	6	19
Italy	23	19	4
Switzerland	19	9	10
Spain	17	13	4
Netherlands	17	7	10
Sweden	17	6	11
Norway	9	7	2
Belgium	7	3	4
Denmark	7	2	5
Ireland	6	2	4
Portugal	3	0	3
Greece	2	1	1
Poland	1	1	0
Austria	1	1	0
Total	317	186	131

The form of payment that was most frequently used cash with 158 transactions. **Table 4** breaks down the forms of payment used and number of transactions.

Table 4. Means of payment

Means of Payment	
Cash	158
Cash and Equity	41
Cash and Debt	17
Debt and Equity	2
Equity Swap	39
Equity	20
Unknown	40
Total	317

Our sample is diverse by industry with 90 sub-sectors comprising the sample. **Table 5** below list the twenty largest sub-sectors by number of acquisitions.

Table 5. Industry breakdown

1	Packaged Foods & Meats	18
2	Construction & Engineering	17
3	Industrial Machinery	14
4	Electric Utilities	13
5	Integrated Telecommunication Services	11
6	Publishing	11
7	Pharmaceuticals	10
8	Distillers & Vintners	8
9	IT Consulting & Other Services	7
10	Aerospace & Defense	6
11	Construction Materials	6
12	Specialty Chemicals	6
13	Trading Companies & Distributors	6
14	Electronic Equipment & Instruments	5
15	Food Retail	5
16	Industrial Conglomerates	5
17	Multi-Utilities	5
18	Oil & Gas Exploration & Production	5
19	Paper Packaging	5
20	Paper Products	5
	Total	168

3.4 Classification into high and low valuation markets

The purpose of this study is to quantify and contrast abnormal return performance of M&A carried out in high vs low valuation levels of the market. Each sample month between January 1993 and December 2005 must therefore be classified as representing either a high, low or neutral valuation level. As Bouwman et al. (2009) points out, this can be accomplished by using the P/E ratio, absolute level or even the M/B ratio of a relevant broad market index. Our initial intention to use the P/E ratio was abandoned due to lack of data availability for the entire sample period and instead we settled for the absolute level.

The choice of index fell on MSCI Europe, which reflects the broad market performance of the same 16 countries which constitute our sample. Our methodology of classification strictly follows Bouwman et al. (2009). Since equity market have a natural tendency to increase in value over time, it is first necessary to remove the time trend from the index. Otherwise the months in more recent times will have a bias towards being classified as high valuation

markets and vice versa (Bouwman et al., 2009). In practice each monthly detrended index value is realized by running an OLS regression of the index level on time using a sample consisting of the previous 60 months of data. From each regression we extract the 60th residual which represent the value of the detrended index month after removing the OLS best linear fit of the time component. With a sample of acquisitions between January 1993 and December 2005, this yields 156 detrended index values and associated regressions which are carried out in STATA 11. For each month, the average of the past 60 months of the detrended index values are calculated. The detrended index value each month is then compared to its 60 month historical average and divided into an above and below average sample. As a final step, the top half of the above average sample months are classified as high valuation months, whilst the low valuation months constitute the bottom half of the below average sample months. The final classification is found in **Table 12** of the appendix.

3.5 The rationale of an event study

To fulfill the purpose of this study we will utilize a short-term and a long-term event study. The rationale behind an event study is that the incremental impact of a corporate event should be reflected in the stock price in the form of an abnormal return. If the abnormal return is statistically significant, the event is considered to have an impact.

3.5.1 Short-term event study

The event study methodology was originally developed by Fama et al. (1969) to measure the short-term effect on stock prices from the announcements of a stock splits. To this date, it is still considered the standard method of measuring the announcement effect of an event. This paper will follow the framework outlined by Campbell et al. (1997) in how to perform a short-term event study. The authors outline five steps that must be addressed to be assured of a successful completion: event definition, selection criteria, normal and abnormal returns, estimation procedure and testing procedure.

3.5.1.1 Event definition.

The initial step of an event study is to define the event of interest and identify the time-period over which the concerned companies' stock prices will be examined. This period is called the

event window. For our study, we have selected the firms' announcement date of an intended merger or acquisition. As for the event window, we follow Bouwman et al. (2009) who use a symmetric three-day window around the announcement date (i.e. one day prior and one day after the announcement day). This choice of event window will effectively capture any news or rumors that might have leaked the day before. It will also consider related short-term effects the day after the event day (Kothari & Warner, 2004)

3.5.1.2 Selection criteria.

As the reader probably knows, the companies included in our study have been selected using a multitude of criteria, all of which is thoroughly detailed in section 3.1 Data Methodology.

3.5.1.3 Normal and abnormal returns.

The normal return is defined as the expected return in case the event did not take place. There are two models that are commonly used for modeling the normal return: the market model and the market-adjusted model. The latter assumes that all event firms have a Beta value of one. Hence, the normal return is equal to the expected return of the market index. The model is particularly useful when the period leading up to an event contains other interfering events which makes the estimation of normal return using historical data impossible. However, by assuming unity Beta, the selection of market index becomes very important and could bias the results. We will follow Lubatkin & O'Neill (1988) and instead use the market model, which only assumes a stable linear relationship between the market return and the security return. Since we have only included event firms with no other disqualifying event two years around the event date, we feel confident that using the market-adjusted model is no longer necessary.

Corrado & Truong (2008) suggest that using log-returns in event studies will lead to better specified tests. Furthermore, there is overwhelming evidence that taking the log-returns on a series with a unit root will induce stationarity which is a prerequisite for regression analysis to be valid (Brooks, 2008). Hence we will calculate the log-returns for each company as

$$R_{it} = \ln \left(\frac{P_{i,t}}{P_{i,t-1}} \right)$$

Where R_{it} is the log-return for company i at time t . $P_{i,t}$ is the current closing price and $P_{i,t-1}$ is the previous day's closing price.

With the log-returns in place, we can estimate the normal return for each individual firm in our sample using the market model as previously indicated. This involves running a regression of the daily returns, R_{it} , on the market return, R_{mt} , for each individual firm

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

Where ε_{it} is the zero mean disturbance term. The market return is proxied by the return on the S&P Equally Weighted Index. The choice of an equal-weighted market index is supported by Corrado & Truong (2008) who found that using an equal-weighted market index yields superior test results to a value-weighted market index. Furthermore Brown & Warner (1980) found that using a value-weighted market index in the market model led to a poorly specified test statistic. Although we initially sought to use MSCI World Equally-weighted Index as a proxy for the market portfolio, this was not possible due to data constraints. Since MSCI World is highly correlated with S&P500 (Koller et al, 2010), we instead settled for the S&P500 Equally-weighted Index.

We can now use the normal return to calculate the abnormal returns AR_{it} . This is accomplished by subtracting the normal return, $E(R_{it})$, from the actual return, R_{it} , for each day in the event window.

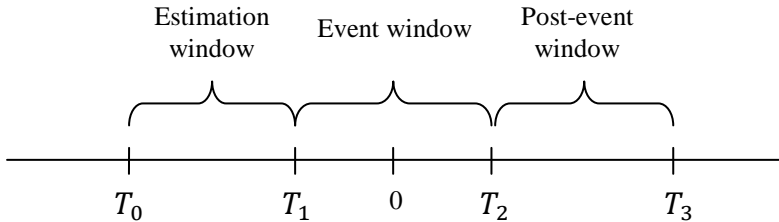
$$AR_{it} = R_{it} - E(R_{it})$$

3.5.1.4 Estimation procedure.

To obtain the normal returns, the parameters of the market model, α_i and β_i , must first be estimated over the so-called estimation window. We will conduct the regression analysis in STATA 11. Although there is no consensus on appropriate length of the estimation window, it is accepted that it must precede the event window without overlapping it. If this was not the case, the impact of the event would not only be reflected in the actual return but also in the estimate of the normal return (Campbell et al., 1997), which would invalidate the event study

methodology. We will utilize the 252 trading days leading up to the event window as our estimation window.

Figure 1. *Time line for an event study*



3.5.1.5 Testing procedure.

In order to best utilize the information of the event window, it is common practice to accumulate the abnormal returns over the event window. We define CAR_i as the cumulative abnormal return for stock i

$$CAR_i = \sum_{t=-1}^{t=1} AR_{it}$$

Although we could choose to study each firm's cumulative abnormal return independently, this is not advisable since movements in the stock price is also driven by information unrelated to the event. Because the abnormal returns are all centered on a specific event, the Cumulative average abnormal return, CAAR, should give us a better estimate of the event's impact. The reason is that all unrelated information should cancel out on average when using CAAR (de Jong, 2007).

$$CAAR = \frac{1}{N} \sum_{i=1}^N CAR_i$$

The hypothesis to be tested are

$$H_0: CAAR = 0$$

$$H_1: CAAR \neq 0.$$

The variance of the cumulative average abnormal return is given by the squared average of the individual CAR standard deviations

$$Var(CAAR) = \bar{\sigma}_{CAR,i}^2 = \frac{1}{N^2} \sum_{i=1}^N \sigma_{CAR,i}^2$$

The null hypothesis is tested using the t-statistic (J_1) is approximately normally distributed:

$$J_1 = \frac{CAAR}{\sqrt{\widehat{Var}(CAAR)}} \sim^a N(0,1)$$

3.5.1.6 Possible biases

It is important to recognize that short-term event are subjected to some potential biases which may affect the reliability of the results. Non-synchronous trading or non-trading in our selected stocks may introduce potential bias in the market model estimate of the Beta coefficient (Campbell et al., 1997). The fact that all of our acquiring firms are actively traded should reduce the risk of such bias. However, it is still important to screen each return series for these types of trading patterns. Since some firms' returns showed non-synchronous trading or non-trading patterns, they were eliminated from the sample.

Another possible bias is the normality assumption of CAAR which is a pre-requisite for classical statistical inference and departures would mean that the results would only be asymptotically valid. Still, this should not pose a problem for short-term event studies since the test statistics converge to their asymptotic distributions fairly quickly (Campbell et al., 1997).

One last source of potential bias comes with the assumption that abnormal returns of no cross-correlation between individual stocks. As long as the event windows do not overlap each other, this assumption is not considered a problem. If this is not the case, the failure to account for cross-correlation will potentially cause bias in the standard errors, making statistical inference unreliable. In our case there are a substantial number of firms with overlapping event-windows. But at a closer inspection we find that only a few operate in the same industry

and only a handful of these in the same country at. In accordance with Fuenzalida et al. (2006) we will remove all firms that have an overlapping event window in case they share the same industry. This should be sufficient for us to be able to assume zero cross-correlation between the remaining event firms with overlapping windows. The rationale is that it would be very unlikely for one company's announcement to have an effect on another company's stock price given that they operate in different industries and different countries.

3.5.2 Long-term abnormal return estimation

3.5.2.1 The bad model problem of long-term event studies

Fama (1998) argues that all event studies are fraught with a bad-model problem to some extent. Luckily the bad-model problems associated with short-term event studies is limited. The main reason is that expected daily returns are almost zero and subsequent estimation errors of expected normal returns will have very little impact on abnormal returns. However, as the time horizon grows, so will the negative effects of the bad-model problem. According to Fama (1998) a spurious monthly average abnormal return will become statistically significant when accumulated over longer periods of time. The importance of minimizing the bad-model problem therefore becomes evident. To do so, we will decompose the bad-model problem into the choice of Return metric and the choice of Asset pricing model as suggested by Fama (1998)

3.5.2.2 The Return metric

For long-term event studies, there are mainly three accepted return metrics, one of which is the previously outlined Cumulative Abnormal Return. However for various reasons the Buy-and-Hold-Abnormal-Return (BHAR) and the Calendar-Time-Abnormal-Return (CTAR) are more commonly used in practice.

3.5.2.2.1 Evaluation of CAR for long-term event studies

CAR assumes independence between events and thereby does not account for the cross-correlation of abnormal returns from events that are overlapping in time. We know that this should not pose a problem for short-term event studies, as the number of firms announcing an acquisition within the same industry during an overlapping event window will be very small

and can therefore easily be removed. For the long-term event studies, with event-windows of several years, it becomes obvious that the probability of a firm announcing an acquisition within other same industry firms' event windows becomes palpable. A failure to account for the cross correlation, may diminish the standard errors to the extent where the test statistic becomes so overstated that there is a spurious finding of abnormal returns. This is supported by Conrad & Kaul (1993) who finds that CAR has significant positive upward bias in long-term studies, as the monthly returns are accumulated over long periods of time. Furthermore Gompertz & Lerner (2003) find evidence that CAR may misrepresent abnormal returns in periods of high volatility, possibly due to its failure to account for cross-correlation which tends to be exaggerated in volatile markets.

When evaluating CAR, Barber & Lyon (1997) concludes that it suffers from three biases, which overall effect has a positive bias on the test statistic. The New Listing Bias arise due to the fact that the reference index is likely to contain some newly listed firms which are more likely to underperform the market average. The Measurement Bias stems from the fact that Barber & Lyon (1997) can prove that CAR is a biased predictor of BHAR. Both of these biases induces a positive bias on the test statistic. The Skewness Bias is worth highlighting further, since the normality assumption of long-term abnormal returns is a prerequisite for classical statistical inference. According to Fama (1996), it is reasonable to approximate normality in event studies over short time horizons. However, as positive skewness increases over long-term event-windows, the skewness bias invalidates the normality approximation and produces negative bias in the test statistic. A final critique pertains the usefulness of CAR's economic interpretation. Since CAR accumulates the monthly abnormal returns over the event window, it indirectly assumes that the portfolio is rebalanced every month to maintain an equal value of investment. Barber & Lyon (1997) argues that this does not reflect a realistic investment strategy and thus proposes the BHAR instead.

3.5.2.2.2 Evaluation of BHAR for long-term event studies

The Buy-and-Hold-Return, BHAR, was originally developed by Ritter (1991) and captures the abnormal returns of a buy-and-hold investment strategy executed by a passive investor. Proponents have emphasized BHAR's economic relevance compared to other return metrics by claiming that it is the only return metric that “accurately measure investor experience” (Lyon et al., 1999 p.198). But as Eckebo et al (2005) points out, the total number of event

firms cannot be known ahead of time which makes BHAR impossible to implement as a portfolio strategy.

Another severe criticism relates to the fact that BHAR uses compounded returns, which has the effect that an abnormal return will grow with the size of the remaining investment horizon even if it does not contain any more abnormal returns (Fama, 1998). Hence a longer investment horizon will yield a higher abnormal return everything else equal. The BHAR is also fraught with some of the very same problems apparent in CAR. In addition to sharing new listing bias with CAR it also suffers from rebalancing bias. This bias is a consequence of the BHAR which is compounded without rebalancing each month, whilst the returns of the reference index most likely are based on a monthly rebalanced index. In response to this, Barber & Lyon (1999) propose a methodology for constructing an elaborate reference portfolios that mitigates these problems.

However, BHAR still suffers from a skewness bias that is more profound than CAR, making inferences using the normal distribution unsuitable. Fama (1998) claims the skewness bias is so severe that even CAR is preferred to BHAR as it imposes fewer statistical problems. Barber & Lyon (1999) suggests that the solution to this problem lies in bootstrapping the empirical distribution of BHAR rather than assuming a normal distribution. But as Mitchell & Stafford (2000) investigates the validity of this claim, they conclude from their simulations that the bootstrapping procedure is not appropriate. The reason highlights the most severe short-fall of BHAR, namely that it like CAR assumes independence between events and thus do not account for the cross-correlation of abnormal returns. According to Mitchell & Stafford, the bootstrapping procedure makes very little difference as the statistical inference of the BHARs remains virtually unchanged in their simulations. In contrast Mitchell & Stafford can show that ignoring cross-correlation has a decisive impact on the BHAR results. Using a simplified covariance structure, the authors estimate the cross-correlations and incorporate them into a modified test statistic. The results shows that when taking cross-correlation into account, previously highly significant abnormal returns produced by BHAR now become completely insignificant. The authors conclude that significant abnormal returns produced by BHAR are unreliable due to the potential downward bias in the standard errors as a consequence of not accounting for cross-correlation. The instead join Fama (1998) in advocating for the usage of CTAR.

3.5.2.2.3 Evaluation of CTAR for long-term event studies

Calendar Time Abnormal Return, CTAR first appeared in the studies by Jaffe (1974) and Mandelker (1974). Unlike the previous return metrics, it measures the abnormal return by calculating the portfolio return of event firms each month. By forming equally time weighted portfolios of event firms each month, CTAR effectively incorporates the cross-correlation into the portfolio variance. As a consequence CTAR does not make the unrealistic assumption of independence between events which most likely has a downward bias on the standard errors. Furthermore, as Mitchell & Stafford (2000) concludes, the statistical properties of CTAR are such that statistical inference can be based on an approximate normal distribution.

Nevertheless, the proponents of BHAR such as Loughran and Ritter (1999) have suggested that CTAR has some clear disadvantages. In particular, they argue that CTAR has lower power to detect abnormal returns since they are clustered in periods with high M&A activity. The reason is that CTAR weighs high M&A activity months equally with low M&A activity months and thereby dilutes the impact of the months showing abnormal returns. To bring some clarity to the situation, Mitchell & Stafford (2000) tests the hypothesis that abnormal returns are concentrated in periods of high M&A activity using a sample of NASDAQ stocks where portfolio months are characterized as high or low M&A activity. Using a regression with dummy variables they conclude that there is no systematic relationship between the level of M&A activity and abnormal returns. Furthermore, inducing abnormal returns in 1000 random samples of over 2000 firms, the authors assess the statistical power of CTAR as compared to BHAR when cross-correlation is taken into account. Contrary to Loughran & Ritter (1999), they find that CTAR has a higher power to detect abnormal returns.

3.5.2.2.4 Motivation for choice of return metric

In conclusion we find that both CAR and BHAR are subject to several serious statistical flaws of which the failure to account for cross-correlation is the most severe. Failure to do so will undoubtedly cause false significance of abnormal returns since M&A activities are not isolated incidents. Although BHAR has the attractive property that it measures the buy-and-hold return, we are concerned with how dependent the size of the abnormal return is to the investment horizon. Furthermore, the main purpose of this study does not hinge on whether or not the abnormal return is measured using a buy-and-hold strategy. We instead concur with Mitchell & Stafford (2000), that a monthly rebalanced portfolio is an equally relevant trading

strategy, which unlike the BHAR can be implemented in reality. Without hesitation we therefore choose CTAR as our return metric of choice for this study.

3.5.2.3 The choice of asset pricing model

As previously mentioned, the second bad-model problem concerns the choice of asset pricing model. Such a model is essential for isolating the impact of an event by controlling for non-event factors that determines the stock price. Unfortunately, there is no consensus as to which asset pricing model best serves this purpose. Moreover, Fama contends that all of the existent models are “an incomplete descriptions of the systematic patterns in average returns” (Fama, 1998 p. 291). Even though this suggests that the abnormal returns will be potentially biased regardless of model choice, it does not invalidate the model choice in our mind. On the contrary we believe that minimizing the potential problem becomes all the more important.

Even though CAPM is still the most utilized asset pricing models in finance, the extensive research supporting market anomalies have led to the development of multifactor models with the ability to capture anomalies. The most recognized is the Fama & French three-Factor model which incorporates two well-known anomalies, the size risk premium and the book-to-market risk premium. The model is prevalent in long-term event studies and captures most market anomalies with the exception of momentum, which has been confirmed in several studies (Fama & French, 1996). This prompted Carhart (1997) to develop the four-factor model which adds a momentum risk premium to the three-factor model. We concur with Kothari et al (2005) who recommends the four-factor model on the basis that it controls for all other known determinants of the stock price and this will also be our choice of asset pricing model.

3.5.2.4 Implementation of CTAR

With the choice of return metric and asset pricing model in place, we can turn to describe the CTAR methodology in practice. In the spirit of Bouwman et al. (2009) we will utilize a two year event window for the long-term event study.

3.5.2.4.1 Choice of portfolio weighting scheme

Fama (1998) argues that findings of abnormal return is less prevalent when using a value-weighted portfolio of stock returns. Moreover, Fama contends that value-weighted portfolios may better capture the investment strategy of a real-life investor and are therefore gives a more relevant estimate of abnormal return than equally-weighted portfolios. Although there is some merit to Fama's argument, we do not fully agree with his assessment. We believe that an equally weighted portfolio holds a better potential to assess the potential of abnormal return for the whole market, whilst a value-weighted portfolio will predominately measure the abnormal returns of large-cap stocks. In the cases where the portfolio has fewer constituents, the latter approach may to a large extent dilute important contributions from none large-cap stocks. Since we are interested in measuring the abnormal returns of the market in general, we believe that equally-weighted portfolios, although not representing a common investment strategy, it the most appropriate weighting scheme. We also acknowledge that the short-term event-study methodology do not consider the market capitalization of each firm when calculating CAAR. Furthermore, many of the studies we reviewed, chooses to implement both weighting schemes, which we see as further confirmation that there is no consensus on which is superior.

3.5.2.4.2 Portfolio return calculations and factors

The portfolio return calculations are carried out for all acquisitions, the high valuation acquisitions and the low valuation acquisitions separately. In accordance with Bouwman et al (2009), a firm will enter a portfolio at the completion date of the acquisition rather than at the announcement date previously utilized for the short-term event study. The reason is of course that we want to measure the real impact of the acquisition rather than the perception of thereof. Once a firm has entered into a portfolio, it will remain a constituent for 24 months at which point it is dropped. As an example, the monthly high valuation acquisition portfolio constituents at any given month is entirely based on the firms that made an acquisition in high valuation months during the last 24 months. Once the constituents of each portfolio is established, the portfolio return is calculated as the equally-weighted portfolio return using log-returns of each constituent.

We download the monthly factors and the risk-free rates for Europe from the faculty webpage of Kenneth French (<http://mba.tuck.dartmouth.edu/pages/faculty/ken.french.html>).

3.5.2.4.3 The CTAR regression approach

There are essentially two different, but in essence similar, approaches that have been developed for implementing CTAR. The more traditional approach calculates abnormal returns as the difference between the portfolio return each month and the expected monthly return based on the Carhart's four-factor model. In this study we will utilize the regression approach which runs Carhart's four factor model as a regression model. A statistically significant intercept can then be interpreted as the monthly average abnormal return after controlling for other known factors that determines the stock price. The model is specified as

$$R_{p,t} - R_{f,t} = \alpha_p + b_p(R_{m,t} - R_{f,t}) + s_pSMB_t + h_pHML_t + w_pWML_t + e_{p,t}$$

Where

$R_{p,t} - R_{f,t}$ is the equal-weighted event portfolio return in excess of the risk-free rate

α_p is the intercept representing abnormal return

$(R_{m,t} - R_{f,t})$ is the market risk premium

SMB_t is the difference in return between a portfolio of small-cap stocks and large-cap stocks

HML_t is the difference in return between a portfolio of high B/M stocks and low B/M stocks

WML_t is the difference in return between a portfolio of last year's winners and last year's losers

b_p , s_p , h_p and w_p are the event portfolio sensitivities to each of the four factors

Since the number of portfolio constituents has an impact on the portfolio variance, the monthly re-balancing of the portfolio may cause heteroskedasticity. As a precaution, we will test the residuals from each regression for heteroskedasticity and if needed rerun the regression with robust standard errors.

3.5.2.4.4 Possible biases

The CTAR approach is also subject to some potential biases due to its underlying assumptions. A violation of one such assumption may be found in the fact that the CTAR regression approach indirectly implies that the factor coefficients are constant through time. Since the portfolio is rebalanced each month this may be a less plausible assumption.

Mitchell & Stafford (2000) finds no systematic pattern between abnormal returns and M&A activity level in NASDAQ stocks. Hence they can repudiate the criticism of Loughran & Ritter (1999) that CTAR has lower power to detect abnormal returns because it does not take into account the M&A activity level when assigning weights to each month. If Mitchell & Stafford's result cannot be generalized to the markets in this study, it would imply the results of our CTAR regressions were biased towards finding market efficiency.

Mitchell & Stafford (2000) claims that classical statistical inference is appropriate for CTAR and this assumption seem to be accepted in all the studies we reviewed. However, if the normality assumption is violated, our results would only be asymptotically valid.

Mitchell & Stafford (2000) argues that value-weighted portfolios has better test properties than equally-weighted ditto. Fama (1998) suggests that the possible explanation could be that common asset pricing models have a problem in explaining average returns of small-cap stocks. We recognize this as a potential problem but also note that we have removed any stock with a stock price less than \$3. Furthermore, the minimum deal size for being admitted to the sample is \$50 Mn. This should prohibit some of the smaller companies from entering the sample. If Fama's explanation is valid for our sample, then the results may be biased.

4. Empirical Results

In this section the results from the short-term event study is first presented and thereafter the results of the long-term event study. In each case we will show the outcomes for the full sample followed by the sample of the high and low market valuation acquirers respectively.

4.1 Short term announcement effects

Table 6. CAAR

	Full Sample	High Valuation	Low Valuation	High-Low^W
CAAR	0.0118	0.0178	0.0081	0.0097
Std Dev	0.0348	0.0301	0.0426	0.0060
t-stat	5.45	6.98	1.49	1.62
D.F.	316	60	137	88
P-value	0.0000***	0.0000***	0.1421	0.1085

*** P < 0.0001

W = Welch t-test

Table 6 presents the results from short-term event study. Starting with the full sample, we conclude that the firms experience a statistically significant Cumulative Abnormal Average Return around the announcement date of 1.18%. Interestingly, the CAAR is also highly significant in for the acquisitions announced in high valuation markets. Here the effect has increased to 1.78% on average. Not surprisingly, the market is not as excited of announcements during low valuations markets. Although the CAAR is positive, it cannot be separated from zero or a negative value for that matter. Hence we cannot make any reliable conclusions regarding short-term market response during low valuation markets. Since the high valuation CAAR is more than twice as large as the low valuation CAAR, we test if the difference is statistically significant. Since the variances and sample sizes are different for the high and low valuation markets, we will the Welch t-test. The p-value falls just shy of the 10% significance level, and we cannot prove that the CAAR is greater in high valuation periods than in low-valuation periods. However since it is already proven that CAAR is positive in high-valuation periods, the result suggests that the CAAR in low valuation periods is most likely greater than zero as well.

4.2 Long term calendar time portfolio returns

Table 7 shows the results from the Calendar-time-abnormal-return regressions. The complete portfolio has been estimated with robust standard errors due to a presence of heteroskedasticity in the regression residuals. This has the effect that the standard errors are embellished to compensate for the heteroskedasticity. In spite of this, the intercept suggest an almost significant negative average abnormal return of -0.61% per month during the following two years after the completion date. Since the p-value is slightly higher than 5% we can only hint at this interpretation if we want to keep a 95% confidence level when making our conclusions. The high valuation portfolio show a very similar negative estimate for the monthly average abnormal return. However, the intercept is highly insignificant and we must refrain from drawing any conclusions. The real surprise comes as we review the results of the low valuation portfolio. Not only does the intercept show a negative return greater than 1% (1.18%), it is clearly significant on the 5% level. The question then begs if there is a statistical significant difference in the monthly average abnormal returns between high and low valuation portfolios. The question is best answered by a pooled regression, where the high and low valuation samples are combined. The intercept now represent the monthly average abnormal return for the low valuation portfolio only. By adding the estimate of the dummy variable to the intercept we get the monthly average abnormal return for the high valuation portfolio. Albeit, the intercept is significant on the 10% level, it is not enough for us to safely conclude that the low valuation portfolio has the negative return suggested (-1.42%). Furthermore the dummy variable is highly insignificant and therefore we cannot separate the long-term abnormal return of acquisitions made in high valuation periods from those made in low valuation periods for the long-term study either.

Table 7. Calendar Time Abnormal Returns

	Full Portfolio^R	High Valuation Portfolio	Low Valuation Portfolio	Pooled Portfolio
Intercept (AR)	-0.6133457 (0.056)*	-0.6307822 (0.264)	-1.068061 (0.037)**	-1.428978 (0.080)*
MRP	0.8764093 (0.000)***	0.6426406 (0.000)***	0.8981462 (0.000)***	0.8437434 (0.000)***
SMB	0.2384411 (0.014)**	0.1467037 (0.509)	0.6311175 (0.000)***	0.31422 (0.059)*
HML	0.1213245 (0.291)	0.4464789 (0.095)*	-0.1080467 (0.491)	0.1324032 (0.425)
WML	-0.1013503 (0.137)	0.0884436 (0.679)	-0.2052271 (0.020)**	-0.1834702 (0.068)*
Dummy				0.977434 (0.273)
# of OBS.	168	158	53	191
F-Stat (P-Value)	0.0000***	0.0003***	0.0000***	0.0000***
R-Squared	0.5784	0.1478	0.8186	0.3057
(P Value) *** P < 0.01 ** P < 0.05 * P < 0.10 R = Robust S.E.				

5. Discussion of Results

5.1 Acquirers abnormal returns at the time of deal announcement

As previously stated, the complete sample returns showed a positive CAAR of 1.18 % and were highly significant at the 1 % level. This result is in line with prior research. Bruner (2004) concludes that M&A does pay on average. It is clearly beneficial to the target firm and the combined bidder and target returns create net value. However, regarding acquirers returns Bruner (2004) states that two-thirds of the prior studies had found that value is at least preserved if not created. Furthermore, Bruner (2004) concludes that most M&A deal with regards to financial performance at a minimum covers investors' opportunity costs as buyers earn their required return

When we separate the sample into valuation periods the CAAR for the high valuation sample was significantly positive at 1.78 % whilst the low valuation sample suggests a less positive CAAR at .8 percent albeit not statistically significant. Although we cannot prove that the CAARs are statistically different from each other, we interpret the results as limited evidence that the market is less hospitable towards announcement of acquisitions in low valuation periods than those made during high valuation markets.

Our result and conclusion is similar to those reached by both Lubatkin and O'Neill (1998) and Bouwman et al. (2009). Both studies found that the value of the acquirers' stock increases more during bull markets than in bear markets. In particular Bouwman et al. (2009) found that high market acquirers experienced insignificant abnormal returns of -0.04 percent while low market acquirers bore significantly negative abnormal returns of -1.31 percent. The difference between the three day CARs was found to be significant at 1.28 percent.

5.2 Calendar time abnormal returns for the two year investment period

As formerly stated in the results section, the suggested monthly average abnormal return for the entire sample as well as the high-valuation period yielded a monthly average abnormal return estimate of -0.6% albeit only the full sample was statistically significant on a 10% level. More interesting is the fact that the returns for the low-valuation period were significantly negative with the acquirers experiencing a negative monthly average abnormal return of -1.068 %. This is very different from the results of Bouwman et al. (2009), which

showed a significant positive monthly abnormal return for all samples, of which the low valuation sample had the highest abnormal return.

Before we suggest possible explanations for this result there are several items worth noting. First, as Martynova et al. (2007) have pointed out, the empirical evidence on the long-term post-acquisition performance of European firms is virtually non-existent. Secondly, they note that empirical studies in the U.S. on the subject are also limited with contradictory results.

Researchers have explored the issue of what factors contribute to a mergers success or failure. As mentioned earlier in section 2.2 the more researched topics are: cash versus stock payments, friendly versus hostile mergers, firm size, industry relatedness and domestic versus cross-border deal. Decomposing the sample we note the following statistics. First, cash was the primary form of payment and almost 50 percent of the deals in our sample were cash offers. Second the overwhelming majority of the deal were considered friendly in nature. There were 224 friendly deals in our sample and only 6 that were considered hostile. However, we should note that our sample was not complete and for 87 deals we were unable to find information regarding the mood of the deal. Third, almost 40 percent of the sample were deals that were cross-border in nature.

Bruner (2004) notes that for cash deals in short-term studies, the estimates of cumulative average abnormal returns to the buyer range from zero to positive and in some cases significantly positive. However, in their long term study Martynova et al. (2007) found that there were no significant differences in the profitability of European firms that used different methods of payment. In addition, they found that the merger attitude and the degree of industry relatedness did not have a significant impact on the long term profitability of European firms. However, Martynova et al. (2007) did find that acquisitions of large targets resulted in better profitability for the combined firm than did acquisitions of small targets. Unfortunately, due to time constraints, we were not able to explore this as a possible cause of the long term negative abnormal returns for our sample. We feel that this is an area for future research.

Nevertheless, we feel that there is one possible explanation for the results in our long term study. As mentioned earlier a substantial portion of the mergers in our sample involved cross-border mergers, with 41 percent for the full sample and 45 percent for the low-valuation

sample. **Table 8** below shows the breakdown of domestic and cross-border mergers in our sample.

Table 8. Geography and valuation period

Market Valuation Period	Total M&A´s	Domestic	Cross Border
High	128	77	51
Neutral	122	72	50
Low	67	37	30
Total	317	186	131

Here, as with studies regarding long-term performance, the research is limited and largely confined to the U.S. and U.K. In general, researchers have suggested two alternative reasons why cross-border returns may be different domestic returns. One possibility, suggested by Scherer and Ross, (1990) , is that a cross border acquisition may have higher returns if the acquirers have superior management techniques in their country and if the firm use these techniques to gain economies of scale. In contrast, Ravenscraft and Ross (1987) suggest returns may be lower due to issues regarding loss of control.

In addition to these studies, the literature that does exist regarding cross-border mergers in Europe does seem to suggest a negative relationship between cross-border mergers and both announcement returns and long term firm performance. A study by Goergen and Renneboog, (2004), found that domestic M&A´s led to higher wealth effects than those of a cross-border nature. Furthermore, Martynova and Renneboog, (2006) found that bidding firms engaging in cross-border bids experienced significantly lower announcement effects than those undertaking a domestic deal. In this study of 2419 M&As, cross-border deals represented 30 percent of the sample.

Chatterjee and Ah, (2004) examined if U.K firms acquiring large takeover targets experienced cumulative abnormal returns significantly different from zero two years after the completion of the deal. In this study the authors found that U.K. firms that acquired large targets experienced negative cumulative abnormal returns over the time period examined and at various significance level. More interestingly, the authors found that the post-takeover performance of U.K. firms acquiring other U.K firms was superior to that of U.K. firms

acquiring U.S. firms. In turn, the performance of U.K firms acquiring U.S. targets was superior to that of U.K. firms acquiring Continental European targets. The authors suggest that one possibility for this effect was that cross-border merger activity is a relatively recent development and that there may be learning curve associated with this type of merger.

A recent long-term performance study by Craninckx and Huyghebaert, (2011) investigated empirically the causes of M&A failure during the years 1997-2006. The authors used three proxies for M&A failure: inferior long-term stock performance of the combined firm, inferior operating performance of the combined firm, and target divestment. They found that about 50 percent of European takeovers fail to create shareholder value when considering a two-year window following the completion of the deal. In addition, they found that between 30 and 40 percent of those deals resulted in a decline in operating performance for the combined firm at the end of the second year following deal closure.

It was the purpose of this study to explore the issue of M&A success and acquiring during an economic downturn with regards to firms in Europe. Although the Bouwman study, which we based this paper upon produced results opposite to our work we feel that this is most likely due to the differences between the European and U.S markets. According to the paper by Craninckx and Huyghebaert (2011) long term M&A success in Europe seems to be roughly a 50-50 proposition and as other scholars have noted cross border deals in Europe are associated with lower returns. These factors, plus the fact that a significant proportion of deals in our study are of a cross-border nature, are the primary causes of the firms in our study having negative long term returns. Furthermore, the deals in the low market valuation group had a higher percentage of cross-border deals than the combined sample which may explain why there returns were lower than the firms in the high market valuation group. Perhaps, as Aw and Chatterjee (2004) suggest there is a learning curve involved in cross-border M&A's and that the firms in Europe are still in process of finding how best to integrate a newly acquired foreign target.

6. Conclusion

Using short-term event study techniques and calendar time abnormal return regressions this paper examined the relationship between short-term and long-term acquisition performance and different periods of market valuation. Our sample of 317 European firms involved in mergers during the years 1993 to 2005 were divided into groups depending on whether the deal occurred during a high or a low market valuation period. The goal was to explore, in a manner similar to Bouwman et al. (2009), whether acquisitions in Europe during a market downturn outperforms acquisitions in a bull market. Similar to Bouwman, we study both the effect around the announcement date and the long-term effect during the two years following the completion of the deal. We also compare the short term and the long term performance of the acquisitions on a combined basis of different market valuation periods.

For the short-term event study, we conclude that both the complete sample as well as the high valuation sample yielded a positive announcement effect of 1 respectively 1.8 percent. The low valuation period, however, did not produce any statistically significant announcement effects in either direction. Even though we cannot separate the abnormal return for the high valuation periods from that of the low valuation periods, the results above still suggest that the market is less enthusiastic about acquisitions in low valuation periods. In our opinion, these results make intuitive sense. Investor sentiment is naturally higher during high valuation periods as they usually coincide with bull markets than during low valuation periods that naturally coincide with bear markets. Furthermore, it is reasonable to believe that investors in general, react positive to announcements of acquisitions in the short-term. This is because acquisitions in most cases are a sound way for a company to expand which obviously is something that the investors value. Furthermore, it is plausible that investors are less inclined to question the merits of proposed synergies given by the CEO as a rationale for the acquisition in the short-term before any results have materialized. Of course our results are in line with the existing research such as Bouwman et al. (2009), which lends further credibility to our findings.

Our results from the long-term event study is different from most other studies on the topic. Instead of finding a positive monthly abnormal return for all samples such as Bouwman et al. (2009), where the low valuation period outperformed, we find that the low valuation period actually yields a negative monthly abnormal return of 1 percent in our study. Even though, the high valuation period and the full sample do not produce statistically significant results, the

latter is almost significant at the 5 % level. Both samples show negative monthly abnormal return estimates, and we cannot separate the high valuation period from the low valuation period. This suggests that there is some evidence that points towards these sample periods also having a negative monthly abnormal return. As mentioned, this runs completely counter to the results in the Bouwman study on U.S.firms. We primarily attribute this result to the poor long-term performance of European mergers that has been noted in prior studies, and due to the geographic nature of a large portion of the acquisitions in the sample.

The fact that the long-run acquisition performance is more muted than the short-run announcement effect is not something unexpected, although the results are opposite from Bouwman (2009). It is well known that synergies, which are often touted by the CEO as a rationale for the acquisition, are hard to come by in reality. As time progresses, the initial enthusiasm of the acquisition among investors at the announcement date will dampen as investors assess the real impact of the deal.

6.1 Further research suggestions

We feel that issue of merger success and economic cycles is still relatively unexplored in the U.S and in particular, Europe. We feel that separating acquisitions based on economic cycles and on the basis of size, and geographic differences between the acquiring and a target firm is a subject that merits further study. Due to time and informational constraints, this subject was not explored in this paper but will hopefully be examined in detail in the future.

7. References

7.1 Books

Campbell, J.Y., Lo, A.W. and MacKinlay A.C., 1997. *The econometrics of financial markets*. Princeton, NJ: Princeton University Press

Koeller, T., Goedhart, M. and Wessels, D. (2010). *Valuation: Measuring and Managing the Value of Companies*. 5th ed. Hoboken, NJ: John Wiley & Sons

7.2 Journal Articles and working papers

Aw, M.S.B. and Chatterjee, R.A.,(2004). ‘The performance of UK firms acquiring large cross-border and domestic takeover targets’, *Applied Financial Economics*, Vol. 14(5), pp. 337–49.

Banerjee, A., and E.W. Eckard, (1998) Are mega-mergers anticompetitive? Evidence from the first great merger wave. *Rand Journal of Economics*, 29: 803-827.

Barber, B., and J. Lyon (1996), Detecting abnormal operating performance: The empirical power and specification of test statistics, *Journal of Financial Economics* 41: 359-399.

Bliss, R. T., & Rosen, R. J. (2001). CEO compensation and bank mergers. *Journal of Financial Economics*, 61: 107-138.

Bouwman, C.H.S., K. Fuller, and A.S Nain, (2009), “Market Valuation and Acquisition Quality: Empirical Evidence,” *Review of Financial Studies* 22, 633-679.

Brooks, C., (2008), “Introductory Econometrics for Finance”. New York, NY: Cambridge University Press.

Brown, S. J., & Warner, J. B. 1980. Measuring security price performance. *Journal of Financial Economics*, 8: 205-258.

Brown, S. J., & Warner, J. B. 1985. Using daily stock returns: The case of event studies. *Journal of Financial Economics*, 14: 3-31.

Bruner, R. 2004. Where M&A Pays and Where It Strays: A Survey of the Research. *Journal of Applied Corporate Finance*, Vol 16(4), pp. 63-75.

Campbell, J.Y., Lo, A.W. and MacKinlay A.C., 1997. *The econometrics of financial markets*. Princeton, NJ: Princeton University Press

Campa, J.M. and Hernando, I.,(2004). ‘Shareholder value creation in European M&As’, *European Financial Management*, Vol. 10(1), pp. 47–81.

Carhart, M.M., 1997. On persistence in mutual fund performance. *Journal of Finance* 52, 57-82.

Chatterjee, S., (1986) Types of Synergy and Economic Value: The Impact of Acquisitions on Merging and Rival Firms, *Strategic Management Journal* 7, 119-139

Clark, K. and Ofek, E. (1994). Mergers as a means of restructuring distressed firms: an empirical investigation. *Journal of Financial and Quantitative Analysis* 29, 541-566

Conrad, J., Kaul, G., “ The returns to long term winners and losers: bid-ask biases or biases in computed returns,” *Journal of Finance*, 48, pp.39-63, 1993.

Corrado, C. J., and C. Truong, 2008, Conducting event studies with Asia-Pacific security market data, *Pacific-Basin Finance Journal* 16, 493–521.

Craninckx K. and Huyghebaert N. (2011), *European Financial Management*, Vol. 17, No. 1, 2011, 9–45

Eckbo, B. and O. Norli, 2005, Liquidity risk, leverage and long-run IPO returns, *Journal of Corporate Finance* 11, 1-35.

Fama, E., (1998), Market efficiency, long-term returns, and behavioral finance, *Journal of Financial Economics* 49: 283-306.

Fama, E.F., Fisher, L., Jensen, M.C. and Roll, R., 1969. The adjustment of stock prices to new information. *International Economic Review*, 10(1), pp. 1-21.

Fama, E.F., French, K.R., 1996. Multifactor explanations of asset pricing anomalies. *The Journal of Finance* 51, 55-84.

Foerster, S.R. and Sapp, S.G., (2005). [Valuation of financial versus non-financial firms: a global perspective](#). *Journal of International Financial Markets, Institutions & Money*, ISSN 1042-4431, Vol. 15 pp. 1-20

Fuenzalida, D., Mongrut, S., Nash, M. and Tapia J., (2006). Tender offers in South America: are abnormal returns really high? *Estudios Gerenciales*, ISSN 0123-5923, 12/2006, Vol. 22, pp. 13-36

Goergen, M. and Renneboog, L.,(2004), ‘Shareholder wealth effects of European domestic and cross-border takeover bids’, *European Financial Management*, Vol. 10(1), pp. 9–45.

Gompers, P., and J. Lerner (2003), The really long-run performance of initial public offerings: The pre-Nasdaq evidence, *Journal of Finance* 58: 1355-1392.

Grinstein, Y., & Hribar, P. (2004). CEO compensation and incentives: Evidence from M&A bonuses. *Journal of Financial Economics*, 73: 119-143.

Gugler, K., Mueller, D.C., Yurtoglu, B. and Zulehner, C. (2003)., ‘The effects of mergers: an international comparison’, *International Journal of Industrial Organization*, Vol. 21(9), pp. 625–53.

Haleblian, J., Devers, C. E., McNamara, G., Carpenter, M. A., & Davison, R. B. (2009). Taking stock of what we know about mergers and acquisitions: A review and research agenda *Journal of Management*,35: 469-502.

Harford, J., & Li, K. (2007). Decoupling CEO wealth and firm performance: The case of acquiring CEOs. *Journal of Finance*, 62: 917-949.

Hayward, M. L. A., & Hambrick, D. C. (1997). Explaining the premiums paid for large acquisitions: Evidence of CEO hubris. *Administrative Science Quarterly*, 42: 103-127.

Huyghebaert, N. and Luypaert, M.,(2009). ‘Antecedents of growth through mergers and acquisitions: empirical results from Belgium’, *Journal of Business Research*, in press. doi: 10.1016/j.jbusres.2009.06.003.

Jaffe, J., (1974), Special information and insider trading, *Journal of Business* 47: 411-428.

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review*, 76: 323-329.

de Jong, F., 2007. *Event studies methodology*. Tilburg University [online]. Available at: <http://www.tilburguniversity.edu/research/institutes-and-research-groups/center/staff/dejong/preprints/eventstudies.pdf>[Accessed May 16,2012]

Klein, P. G., (2001) Were the acquisitive conglomerates inefficient? *Rand Journal of Economics*, 32: 745-761

Kothari, S., A. Leone and C. Wasley (2005), Performance-matched discretionary accruals, *Journal of Accounting & Economics* 39, 163-197.

Kotzen, J., Neenan, C., Roos, A. and Stelter, D.,)2003). “Winning Through Mergers in Lean Times: The HiddenPower of Merger and Acquisitions in Periods of Below-Average Economic Growth.” Boston: The Boston Consulting Group. Available at:[http://thelapigroup.com/attachments/Winning Through Mergers in Lean Times rpt Jun 03.pdf](http://thelapigroup.com/attachments/Winning_Through_Mergers_in_Lean_Times_rpt_Jun_03.pdf) [Accessed April 22, 2012]

KPMG. (2007). ‘The determinants of M&A Success.’ www.kpmg.com.au

La Porta R, Lopez-de-Silanes F, Shleifer A, Vishny RW., (1998) Law and finance. *J Polit Econ*;106:1113–55.

Loughran, T., and J. Ritter (2000), Uniformly least powerful tests of market efficiency, *Journal of Financial Economics* 55: 361-389.

Lubatkin, M. and O’Neill, H. (1988), “Merger strategies, economic cycles, and stockholder value”, *Interfaces*, November/December.

- Lyon, J., B. Barber and C. Tsai (1999), Improved methods of tests of long-horizon abnormal stock returns, *Journal of Finance* 54: 165-201.
- Malmendier, U., & Tate, G. (2008). Who makes acquisitions? CEO overconfidence and the market's reaction. *Journal of Financial Economics*, 89: 20-43.'
- Mandelker, G., (1974), Risk and return: The case of merging firms, *Journal of Financial Economics* 1: 303-335.
- Martynova, M., Oosting, S. and Renneboog, L.(2007)., 'The long-term operating performance of European mergers and acquisitions' in: G. Gregoriou and L. Renneboog, eds, *International Mergers and Acquisitions Activity since 1990: Quantitative Analysis and Recent Research*, p. 304.
- Martynova, M., and L. Renneboog, (2008) A Century of Corporate Takeovers: What Have We Learned and Where Do We Stand? *Journal of Banking and Finance* 32(10), 2148-2177.
- Martynova, M. and Renneboog, L.(2009), 'The performance of the European market for corporate control: evidence from the fifth takeover wave', *European Financial Management*, Volume 17, Issue 2, pp. 208 – 259
- Mitchell, M., and E. Stafford (2000), Managerial decisions and long-term stock price performance, *Journal of Business* 73: 287-329.
- Moeller, S.B., F.P. Schlingemann and R.M. Stulz (2005), "Wealth destruction on a massive scale: a study of acquiring-firm returns in the merger wave of the late 1990s", *The Journal of Finance* 60 (2), 757-782.
- Ravenscraft, D. J. and Scherer, F. M. (1987) *Mergers, Sell-off & Economic Efficiency*, The Brookings Institution.
- Ritter, J. (1991) The long-run performance of initial public offerings. *Journal of Finance* 46, 3-27
- Roll, R. (1986). The hubris hypothesis of corporate takeovers. *Journal of Business*, 59: 197-216.
- Scharfstein D.S. and Stein J.C. (1990) , "Herd behavior and investment", *American Economic Review*, Vol. 80 (3), pp. 465–479.
- Scherer, F.M. and Ross D. (1990) *Industrial Market Structure and Economic Performance*, Houghton Mifflin, Boston.
- Schlingemann, F.P., Stulz, R.M., Walkling, R.A., (2002). Divestitures and the liquidity of the market for corporate assets. *Journal of Financial Economics* 64, 117–144.
- Shleifer, A., and R.W. Vishny, (1989) Management Entrenchment: The Case of Manager-specific Investments, *Journal of Financial Economics* 25(1), 123-139.

Weitzel, B. and McCarthy, K. J. (2011): “Theory and evidence on mergers and acquisitions by small and medium enterprises”, *International Journal of Entrepreneurship and Innovation Management*, 14: 248–275

8. Appendix

Table 9. High valuation period sample firms

	Date	Acquirer	Value	Acquirer Country	Target Country
1	1994-01-01	Christian Dior	58046100	France	Switzerland
2	1995-07-07	Eurodis Electron PLC	89670000	United Kingdom	Germany
3	1996-12-01	Hollandsche Beton Groep NV	175853100	Netherlands	Spain
4	1997-05-01	Avonmore Foods PLC	553732850	Ireland	United Kingdom
5	1997-05-01	Guinness Plc	2227000000	United Kingdom	France
6	1997-05-01	La Rinascente SpA	312915895	Italy	Sweden
7	1997-05-17	CIR Compagnie Industriali Riunite SpA	265198046	Italy	United Kingdom
8	1997-06-01	Pernod Ricard	246658710	France	Denmark
9	1997-07-01	Metro AG	2831350000	Germany	United Kingdom
10	1997-07-12	Italmobiliare Spa	93007236	Italy	United Kingdom
11	1997-09-01	Adidas AG	1315032465	Germany	Poland
12	1997-09-01	Alvis Plc	121537500	United Kingdom	Sweden
13	1997-09-01	Kerry Group Plc	542867500	Ireland	United States
14	1997-09-01	Telefonica SA	806293019	Spain	United Kingdom
15	1997-12-01	Amer Group Plc	92895000	Finland	Norway
16	1998-01-01	Johnson Matthey PLC	107087500	United Kingdom	Belgium
17	1998-02-01	KLM Royal Dutch Airlines NV	170570070	Netherlands	Norway
18	1998-02-04	Nestle SA	1176890000	Switzerland	Spain
19	1998-03-01	Kier Group Plc	65770000	United Kingdom	France
20	1998-05-01	Andrews Sykes Group Plc	72020100	United Kingdom	Netherlands
21	1998-06-01	Audi Ag	190768500	Germany	Finland
22	1998-06-01	Jeronimo Martins SGPS SA	118211250	Portugal	Germany
23	1998-06-01	Low & Bonar Plc	110058750	United Kingdom	Spain
24	1998-06-02	Enso	1088250733	Finland	Germany
25	1998-07-01	JJB Sports Plc	483720000	United Kingdom	Italy
26	1998-07-27	Continental AG	1930000000	Germany	Germany
27	1998-11-26	Air Liquide SA	186048800	France	Germany
28	1999-01-18	Shield Diagnostics Group Plc	132024000	United Kingdom	France
29	1999-12-01	London Properties Plc	77381920	United Kingdom	Austria
30	2003-07-03	Actividades de Construcción y Servicios SA	2423085000	Spain	Germany
31	2003-07-14	Groupe Bourbon	58697600	France	Sweden
32	2003-07-16	Firstgroup PLC	70017200	United Kingdom	France
33	2003-07-18	Electricidade de Portugal SA	672510000	Portugal	France
34	2003-07-31	Kudelski SA	272688000	Switzerland	France
35	2003-08-05	Alerion Industries SpA	227020000	Italy	United Kingdom
36	2003-08-21	Mouchel PLC	124735815	United Kingdom	Netherlands
37	2003-08-21	Suominen Corp	66702000	Finland	Denmark
38	2003-09-01	Taylor Woodrow Plc	780881919	United Kingdom	United Kingdom
39	2003-09-08	Boliden AB	817512000	Sweden	Switzerland
40	2003-09-26	Areva	1091265000	France	Sweden
41	2003-09-30	Actelion Ltd	190138454	Switzerland	Germany
42	2003-12-01	Davide Campari Milano SpA	263868000	Italy	Germany
43	2003-12-09	Wendel Investissement	806619000	France	United Kingdom
44	2003-12-12	Geberit AG	446483130	Switzerland	Norway
45	2004-01-05	Lectra	64760115	France	Spain
46	2004-01-13	Imperial Tobacco Group Plc	711171000	United Kingdom	Netherlands

47	2004-01-16	Somfy International	86540080	France	United Kingdom
48	2004-01-19	L'Air Liquide SA	3344490000	France	France
49	2004-01-20	Carlsberg A/S	1316073750	Denmark	Germany
50	2004-01-26	Sanofi-Synthelabo	71498366336	France	Netherlands
51	2004-02-02	Cad It Spa	124685000	Italy	France
52	2004-03-03	DS Smith Plc	307012080	United Kingdom	France
53	2004-03-03	Endesa SA	147898300	Spain	Ireland
54	2004-03-12	Enterprise Inns Plc	1103873400	United Kingdom	United Kingdom
55	2004-03-19	Babcock International Group PLC	182095122	United Kingdom	Italy
56	2004-04-05	Afg Arbonia Forster Holding Ag	96899225	Switzerland	Italy
57	2004-04-05	Anglo American Plc	397129850	United Kingdom	Italy
58	2004-04-07	S&B Industrial Minerals	66018575	Greece	Spain
59	2004-04-14	Guinness Peat Group PLC	120048703	United Kingdom	United Kingdom
60	2004-04-23	MVV Energie AG	154849500	Germany	Netherlands
61	2004-05-27	Hera SpA	59237460	Italy	United Kingdom
62	2004-06-18	Industria de Diseno Textil SA (Inditex SA)	68639400	Spain	United Kingdom
63	2004-06-24	Boiron SA	74784055	France	United Kingdom
64	2004-07-12	Koninklijke Ahold NV	1006856500	Netherlands	United Kingdom
65	2004-07-13	Morse PLC	93511575	United Kingdom	Spain
66	2004-11-19	Scania AB	1081153902	Sweden	United Kingdom
67	2004-12-07	Schweizerhall Holding AG	92091898	Switzerland	Italy
68	2004-12-14	DSM NV	685516500	Netherlands	United Kingdom
69	2004-12-17	Carl Zeiss Meditec AG	91479262	Germany	United Kingdom
70	2004-12-17	Rowe Evans Investments PLC	150436585	United Kingdom	France
71	2004-12-20	Tullow Oil PLC	388400000	United Kingdom	Switzerland
72	2005-01-10	Orkla ASA	917321988	Norway	Italy
73	2005-01-17	Fortum Oyj	498470959	Finland	France
74	2005-01-24	Almanova Corporation	443700000	Finland	France
75	2005-01-25	Adecco SA	75040724	Switzerland	Italy
76	2005-03-14	Kingspan Group PLC	99559600	Ireland	United Kingdom
77	2005-03-22	SCi Entertainment Group PLC	138634138	United Kingdom	United Kingdom
78	2005-04-05	Zodiac SA	600000000	France	United Kingdom
79	2005-04-18	William Hill PLC	954248400	United Kingdom	Switzerland
80	2005-04-19	Fenner Plc	84049758	United Kingdom	United Kingdom
81	2005-04-19	Ulster Television PLC	186953160	United Kingdom	Germany
82	2005-05-02	Amer Sports Oyj	624340500	Finland	Italy
83	2005-05-04	Natraceutical SA	102948000	Spain	Spain
84	2005-05-11	AP Moeller Maersk A/S	2984125052	Denmark	France
85	2005-05-26	Aarhuskarlshamn AB	329006380	Sweden	United Kingdom
86	2005-05-27	InBev	140163100	Belgium	Sweden
87	2005-05-27	International Greetings PLC	63710500	United Kingdom	Switzerland
88	2005-06-13	Hexagon AB	1033505114	Sweden	Netherlands
89	2005-06-20	Wilhelm Wilhelmsen ASA	199540030	Norway	United Kingdom
90	2005-06-28	Koninklijke KPN NV	1192121000	Netherlands	United Kingdom
91	2005-07-11	Associated British Foods PLC	711066950	United Kingdom	Norway
92	2005-07-11	Elisa Corporation	420332479	Finland	Finland
93	2005-07-27	Finmeccanica SpA	181303178	Italy	Finland
94	2005-08-23	Unibet Group Plc	130502303	United Kingdom	Ireland
95	2005-08-24	Vinci	7246912065	France	United Kingdom
96	2005-08-31	Stora Enso Oyj	549810000	Finland	France
97	2005-09-08	Generale Mobiliare Interessenze Azionarie SpA	273196000	Italy	United Kingdom
98	2005-09-12	Rubis	143944400	France	United Kingdom

99	2005-09-12	Sika AG	320927408	Switzerland	United Kingdom
100	2005-09-19	Imerys	96052600	France	United Kingdom
101	2005-09-20	GN Store Nord A/S	56966146	Denmark	Norway
102	2005-09-26	E.ON AG	830656500	Germany	Netherlands
103	2005-09-26	Eniro AB	1013689300	Sweden	United Kingdom
104	2005-09-29	Belgacom SA	715602262	Belgium	Finland
105	2005-10-06	Inspicio Plc	91631800	United Kingdom	Italy
106	2005-10-07	National Express Group PLC	816395000	United Kingdom	France
107	2005-10-17	British Sky Broadcasting Group PLC	372426652	United Kingdom	Italy
108	2005-10-19	Rakentajain Konevuokraamo Oyj	157927758	Finland	France
109	2005-10-25	Telefon AB LM Ericsson	2123160000	Sweden	Switzerland
110	2005-10-28	Genus PLC	332748024	United Kingdom	France
111	2005-10-31	Carillion Plc	508174464	United Kingdom	Belgium
112	2005-11-08	Fuller Smith & Turner PLC	144257745	United Kingdom	United Kingdom
113	2005-11-10	Koninklijke BAM Groep NV	1104722157	Netherlands	United Kingdom
114	2005-12-02	Cementos Portland Valderrivas SA	291340139	Spain	United Kingdom
115	2005-12-07	Axalto Holding NV	770373706	Netherlands	United Kingdom
116	2005-12-09	Hotel Corp (The) Plc	71862750	United Kingdom	United Kingdom
117	2005-12-12	Boizel	614198000	France	Netherlands
118	2005-12-12	Impregilo SpA	80908775	Italy	Spain
119	2005-12-15	Generale de Sante	515032500	France	United Kingdom
120	2005-12-16	Energie Baden-Wurttemberg AG	432387750	Germany	France
121	2005-12-20	Belvedere	113491832	France	Italy
122	2005-12-20	Carrefour SA	593204069	France	France
123	2005-12-20	Kemira Oyj	105635200	Finland	Germany
124	2005-12-22	DSV A/S	265961083	Denmark	France
125	2005-12-23	AstraZeneca PLC	210000000	United Kingdom	France
126	2005-12-23	Davide Campari-Milano SpA	154297000	Italy	United Kingdom
127	2005-12-28	Mecalux SA	74281374	Spain	Spain
128	2005-12-30	Indra Sistemas	57672975	Spain	Spain

Table 10. Neutral valuation period sample firms

	Date	Acquirer	Value	Acquirer Country	Target Country
1	1993-02-01	Kingfisher Plc	1486500000	United Kingdom	France
2	1993-02-18	Gehe AG- now named celesio	472598382	Germany	France
3	1993-03-19	Zodiac SA	67018140	France	France
4	1993-06-01	David S Smith (Holdings) Plc	148366250	United Kingdom	United Kingdom
5	1993-07-01	Alcatel Alsthom SA	893610000	France	United Kingdom
6	1993-07-01	Huhtamaki Oy	98520503	Finland	Sweden
7	1993-08-06	Tre Byggare Holding- now peab	65819600	Sweden	Sweden
8	1993-11-01	Karstadt Ag	747396535	Germany	Germany
9	1994-02-01	Bayerische Motoren Werke AG	1204440000	Germany	United Kingdom
10	1994-02-08	Gkn PLC	735344800	United Kingdom	United Kingdom
11	1994-02-18	Pinault-Printemps SA	991482100	France	France
12	1994-06-01	Daily Mail and General Trust Plc	140371900	United Kingdom	United Kingdom
13	1994-11-07	Emerson Electric U K Ltd	329369865	United Kingdom	United Kingdom

14	1994-12-01	Rjb Mining Plc	1275719500	United Kingdom	United Kingdom
15	1994-12-19	Premier Consolidated Oilfields PLC	159171000	United Kingdom	United Kingdom
16	1995-01-01	De La Rue Plc	1068353000	United Kingdom	United Kingdom
17	1995-01-18	Lyonnais des Eaux SA	92676482	France	France
18	1995-01-23	Glaxo Plc	14140320000	United Kingdom	United Kingdom
19	1995-09-01	IMI Plc	207679900	United Kingdom	Germany
20	1995-11-01	Norske Skogindustrier ASA	348784740	Norway	Austria
21	1995-11-01	Talisman Energy Ltd	206982280	United Kingdom	United Kingdom
22	1995-12-01	Granada Group Plc	5974800000	United Kingdom	United Kingdom
23	1995-12-01	Yit Corporation	52792720	Finland	Finland
24	1996-01-01	Gehe AG	1060713000	Germany	United Kingdom
25	1996-01-01	Persimmon Plc	274482750	United Kingdom	United Kingdom
26	1996-01-01	Wegener NV	148872000	Netherlands	Netherlands
27	1996-01-31	Fiat SpA	460227616	Italy	Italy
28	1996-03-01	SkyePharma Plc	206772750	United Kingdom	Switzerland
29	1996-03-06	Ter Beke NV	197900278	Belgium	Belgium
30	1996-04-01	Balfour Beatty Ltd	76325000	United Kingdom	United Kingdom
31	1996-06-01	Greene King Plc	306332375	United Kingdom	United Kingdom
32	1996-06-01	Johnston Press Plc	328822600	United Kingdom	United Kingdom
33	1996-06-01	Kone Corp	132599265	Finland	Germany
34	1996-06-25	Spector Photo Group NV	75690788	Belgium	Switzerland
35	1996-07-16	Georg Fischer AG	64793913	Switzerland	Switzerland
36	1996-08-03	Groupe Danone	84969142	France	Spain
37	1996-09-06	Canal Plus SA	1424963086	France	Netherlands
38	1996-10-01	Millennium & Copthorne Hotels Plc	126793350	United Kingdom	United Kingdom
39	1996-10-01	United Business Media Plc	927469875	United Kingdom	United Kingdom
40	1996-10-18	Huhtamaki Oy	110000000	Finland	Italy
41	1997-01-01	Havas	518689788	France	France
42	1997-01-08	OEM International AB	67422178	Sweden	Sweden
43	1997-01-16	Rieber & Son ASA	123552762	Norway	Denmark
44	1997-02-01	Italcementi Spa	98649900	Italy	Italy
45	1997-04-01	Lagardere SCA	1053830963	France	France
46	1997-04-01	Lyonnais des Eaux SA	7645149851	France	France
47	1998-08-01	Prosafe	88728915	Norway	Norway
48	1998-09-01	La Seda de Barcelona	161520000	Spain	Spain
49	1998-09-01	Scottish & Southern Energy PLC	4374500000	United Kingdom	United Kingdom
50	1999-02-01	Eramet SA	205718750	France	United States
51	1999-02-02	Obrascon Huarte SA	349589368	Spain	Spain
52	1999-02-20	Ing C Olivetti & C SpA	66902060000	Italy	Italy
53	1999-02-26	Philips Electronics NV	1000000000	Netherlands	United Kingdom
54	1999-04-15	IMI PLC	543176600	United Kingdom	United Kingdom
55	1999-05-01	DFDS AS	285348255	Denmark	Denmark
56	1999-05-04	Fiskars Corporation	70000000	Finland	United States
57	1999-05-05	Huhtamaki Oyj	1012261600	Finland	Netherlands
58	1999-06-01	Aceralia Corporacion Siderurgica SA	197810200	Spain	Spain
59	1999-06-01	Club Mediterranee SA	78547000	France	France
60	1999-06-10	Norsk Hydro ASA	2569251856	Norway	Norway
61	1999-06-17	WS Atkins Plc	79415000	United Kingdom	United Kingdom
62	1999-07-02	Geveke NV	69598000	Netherlands	Netherlands
63	1999-07-05	Deutsche Telekom AG	8400000000	Germany	United Kingdom
64	1999-07-13	L'Air Liquide SA	11200000000	France	United Kingdom
65	1999-08-16	Linde AG	3712915900	Germany	Sweden

66	1999-08-30	Carrefour SA	13604500000	France	France
67	1999-09-01	Hellenic Technodomiki Sa	136361007	Greece	Greece
68	1999-09-16	K+S AG	223481523	Germany	Germany
69	1999-09-20	Rolls-Royce Group PLC	935623050	United Kingdom	United Kingdom
70	1999-10-14	Heidelberger Zement AG	1299650724	Germany	Belgium
71	1999-11-29	Axfood AB	422995909	Sweden	Sweden
72	1999-11-29	Dixons Group Plc	717066637	United Kingdom	Norway
73	2000-01-17	Glaxo Wellcome PLC	75981000000	United Kingdom	United Kingdom
74	2000-01-28	Johnson Service Group PLC	155049400	United Kingdom	United Kingdom
75	2000-01-31	Gildemeister AG	127847070	Germany	Italy
76	2000-01-31	Lassila & Tikanoja Oyj	100000000	Finland	Finland
77	2000-01-31	MAN Nutzfahrzeuge AG	196898751	Germany	United Kingdom
78	2000-02-01	Dairy Crest Group Plc	403950000	United Kingdom	United Kingdom
79	2000-03-08	Fomento de Construcciones y Contratas SA	247981546	Spain	Spain
80	2000-04-01	Delyn Group Plc	187867800	United Kingdom	United Kingdom
81	2000-04-01	Inapa Investimentos Participacoes E Gestao Sa	114745831	Portugal	Germany
82	2000-04-01	Recordati SpA	105752364	Italy	France
83	2000-04-01	Rieter Hldg Ltd	63684000	Switzerland	France
84	2000-04-06	Grupo Ferrovial SA	114417470	Spain	Poland
85	2000-04-06	Holmen Ab	229797520	Sweden	Spain
86	2000-04-07	Luminar PLC	807482200	United Kingdom	United Kingdom
87	2000-04-25	Lagardere SCA	1032350000	France	France
88	2000-05-01	Groupe Flo Sa	65184000	France	France
89	2000-05-01	Metsa Serla Oyj	2093648000	Finland	Sweden
90	2000-05-03	Kongsberg Gruppen ASA	82222316,08	Norway	Norway
91	2000-05-29	France Telecom	36888635233	France	United Kingdom
92	2000-06-01	Campofrio Alimentacion SA	282263200	Spain	Spain
93	2000-06-20	Publicis Groupe SA	1783570000	France	United Kingdom
94	2000-06-21	Metso Oyj	1585491390	Finland	Sweden
95	2000-07-01	EDB Business Partner ASA	289243560	Norway	Norway
96	2000-07-01	Remy Cointreau Sa	485306764	France	Netherlands
97	2000-07-07	Koninklijke Wessanen NV	56068968,69	Netherlands	France
98	2000-07-13	Vinci	1737411637	France	France
99	2000-07-21	Richemont AG	1684970663	Switzerland	Switzerland
100	2000-07-31	Evotec Biosystems AG	474948000	Germany	United Kingdom
101	2000-07-31	Tullow Oil Plc	302103000	United Kingdom	United Kingdom
102	2000-08-01	Gunnebo AB	74975000	Sweden	United Kingdom
103	2000-08-01	Qualceram Plc	62979000	Ireland	United Kingdom
104	2000-08-01	Scottish & Southern Energy Plc	314895000	United Kingdom	United Kingdom
105	2000-08-02	Unit 4 NV	159649350	Netherlands	United Kingdom
106	2000-08-07	Arrow Electronics Inc [and others]	3813810000	United Kingdom [and others]	Germany
107	2000-12-04	EMS-Chemie Holding AG	342151278	Switzerland	Switzerland
108	2000-12-11	Sasol Ltd	1200000000	United Kingdom	Germany
109	2000-12-13	EVN AG	1739131014	Austria	Austria
110	2000-12-21	Eni SpA	3976358000	Italy	United Kingdom
111	2002-12-05	Amec Plc	270162000	United Kingdom	France
112	2002-12-09	Wincanton Plc	240408625	United Kingdom	United Kingdom
113	2002-12-18	Mediaset Spa	283921200	Italy	Spain
114	2003-03-04	Bollere Investissement	185266000	France	France
115	2003-03-12	Ing C Olivetti & C SpA	1198402001	Italy	Italy
116	2003-04-09	Deutsche Lufthansa AG	64275000	Germany	Italy

117	2003-04-15	Deceuninck NV	51710400	Belgium	Germany
118	2003-05-02	Heineken NV	863856150	Netherlands	Austria
119	2003-05-07	Rieber & Son ASA	65246705	Norway	Norway
120	2003-05-22	Getinge Industrier AB	112869200	Sweden	Germany
121	2003-05-29	Fidia SpA (Padova)	184734050	Italy	Italy
122	2003-05-29	Orbis SA	108940191	Poland	Poland

Table 11. Low valuation period sample firms

	Date	Acquirer	Value	Acquirer Country	Target Country
1	2000-09-13	Hill & Smith Holdings PLC	97948080	United Kingdom	United Kingdom
2	2000-10-01	Logica Plc	546231000	United Kingdom	Germany
3	2000-10-11	Enel SpA	9588700000	Italy	Italy
4	2000-10-22	Azucarera Ebro Agrícolas SA	496868500	Spain	Spain
5	2000-10-24	Micronas Semiconductor Holding AG	142429095	Switzerland	Germany
6	2000-11-10	CRH Plc	368070195	Ireland	Switzerland
7	2000-11-10	Greencore Group PLC	369845639	Ireland	United Kingdom
8	2000-11-30	Aldata Solution Oyj	61506382	Finland	France
9	2001-01-15	Taylor Woodrow Plc	821267600	United Kingdom	United Kingdom
10	2001-01-24	Persimmon PLC	790340000	United Kingdom	United Kingdom
11	2001-02-02	H Lundbeck A/S	99657375	Denmark	Germany
12	2001-02-14	Inferentia Spa	205392895	Italy	Italy
13	2001-02-16	Fortum Oyj	3076150000	Finland	Sweden
14	2001-03-27	AutoLogic Holdings Plc	106859075	United Kingdom	United Kingdom
15	2001-03-31	Energie Baden-Württemberg AG	1615770100	Germany	Spain
16	2001-04-09	ABB Ltd	280286500	Switzerland	France
17	2001-05-21	Koenig & Bauer AG	57987088	Germany	Switzerland
18	2001-05-22	LDC	69998580	France	France
19	2001-07-04	Koninklijke Philips Electronics NV	1100000000	Netherlands	United Kingdom
20	2001-07-06	Schmalbach Lubeca AG	73511960	Germany	United Kingdom
21	2001-07-10	Bayer AG	6170475000	Germany	Germany
22	2001-07-20	Sanoma WSOY Oyj	1088875000	Finland	Netherlands
23	2001-07-27	Valora Holding AG	50885291	Switzerland	Sweden
24	2001-08-05	Necchi Spa	20553903	Italy	Italy
25	2001-08-06	Northern Electric Plc	1435218000	United Kingdom	United Kingdom
26	2001-08-22	Tamedia Ag	55612645,83	Switzerland	Switzerland
27	2001-10-01	Coloplast	117960000	Denmark	United Kingdom
28	2001-10-22	Fenner Plc	68081750	United Kingdom	United Kingdom
29	2001-11-13	Forbo Holding AG	210000000	Switzerland	United Kingdom
30	2001-11-19	Groupe Crit	110525000	France	France
31	2001-12-10	Teleca AB	133765204	Sweden	Sweden
32	2001-12-12	Kontron AG	164441542	Germany	Germany
33	2001-12-21	Solvay SA	1170975000	Belgium	Italy
34	2002-01-18	Givaudan SA	450018001	Switzerland	Switzerland
35	2002-01-25	Deutsche Telekom AG	4123780000	Germany	Germany
36	2002-01-30	Koninklijke KPN NV	1081875000	Netherlands	Germany
37	2002-03-08	JJB Sports PLC	60421320	United Kingdom	United Kingdom

38	2002-03-12	Johnston Press Plc	795508000	United Kingdom	United Kingdom
39	2002-03-21	Endesa SA	112344570	Spain	Italy
40	2002-03-22	Davis Service Group Plc	608757565	United Kingdom	Denmark
41	2002-03-30	Iberdrola SA	313830000	Spain	Spain
42	2002-04-03	Vranken - Pommery Monopole	131910000	France	France
43	2002-04-23	Finnlines Oyj	59480633	Finland	Sweden
44	2002-05-02	Electrolux AB	166438222	Sweden	Belgium
45	2002-05-13	Communis Plc	64263015	United Kingdom	United Kingdom
46	2002-05-15	South Staffordshire Plc	64830645	United Kingdom	United Kingdom
47	2002-05-16	easyJet plc	546414000	United Kingdom	United Kingdom
48	2002-06-06	Spector Photo Group NV	93915000	Belgium	Belgium
49	2002-06-14	Kone Corp	801720000	Finland	Finland
50	2002-06-20	Lundin Petroleum AB	172500000	Sweden	France
51	2002-07-01	Mr Bricolage SA	79711906	France	France
52	2002-07-17	Spectris Plc	151747500	United Kingdom	Netherlands
53	2002-08-29	Ramirent Oyj	117226376	Finland	Norway
54	2002-09-04	DSM NV	1745450000	Netherlands	Switzerland
55	2002-09-12	Dairy Crest Group Plc	134429650	United Kingdom	United Kingdom
56	2002-09-12	Edison SpA	146392500	Italy	Italy
57	2002-09-12	Hollandsche Beton Groep NV	204949500	Netherlands	Netherlands
58	2002-09-26	Strabag AG	146467500	Germany	Germany
59	2002-10-08	Associated British Foods Plc	270179448	United Kingdom	Switzerland
60	2002-10-08	LOGICA PLC	801766400	United Kingdom	United Kingdom
61	2002-10-09	Dixons Group Plc	360143200	United Kingdom	Italy
62	2002-10-16	Halma Plc	70686000	United Kingdom	Belgium
63	2003-01-09	Toupargel SA	84053430	France	France
64	2003-01-09	WM Morrison Supermarkets Plc	4839000000	United Kingdom	United Kingdom
65	2003-01-21	LGP Telecom Holding AB	88431817	Sweden	Sweden
66	2003-02-04	Nestle SA	603624000	Switzerland	Switzerland
67	2003-02-17	Tele2 AB	92395167	Sweden	United Kingdom

Table 12. Classification of MSCI Europe into High, Neutral or Low Valuation Months

High Valuation Months	Neutral Valuation Months		Low Valuation Months
juni 1997	January 1993	april 1997	september 2000
juli 1997	februari 1993	maj 1997	oktober 2000
augusti 1997	mars 1993	augusti 1998	november 2000
september 1997	april 1993	september 1998	januari 2001
oktober 1997	maj 1993	oktober 1998	februari 2001
november 1997	juni 1993	februari 1999	mars 2001
december 1997	juli 1993	mars 1999	april 2001
januari 1998	augusti 1993	april 1999	maj 2001
februari 1998	september 1993	maj 1999	juni 2001
mars 1998	oktober 1993	juni 1999	juli 2001
april 1998	november 1993	juli 1999	augusti 2001
maj 1998	december 1993	augusti 1999	september 2001
juni 1998	januari 1994	september 1999	oktober 2001
juli 1998	februari 1994	oktober 1999	november 2001
november 1998	mars 1994	november 1999	december 2001
december 1998	april 1994	januari 2000	januari 2002
januari 1999	maj 1994	februari 2000	februari 2002
december 1999	juni 1994	mars 2000	mars 2002
april 2003	juli 1994	april 2000	april 2002
maj 2003	augusti 1994	maj 2000	maj 2002
juni 2003	september 1994	juni 2000	juni 2002
juli 2003	oktober 1994	juli 2000	juli 2002
augusti 2003	november 1994	augusti 2000	augusti 2002
september 2003	december 1994	december 2000	september 2002
oktober 2003	januari 1995	november 2002	oktober 2002
november 2003	februari 1995	december 2002	januari 2003
december 2003	mars 1995	mars 2003	februari 2003
januari 2004	april 1995		
februari 2004	maj 1995		
mars 2004	juni 1995		
april 2004	juli 1995		
maj 2004	augusti 1995		
juni 2004	september 1995		
juli 2004	oktober 1995		
augusti 2004	november 1995		
september 2004	december 1995		
oktober 2004	januari 1996		
november 2004	februari 1996		
december 2004	mars 1996		
januari 2005	april 1996		
februari 2005	maj 1996		
mars 2005	juni 1996		
april 2005	juli 1996		
maj 2005	augusti 1996		

juni 2005	september 1996		
juli 2005	oktober 1996		
augusti 2005	november 1996		
september 2005	december 1996		
oktober 2005	januari 1997		
november 2005	februari 1997		
december 2005	mars 1997		