MASTER’S THESIS

MERGERS AND VALUE CREATION
AN EMPIRICAL INVESTIGATION OF SHORT- AND LONG-TERM IMPACT ON BIDDERS IN THE EUROPEAN UNION

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2015
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Preface

The Author has taken the advantage to thank Associate Professor Erik Strøjer Madsen, for always being available in times of need, for his perspectival enthusiasm and commitment to this paper.

A further thanks should go to the Author’s family and friends, without their support and patience, this paper would have been impossible to realize.

Above all, the Author thanks all the people around who was there to help and was there throughout the time prior completion. It has indeed been some long months.
1. Introduction

An important element of a dynamic economy are *Mergers and Acquisitions* (M&A). It is widely recognized, that demand declines in mature industries and resource allocation could be problematic at different stages of a company’s – or an industry’s – life span. M&A just offers an alternative pathway to acquire new *resources and capabilities*. The path of dependence of a company is unique and its existing *resources and capabilities* profile does give a degree of protection against replication (Peteraf, M. A., 1993). Hamel, G. (2007) argues that each company carries its own corporate DNA with a unique genetic code. All sort of models can be used to describe the level of uniqueness of *resources and capabilities* and *competitive advantage*. One of the most valuable information the practical researcher can acquire in the field of M&A is related to *value creation*. One could say that acquisitions create value when the cash flows of the combined companies (merged company) are greater than they otherwise would have been for the individual companies themselves. An increase (or decrease) due to an event, could be categorized as an *abnormal performance*, and if the performance of interest is measured as a return, then an *abnormal return* (Ravenscraft and Scherer, 1989; Healy, Palepu and Ruback, 1992).

Many studies have examined *abnormal returns* in this field, and most studies seems to agree that shareholders overall from bidder and target company gains from acquisitions. Even though acquisitions overall create value, the distribution of the value created, tends to be lopsided, with the target shareholders capturing the bulk. Moreover, most empirical research shows that one third or more of the acquiring companies, destroys value for their shareholders due to a transferring of all the benefits of the acquisition to the target shareholders (Koller et al., 2010). This is one of the reasons why, contradictory evidence is found, when we try to segregate the *abnormal return* from the shareholders in the bidding company (acquirer shareholders). Before covering the wealth creation to the bidders in the European Union, which is the essential in this study, the paper take a brief look at the US studies.

In the US studies, the short-run performance for the bidders *abnormal return (%)* 1 Jensen and Ruback, 1983; Jarrell, Brickley and Netter, 1988; Magenheim and Mueller, 1988; Bradley, Desai and Kim, 1988; Jarrell and Poulsen, 1989; Loderer and Martin, 1990; Schwert, 1996; Masulis, Wang and Xie; 2007 shows a *positive gain* whereas Datta, Iskandar-Datta and Raman, 2001; Bhagat, Dong, Hirshleifer and Noah, 2005; Magenheim and Mueller, 1988 shows *zero gain* and Kaplan and Weisbach, 1992; Andrade, Mitchell and Stafford, 2001; Graham, Lemmon and Wolf, 2002; Moeller, Schlingemann and Stulz, 2005; Cai and Vijh, 2007; Sudarsanam and Huang, 2007; Bouwman, Fuller and Nain, 2009 shows a *negative gain* to the bidders *abnormal return*.

In addition, in the US studies, the long-run performance for the bidders *abnormal return (%)* Magenheim and Mueller, 1988; Agrawal, Jaffe and Mandelker, 1992; Loderer and Martin, 1992; Loughran and Vlah, 1997 and Rau

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1 All target returns are statistically significant at 1 % whereas bidder returns have been found to be both significant and insignificant in the presented studies.
and Vermaelen, 1998 shows a positive gain whereas Mitchell and Stafford, 2000 shows zero gain and Dodd and Ruback, 1997; Franks, Harris and Mayer, 1988; Mandelker, 1974; Langetieg, 1978; Magenheim and Mueller, 1988; Frank, Harris and Titman, 1991; Moeller, Schlingemann and Stulz, 2005; Sudarsanam and Huang; 2007 and Bouwman, Fuller and Nain, 2009 shows a negative gain to the bidder abnormal return. These findings can be found in appendix 10.1. The majority of the above-mentioned long-term studies find that the companies on average are value-destructive (negative gain) when a long horizon is implemented.

The patterns of shareholder wealth gains for Europe studies are similar to the findings from the US and the UK (Sudarsanam, 2010). The target shareholders gain substantially, whereas acquirer shareholders just about break-even (Note: The specific findings for Europe studies are presented later in the paper).

The main purpose of the paper will be to examine whether or not it is possible to identify any abnormal returns for the bidder shareholders around the announcement period of acquisition (short horizon) and post-acquisition period the following years after (long horizon). The paper conduct an analysis with inclusion of several relevant cross-sectional variables and proxies in the later data analysis. It is in our knowledge paying, with shares signals, that the stock is overvalued (Renneboog, 2006; Martynova, 2009), which lead to a negative reaction in the market to all-equity payments. On the other hand all-cash payments signals that the stock is undervalued, which would lead to a positive reaction in the market. Other payment methods would lay in between, but certainly, all-cash should be superior. These and many other unique properties of the variables is covered throughout the paper.

Through quantitative methods on 18 years stock data (1996-2014), we test the connections in the event period (1997-2011) with bidders from the European Union benchmarked up against a relevant market index.

In the cross-sectional study (where we implement a multiple linear regression), we look at how relevant variables affects the abnormal returns in the event window for acquiring firms. This regression provides a support to the performed parametric and non-parametric tests.

Finally, the evidence on the European Union is strictly limited and not up to date, and it is our sincere hope, that this paper will shed light on the above unraveling investigation in the recent development of M&A transactions from the European Union.

### 1.1 Problem statement

In order to gain meaningful insights for the development in the European Union the following research question (RQ) will be stated:

**RQ:** What is the financial impact on bidders in the European Union and how is it moderated in respect to underlying motives?
Following sub-research questions (SRQ) would additionally contribute to a solid answer related to the study:

**SRQ 1:** What is the overall impact on bidders in the short and long term?

**SRQ 2:** In respect to the type of merger how is the impact given the following cross-sectional variables:

1) Payment type
2) Cross-border vs. domestic targets
3) Relative size of the target
4) Quoted vs. unquoted targets
5) Related vs. unrelated mergers

### 1.2 Delimitation

The various perspectives related to mergers and acquisitions are indeed very interesting in nature and have its territory within some of the most essential parts in the financial literature. Though it is exiting to work within all areas, it is not possible to cover every field of interest in the paper. There exist dozens of perspectives and methodologies within the field and therefore the paper need to focus on elements that adds the utmost value to the analysis and several delimitations have to be made.

First, it must be emphasized, that the paper intends to analyze acquisitions from a purely financial perspective. This is apprehended by taking a closer look on the value creation of the acquiring company (bidder company). The starting point of the time period chosen are highly influenced by data availability from the databases. In addition, it must be in mind, that the analysis require three years of available data to perform the long-run performance study, which put restrictions to the upper bound – or the last acquisition of interest. A post-merger horizon of three-years is needed for each company. The time period chosen covers only deals made in the years from 1997 to 2011. Acquisitions outside the time period will not be investigated. Furthermore, the analysis will include only EU bidders. It is believed, that this group ensure some sort of homogeneity within the sample, since identical laws and practices are implemented among the EU member countries. The focus on strictly EU member countries could provide valuable information for various EU institutions and provide new insights. There is no restrictions to the location of the target countries.

Second, the paper would not have focus on the post-acquisition operating performance. Some part due to the problems evoked by this perspective and another reason that it is beyond the scope of the paper. Nevertheless, it will, in the later performed cross-sectional analysis include specific accounting-based variables.

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2 EU member countries are defined as all the current (28) European member countries including Norway and Switzerland as EFTA members which in total gives 30 European countries. If the deals were scaled after the expansion of the Union (inclusion of members throughout the time period) the proposed models in the study could suffer from severe biases. These biases are mentioned briefly in chapter three and is relevant for the study as the EU member countries grew from 15 members to 28 members during the investigated period.
Lastly, the paper would not have its primarily focus on the statistical and mathematical aspects of the various models used. They are seen as tools in a larger process to answer the research questions stated and most have found its way into the appendices. The most essential formulas used are tried to be placed wherever it makes sense in the paper, thus with some limited description. Finally, the paper further delimits itself to give insights about the different tests strengths, power and efficiency. Additionally, further delimitations than those mentioned above, are mentioned throughout the text.

1.3 Literature and data

1.3.1 Literature review
A vast literature analysis the short- and long- term wealth effects that acquiring (bidder) shareholders incur from M&A transactions. Some of the literature can be found throughout the reference sections in chapter 10. Despite the quantity of literature on the wealth effects accruing to the acquiring shareholders, less studies focus on the different types of consideration offered to acquiring shareholders especially in the European studies. Thereby, the primary literature used in the paper include respected articles and journals and the aim is to align the study with suggested methodological approaches. Furthermore, it would be easier to compare the findings to the empirical evidence, by following the recommended procedures and in effect, increase the overall reliability of the performed analysis.

1.3.2 Data review
The paper rely very much on the used databases and their data validity. Mainly Zephyr, Orbs, Amadeus and Datastream have been main contributors of data in the study. Generally, these database are expected to be reliable. However, it should be noted, that they are not perfect. Just to take Orbs as an example, this database yields information from more than 140 mill. companies would and contains various numbers of M&A deals and rumors, and all deals and rumors have been collected by more than 100 external data providers. That there may not one- hundred percent consistency throughout the data can be problematic, and awareness should be put on the reliability of the data. It is impossible to reject that some of the data is inaccurate, but with all measures given to correct, comment or eliminate incorrect values, the validity of data is expected to be of high standards in the analysis. It has furthermore be found, that some of the databases yields different values for the same variable of interest and here bias must be expected in relation to this problem when encountered in the databases as their results differ. Explanations can be that wrong values have been updated in newer versions or accounting principles have been changed during the years and only some databases backward adjusts, which leads to inconsistency even among the same data provider. This issue has been observed in the various Orbis
versions where the overlapping results for the same year differs from the obtained data, unfortunately.

Additionally, there is a risk that companies from certain member countries might underrepresented in the study, according to their general data availability, laws, requirements and practices in relation to disclose all facts about the acquisitions in specific countries. It cannot be neglected, that there may exist some sort of various information levels, informal procedures and standards among the different member countries captured by the databases. A simple test of representation will shed light on that issue in the paper thus.
2. Empirical Evidence

Numerous studies have been examining the abnormal return around the announcement day (short-term) and in the post-announcement period (long-term) from acquisitions, but what only few papers have done, is to link these empirical findings to Europe and more specific into the perspective from the European Union (EU).

The following subsections in the chapter will present: An introduction to the concept mergers and acquisitions (M&A), a look at the takeover activity and merger waves developments in EU, cover several motives for mergers, motives e.g. synergies, introduce the terms hubris, herding and market timing. Next the chapter will cover more study-related literature such as method of payment (shares vs. other payment types), cross-border vs. domestic, size effects (to determine if the relative size between the companies matters), quoted vs. unquoted, relatedness in industries (related vs. unrelated acquisitions) and other variables respectively, to capture all the influencing factors before conducting the event study. Please note the theory from the two sections relating method of payment and cross-border vs. domestic are more or less similar to a former submitted paper from the author.

2.1 Introduction to mergers and acquisitions (M&A)

Phrases such as ‘merger’, ‘acquisitions’, ‘buyout’ and ‘takeover’ are all terms frequently used in the mergers and acquisitions (M&A) literature. M&A is a widely used term to refer to the consolidation of companies. The way of consolidation within the term can be quite different, why it is essential to understand, the simple forms of consolidation within M&A.

In a merger merging firms gets together to combine and share their resources to achieve a common goal, typically through the forming of a new entity. Acquisitions is an action which an acquiring company buys most, if not all, of the target company’s ownership stakes, in order to control the target company. The considerations of an acquisition are often, that it might be more beneficial to take over an existing company’s operations and unique resources and capabilities, and is often a part of the acquiring company’s growth strategy. If not beneficial, the given company could expand through other strategies, or expanding on its own. Furthermore, some firms acquire resources and capabilities through mergers that enable them to escape the current industry structure and enter or create new industries. In an acquisition, the acquired company becomes the subsidiary of the acquirer, whereas a merger is characterized by a new entity that is formed by the merging companies. A buyout is an acquisition of a company or its underlying businesses, where the acquirers represents a group of investors, including specialist private equity (PE) firms and skilled managers, instead of a traditional acquiring company.

A takeover is similar to an acquisition where the term ‘takeover’ implies that the acquirer is much larger than the target. In situations where the target company is larger than the acquirer, it is entitled a ‘reverse takeover’. As seen
above ‘mergers and acquisitions’ covers a bulk of various definitions and activities. These terms will be used interchangeably throughout the paper.

2.1.1 Takeover activity and merger waves in EU

Several countries have experienced high levels of takeover activity followed by a slump in the past decades. That the takeover activity seems not to be persistent and the volume of transactions differ across time with relative quiet periods of inactivity, leads to the phenomenon of merger waves.

EU member countries have experienced increasing levels of takeover activity since 1984 and three waves can be identified during the period, a minor one during 1984-1992 and two large ones 1996-2002 and 2004-2008, where the two latest waves (fifth- and sixth merger wave) have been significant bigger than the one observed in 1984 (Sudarsanam, 2010). Throughout this period, EU had been developing its institutions in the area of politics, economics and social welfare towards a more integrated, today- shaped, union. The Cold War ended, the Berlin Wall collapsed, state control and Soviet-controlled institutions in Central Eastern Europe (CEE) were dismantled which introduced the CEE countries to free markets, which led to optimism and enthusiasm in private enterprises, and together with the Baltic countries, became closer and initially integrated into the EU. The Single Market initiative (1992) reduced trade barriers within the Union and together with the introduction of the single European currency, the Euro, currency risks inside the Eurozone disappeared, one day to another. A reduction in home bias from investors became truly affective during the 1990’s. In the new Millennium, the number of member states flourished, from 15 EU member states to now 28 in total, latest with the inclusion of Hungary. During this period, changes in information technology, telecommunications – alongside the development of the internet – and biotechnology, led to incremental exploitation for EU firms especially through mergers and acquisitions, since new growth opportunities were born. Figure 2.1.1.1 show the number of completed EU acquisitions 1997 – 2014 as reported by Zephyr:

Figure 2.1.1.1, Acquisition activity in EU from 1997 to 2014

Source: Own contribution. Acquisitions reported from Zephyr
As seen from the figure there have been reported a significant amount of EU acquisitions each year. The grey pillars in the diagramme indicate the period that the paper will not include deals from as the long-run study need three additional years of information after the announcements.

The wave pattern has been observed in the US for more than a century, starting in 1890 with the longest history of mergers followed up by UK since the early 1960s. The financial downturn in 2007 and the sudden tightening of conditions required to obtain loans from lenders, did not bring any pleasant conditions for the recent takeovers. Investment capital were almost impossible to obtain and lenders became extremely scared of bankruptcies and defaults during the credit crunch. The period were hit by depression-like symptoms which lead to low optimism in the market, and the takeover activity slowed down in pace and laid off from its (then) high levels. From the experience from the latest and earlier downturn(s), the takeover activity tends to follow the periods of general economic expansion, which may not be chocking evidence, since external expansion through takeovers is just one of the available corporate growth strategies – or refocusing strategies companies can use.

### 2.1.2 Merger waves characteristics

Coming from history and moving over to the characteristics, merger waves have found to acquire unique sets of characteristics and settings across countries, regions and time. In a breakdown of industries, differences are found across sectors, and research highlighting the fact, that these different industries undergo an abnormally intense merger activity at different times. Mergers seem not only to occur in waves and within a wave, but seem to cluster by industry and the activity of industries varies between different waves (Andrade et. al p. 104, 2001; Mitchell and Mulherein, 1996; Mulherin and Boone, 2000; Maksimovic and Phillips, 2001, Andrade and Stafford, 2004, Harford, 2005).

Industries in Europe have in the latest decades been triggered by industry shocks, such as privatization, deregulation or the convergence of technologies. Deregulation has affected industries in several branches; telecommunication, water, power and airports and new technologies led to new business models within the finance and banking-, insurance-, media- and entertainment-industries (Sudarsanam, 2010). Deregulation became a dominant factor after the late 1980s, where the 1990s became the “decade of deregulation” in Europe. Exposure to deregulation has, in a study, been found to be the most significant driver of high merger activity in United Kingdom (Shoenberg and Reeves, 1999).

Through the European Monetary Union project, which introduced the new single currency – the Euro – in 1999, a new phenomenon could be observed. The introduction was found to have strong impacts on the financial service sector and on the macro level within (and “out”) of the European Union, and by a later study, it was found that the European Single Market had an enormous influence on manufacturing industries (Director General for Economic and Financial Affairs, 2000). The fifth wave was particularly remarkable compared to its predecessors, since European firms were as eager to participate in takeovers as the UK and US counterparts (Martynova and Renneboog, 2006). Interestingly,
hostile takeover activity began its uprising within the European Union during the
1990s, and even countries with no history of hostile takeovers, were observed
(Renneboog, 2007), and some of them sparked high publicity debate back in their
respective home countries. The sequence of strategic moves and countermoves
that any given company can make, will be as first mover or a “me-too” follower,
where a “me-too” follower more or less try to copy the path of the first mover.
This is simple game theory.

It is thus essential to reflect on the takeover activities in their current state of
cycle in merger waves. To understand the drivers of M&A means understanding
their cyclical nature (Golbe and White, 1993). Renneboog (2007) argues, that the theoretical models behind the motives can be separated into three
main group. First, the neoclassical models that suggest takeover waves occurs and
has its roots from industrial, economical, policial or regulatory shocks. Secondly,
the more behavioural models, that propose that takeover clustering is driven by
self-interest of managers relating to agency problems, managerial hubris and
herding (these terms are covered in section 2.3). Thirdly, capital market
development models suggest that waves occur as a result of managerial timing
(market timing). From the above-mentioned models various factors can be
explained; when stock prices are high, managers becomes optimistic, which leads
to more acquisitions, low interest rates stimulates further activity etc. (Koller,
2010). Thus with the limitations of the paper, one of the most interesting evidence
to point out as an endnote is that Europe in the last decades have been dominated
by two merger. Harford (2005) explains, that economic, regulatory and
technological shocks are the main drivers of merger waves, and his neo-classical
point of view is strictly in line with the findings from the study by Mitchel (1996).

The following section will cover the empirical evidence found on value creation
from mergers and acquisitions.

2.2 Empirical evidence on value creation

Numerous studies have tried to explain the value creation from mergers and
acquisitions (Ruback, 1983; Netter, 1988; Renneboog, 2005) and there exist
several methods to measure the impact from an acquisition. The shareholder
wealth effects can be assessed from various perspectives such as the acquirer’s,
target’s or a combined perspective. The introduction already provided
information about some of the US findings for value creation, why next section,
predominantly will cover the findings from Europe, even though the European
evidence on value creation seems sparse compared to their US counterpart.
Extensive work have been put in the US studies by researchers.

2.2.1 Empirical evidence on European value creation

By inspiration from Sudarsanam (2010), results from short-run studies will cover
Europe, EU and specific member countries. For the long-run studies, only
evidence from UK will be presented due to lack of strong empirical findings from
Europe. The paper will shed light on the short-term findings first, which is covered in Table 2.2.1 below:

**Table 2.2.1.1, Announcement period abnormal return to shareholders in European Acquisitions**

<table>
<thead>
<tr>
<th>Study sample; sample size*</th>
<th>Country</th>
<th>Event window (around announcement)</th>
<th>Benchmark model</th>
<th>Target abnormal return (%)</th>
<th>Bidder abnormal return (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bergström, Högfeldt and Högholm (1993); 1980-92; 54 targets, 149 bidders (tender offers)</td>
<td>Sweden</td>
<td>11 days</td>
<td>Market</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>Doukas and Holmen (2000); 1980-95/93 tender offers</td>
<td>Sweden</td>
<td>11 days</td>
<td>Market</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Van Hulle, Vermaelen and de Wouters (1991); 63 tender offers</td>
<td>Belgium</td>
<td>6 weeks</td>
<td>Market</td>
<td>38</td>
<td>-1</td>
</tr>
<tr>
<td>Van Hulle, Vermaelen and de Wouters (1991); 76 acquirers and 48 acquired tender offers</td>
<td>Belgium</td>
<td>3 months</td>
<td>Market</td>
<td>6</td>
<td>-1</td>
</tr>
<tr>
<td>Eckbo and Langohr (1989), 1966-82; 90 targets and 52 acquirers in public tender offers</td>
<td>France</td>
<td>16 weeks</td>
<td>Market</td>
<td>14</td>
<td>-3</td>
</tr>
<tr>
<td>Georgen and Renneboog (2004); 1993-2000; 66 targets and 76 bidders</td>
<td>Several countries</td>
<td>6 months</td>
<td>CAPM</td>
<td>15*</td>
<td>1</td>
</tr>
<tr>
<td>Faccio, McConnell and Stolin (2006); 1996-2001; 735 acquirers of listed and 3694 acquirers of unlisted targets</td>
<td>Europe</td>
<td>5 days</td>
<td>Market-adjusted</td>
<td>1*</td>
<td></td>
</tr>
</tbody>
</table>

*Publication details of the cited studies are given in the references-section. Georgen and Renneboog sample also includes some failed bids. CARs can be calculated only for listed targets and bidders.

*Calculated from the separate subsample returns in their Table 3.

*Significant at 10 % or lower level. Other returns either insignificant or significance level not reported.

Source: After inspiration from Table 4.6 in Sudarsanam, S., 2010. Own contribution.

As seen in the table above, the European bidders’ abnormal return (%) is in the short-term found to be around zero, similar to the findings from the US studies. Doukas and Holmen, 2000; Georgen and Renneboog, 2004; Campa and Hernando, 2004; Martynova and Renneboog, 2006; Faccio, McConnell and Stolin, 2006; Kräussal and Topper, 2007 shows a positive gain whereas Bergström, Högfeldt and Högholm, 1993; Holmen and Knopf, 2004 shows zero gain and Van Hulle, Vermaelen and de Wouters, 1991 (note: same conclusion in
both of their studies) and Eckbo and Langohr, 1989 shows a negative gain to the bidders abnormal return.

The studies presented in the table investigate only four specific member countries – Sweden, Belgium, France and the Netherlands – besides two Europe and one EU studies. The shareholder wealth distribution seems to be similar to the US findings. The target shareholders seems to gain significantly, while the acquiring shareholders seems to just break-even.

Two interesting studies to point out, is the study by Goergen and Renneboog (2004) and the study by Campa and Hernando (2004).

In the first study, the authors adapt a longer event window on six month, besides their five-day event window. In the longer event window, the target seems to gain a positive abnormal return on 15% whereas the acquirer seems to gain only 1%. Sadly, only the result for the target is significant, leaving not much evidence on the acquirer to be trusted.

In the second study, the authors have focused strictly on EU and not Europe, which is highly relevant to this paper. Their findings are, like the first study, only significant for the target shareholders. They implement a three-day event window and a two-month event window, and in the three-day event window, the target earns 4% and the acquirer 0% and in the two-month event window, the target earns 9% and the acquirer 1% respectively. Again, in this study, only the findings is significant for the target. These two studies are the only two short-term studies from the table, which correspondingly provides information about the shareholder wealth effects on a long-horizon (even though only 2- and 6 months). They are still highly relevant for the paper while they cover EU and Europe.

In the study by Georgen and Renneboog (2004) the author finds, that the offer mode, does not have a big influence on the acquirers. This is one of the reasons why studies with tender offers are kept in the table. An additional finding also finds that target shareholders earn significantly higher returns in the UK (29%) than in continental Europe (15%).

Based from the above evidence following hypothesis should be tested:

\[ H_1: \text{Acquisitions generate positive abnormal return (AR) to bidders in the short-term} \]

For the long-term findings from Europe only studies from UK are displayed. Due to the limited literature from Europe, and those studies between US, Europe (and UK) yields similar findings, the extensive literature on long-term findings from UK might be the best guess to predict and explain the long-term findings in Europe. The findings are covered in Table 2.2.1.2 below:

\textit{Table 2.2.1.2, Post-acquisition abnormal returns to shareholders in European Acquisitions}
EMPIRICAL EVIDENCE: LONG TERM (LONG HORIZON)

<table>
<thead>
<tr>
<th>Study sample; sample size</th>
<th>Country</th>
<th>Event window (months)</th>
<th>Benchmark return model</th>
<th>Bidder abnormal return (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firth (1980); 1969-75; 434</td>
<td>UK</td>
<td>36</td>
<td>Market</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>UK</td>
<td>24</td>
<td>Market, market adjusted and size CAPM</td>
<td>-13 to 15</td>
</tr>
<tr>
<td>Franks and Harris (1989); 1955-85; 1948</td>
<td>UK</td>
<td>24</td>
<td>Market, three methods</td>
<td>-5 to -15</td>
</tr>
<tr>
<td>Kennedy and Limmack (1996); 1980-89; 247</td>
<td>UK</td>
<td>23</td>
<td>Size</td>
<td>-5</td>
</tr>
<tr>
<td>Gregory (1997); 1984-92; 452</td>
<td>UK</td>
<td>24</td>
<td>Market, size, CAPM, three factor</td>
<td>-12 to -18</td>
</tr>
<tr>
<td>Higson and Elliot (1998); 1975-90; 722</td>
<td>UK</td>
<td>36</td>
<td>Size</td>
<td>1</td>
</tr>
<tr>
<td>Baker and Limmack (2002); 1977-90; 595</td>
<td>UK</td>
<td>60</td>
<td>Eight models including three factor, size, book to market</td>
<td>-26 to -31</td>
</tr>
<tr>
<td>Sudarsanam and Mahate (2003); 1983-95; 760 days</td>
<td>UK</td>
<td>700 days (about 34 months)</td>
<td>Size, market adjusted, book to market, means adjusted</td>
<td>-9 to -22</td>
</tr>
<tr>
<td>Cosh, Guest and Hughes (2006); 1985-96; 363 months</td>
<td>UK</td>
<td>36 months</td>
<td>Industry and profit matched control firms</td>
<td>-16</td>
</tr>
<tr>
<td>Antoniou, Petmezas and Zhao (2007); 1987-2004; 1061</td>
<td>UK</td>
<td>36 months</td>
<td>Size and book to market portfolios (calendar time abnormal returns)</td>
<td>-0.43 (per month)</td>
</tr>
</tbody>
</table>

*Publication details of the cited studies are given in the references-section. Georgen and Renneboog sample also includes some failed bids. CARs can be calculated only for listed targets and bidders.

Except for Firth and Higson and Elliot, the studies report abnormal returns from several models of their models as significant. Kennedy and Limmack do not report level of significance. Returns rounded to the nearest integer.

A rough estimate (ignoring compounding) of the 3-year return is \(-0.43 \cdot 36 = -15.5\%\), comparable to the estimates from the other listed studies.

**Source:** After inspiration from Table 4.4 in Sudarsanam, S., 2010. Own contribution.

Most of the European bidders’ abnormal return (%) are in the long-terms studies from Europe found to be negative – again – similar to the US studies. Higson and Elliot, 1998 shows a positive gain whereas Firth, 1980 shows a zero gain and Limmack, 1991; Kennedy and Limmack, 1996; Gregory, 1997; Baker and Limmack, 2002; Sudarsanam and Mahate, 2003; Cosh, Guest and Hughes, 2006; Antoniou, Petmezas and Zhao, 2007 shows a negative gain to the bidders abnormal return.

Overall, it seems like acquirers achieve value losses rather than value gains from their acquisition strategies in the long horizon studies. Only the study performed by Higson and Elliot (1998) shows positive findings with size as benchmark return model. Scanning for studies with the market model, as single model, only Firth’s (1980) study finds a break-even, concluding, that acquirers’ shareholders wealth distribution may be untouched due to an acquisition, leaving no clear recommendation why to enter an acquisition, other than that the shareholders might not lose any money from the transaction, which might be seen as positive news as well.

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To provide additional insight on the impact of acquisitions, researchers may be tempted to look toward the post-acquisition operating performance. Since this perspective do not focus the stock market return-based performance, it is possible to examine private and unlisted companies for which stock prices data are inaccessible. There exist several severe limitations in this perspective, and to mention some of the most crucial, only a weak relation between operating performance improvement and shareholder returns have been found (Ruback, 1992), and more related to EU, the use of different accounting rules to account for acquisitions implies many measurement problems. Only in recent years, there seem to be consistence in the accounting standards – including the treatment of goodwill – but before 2005, publicly listed EU member countries companies were not entitled (and required) by EU-law to prepare their financial statements in accordance with International Financial Reporting Standards (IFRS) as promulgated by IASB (Sudarsanam, 2010).

Based from above section, following hypothesis need to be tested:

$$H_2: \text{Acquisitions generate negative abnormal return (AR) to bidders in the long-term}$$

### 2.3 Motives for mergers

Some explanation of the different motives for engagement in mergers can be found in the paper by Mukherjee et. al (2004) where synergy accounts for 37.4% of all motives in the reported study. Diversification is in same paper reported to be the second most common motive. However, as the theory explains, diversification should not be value creating at all for the shareholders, since they can diversify their portfolio much cheaper elsewhere. Instead, the rationale behind may be of a more managerial matter; managers might want to secure their job by lowering the overall risk exposed to the company, which could explain the engagement in such strategies. Other explanations could be that the CEO’s has a desire for empire building and seems to overestimate own abilities and potential synergies from an acquisition. The various motives can be both a value creating and value destructive affair for the shareholders, why these motives are considered of great importance within the M&A literature.

To determine the characteristics of profitable acquirers a necessity is to understand the underlying reasons for acquisitions. The motives seems to have been victimized by a transformation process during the last decades (Sorensen, 2000) where the 1960s and the 1970s were characterized by conglomerate acquisitions motivated by financial synergies, taxes, and various incentives. In the 1980s tax and incentive, improvements began its uprising and lastly, the 1990s; the era of strategic acquisitions began initiated by motives related to operating synergies (Grinblatt and Titman, 2002). In the Millennium, a new survey (Mukherjee et. al, 2004) investigated the importance of the strategic
acquisitions in the early 2000s. Their findings concluded that the highest motive was synergy and the second highest motive was diversification hence it must be known, that motives for mergers can be many and are widespread.

Synergies, and more specific financial synergies, can be achieved by diversifying activities outside a company’s related industries or by lowering cost of capital. Acquisitions made by a large amount of cash can reduce internal financing costs, and if the target company has lower financial leverage or an unused debt capacity, a reduction in the external financing costs, can be realized (Ghosh and Jain, 2000).

Tax benefits can be another way to achieve financial synergy. The consolidated statements of the acquirer and target (combined firms) may result in tax benefits, when the acquiring company reports a net operating loss (NOL) while the target is profitable. The acquiring company then able to use its NOL to direct lowering the amount of taxable income. Copeland, Weston and Shastri (2003) report that this may be the major hidden driver behind successful mergers, while company CEOs report other motives.

Mergers can also create value by economies of scale and scope (operational improvement) and by reducing agency costs. The acquiring company might try to solve the agency problem by replacing an incumbent target management, and in this kind of hostile takeover situation (typically), remove a less effective target management and replace it. The stock market would appreciate such an act, if the target management fails to satisfy their shareholders (Fama, 1983) which then could lead to an added-value, a value creation, for the acquiring company.

The behavioral finance theories has gained increasing interest by researchers in the last decades and they try to explain some of the anomalies observed in the market. The behavioral driven mergers are strongly connected to the agency cost theory. In the next sections, hubris, herding and market timing will be covered.

2.3.1 Hubris

Besides, from the various motives, the literature also points out, that there is a risk of buying a target company at too high of price. The overconfident managers typically try to outbid the target in a bidding situation where competition arises in a high-level from multiple bidders. Admitted, bidders do not know the true value of the company they wish to acquire, and are therefore likely to overpay for the target (winner’s course). This happens while the manager tends to overestimate the creation of the synergistic value. A study finds that the company that win a bidding contest, typically perform worse in the short term (-0.44 %) than the rest of the acquirers (+ 0.60 %), but in the long- term, almost get same level (recovered) compared to the peers (Renneboog, 2010).

Hubris strive managers to make decisions in their own personal interest and tends to overestimate the importance and synergies from the transaction. This also drive them to undertake high-risk acquisitions, and these psychological biases, increases the risk of value destruction.
2.3.2 Herding

Herding – is another risk – and occur when companies try to imitate the actions of a first-mover (or a leader company). The idea behind losing terrain in a competitive market can be hurtful; not only to managers but also to shareholders, and in this game-theory behavioral driven merger game, companies observe successful acquisitions in the market, stressing them to initiate their own acquisitions. Herding is suspected to be one of the biggest drivers behind the behavioral explanation of takeover- and merger waves and their cyclical nature (Auster and Sirower, 2002). Merger waves are covered later in this chapter.

Hubris in combination with herding, can lead to very ineffective takeovers in the market. Acquisitions like these should therefore be avoided, but when the acquiring shareholders fails to monitor or take action, overconfident managers might engage in ineffective and doubtful value destructive takeovers.

2.3.3 Market timing

In the economic theories, overvaluation is a common occurrence. Financial bull markets do not only strive managers to act overconfident, they also tends to endeavor and over-valuate stocks in the short run (Shleifer, 2003). As consequence, overvalued companies tends to buy less- overvalued target companies, and therefore, buy cheap (or cheaper) in a highly priced market. Acquiring companies will use their own equity and add value with market timing due to this mispricing premium. The assumption behind this perspective is that target managers would accept the bid as it will maximize their own short-term benefits. The losers will be the target company’s shareholders that eventually could have sold the company for more, if the financial bull markets favors their company, in the market. The target company, the financial bull markets’ darling, would then be on same high level – or higher – than the acquiring company, which would be of great interest to the target shareholders. The mispricing premium means that companies can take advantage of temporary market inefficiencies, and where the target shareholders fails to realize this, the use of market timing could transfer value to the acquiring company. Even if the target shareholders realize that they are undervalued compared to the acquirer in a bidding situation, they might accept the bid, if they are overvalued by the stock market in general. However, these all-equity bids are not well appreciated by the market, since it signals that there might be problems with the valuation of the acquirer, and if true, the market tries to correct the price. The empirical evidence behind the payment method is discussed further in the next section.

2.4 Deal and company specific characteristics

The sub- sections cover the deal and company specific characteristics. This relate to both the target and acquiring companies and these characteristics have been highlighted in the literature to have great influence in a deal situation, why the
paper, thoughtfully, cover these evidences. All the below characteristics will be investigated in the later event study.

2.4.1 Method of payment

The method of payment is one of the more discussed areas when conducting event studies. The method of payment in the US during the 1995-2000, shares and mixed offerings was dominating cash offers before the crash in 2000. A changing tendency was observed in the millennial wave, where cash slightly began to dominate the shares (pure equity) and mixed offers. During the 2004-2007 cash become more dominant, even though the stock market overall is rising. All methods seems to increase where dominating factors such as rising stock markets, highly-liquid credit markets and an increasing role of private equity was reflected in the market (Sudarsanam, 2010).

There could be many incentives for the bidder firm (the acquirer) to choose a specific combination of payment method, and the factors influencing the choice among acquisition of financing methods are many, such as risk and valuation considerations, maximizing tax benefits, corporate control considerations, deal execution considerations and capital market conditions. Of course, there could also be incentives for the target firm to request the best fitting payment type such as, cash or shares or a combination. Emery (1999) has in a study estimated the returns to the optimal payment method predicted from a conducted expectations model comprising these various factors.

Some studies have reported significant influence from the method of payment on the abnormal return. Davidson (1997) shows that shareholders in target firms earn a higher abnormal return when receiving cash, instead of shares as payment, and is supported by Huang (1997). Cash seems to generate the highest wealth of the target shareholders in the studies.

Considering acquiring companies, the findings might be at more interest. The empirical findings are shown in the next table, more specific table 2.4.1.1, that elaborates on the abnormal returns to acquirers by payment method. One interesting finding in these studies are, that private targets, in contrast to public targets, stock acquisitions outperform cash acquisitions, in both US and Europe (Bradley, 2004).

*Table 2.4.1.1, Abnormal returns(%) to acquirers by payment method*

<table>
<thead>
<tr>
<th>Study and sample period</th>
<th>Country</th>
<th>All Cash</th>
<th>Mixed</th>
<th>All stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moeller et al. 1980-01</td>
<td>US</td>
<td>1.38</td>
<td>1.48</td>
<td>0.15</td>
</tr>
<tr>
<td>Bouwman et al. (2003), 1979-98</td>
<td>US</td>
<td>0.88</td>
<td>2.33</td>
<td>-0.79</td>
</tr>
<tr>
<td>Bradley and Sundaram (2004)</td>
<td>US</td>
<td>0.83</td>
<td></td>
<td>-1.29</td>
</tr>
<tr>
<td>Faccio et al. (2006), 1996-01</td>
<td>Europe</td>
<td>0.71</td>
<td></td>
<td>1.39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.30</td>
<td>-0.66</td>
<td>-1.81</td>
</tr>
</tbody>
</table>
The table speaks a clear language regarding the EU market and the payment method; the shareholders seem to prefer and appreciate all-cash payments with positive abnormal returns and paying with all-stock seems to lead to negative abnormal returns.

Figure 2.4.1.1, Abnormal returns on targets and bidders in EU deals

EMPIRICAL EVIDENCE: PAYMENT METHOD (2)

Source: Figure 8 from Martynova (2009).

Figure 2.4.1.1 above presents the abnormal returns to targets and acquirers with different payment methods in the European market. Similar results for cash and equity offers have been found in UK and US studies (Huang, 1987; Travlos, 1987; Draper, 1999; Peterson, 1991).

It is seen that targets receive much higher returns in cash and mixed methods than in shares over the deal announcement days on -60 to +60 days. However, bidder shareholders also do better in cash offers than in stocks- and mixed offers. One of the more interesting findings is that both stock and mixed bidders enjoy significant run-ups, relative to cash bidders in the pre-bid, but that change in the post-announcement where these gains are wiped out, and end up with an underperformance compared to the cash bidders.
The several studies cited above confirms that cash offers generates significantly more value than shares. Cash offers seems to be superior to all the other payment methods, why it is reasonable to expect, that acquisitions paid in cash will perform better than acquisitions acquired with other payment types. Sudarsanam (2010) reports that cash payments was the most popular consideration throughout the last decades, followed by stocks (equity), then debt, or an combination between the different payment types and it has been found that cash as payment type decreases during times of bullish stock markets to the benefit of equity. Nevertheless, different incentives can influence on the choice of method of payment and it is indeed an important subject of consideration in acquisitions.

$H_1$: Cash acquisitions are superior to other payment types in the short- and long-term.

### 2.4.2 Cross-border vs domestic targets

Overseas (cross-border) acquisitions are often seen as a way to reach a broader geographic scope, provide access to a lower cost production platform and local technological expertise (Liodakis, 2007).

Some of the empirical findings related to cross-border – domestic deals are summarized in table 2.1.4 below.

**Table 2.4.2.1, Abnormal returns to acquirer shareholders in cross-border acquisitions**

<table>
<thead>
<tr>
<th>Study sample; period; sample size</th>
<th>Acquirer country (target country)</th>
<th>Abnormal return (%) (days) (benchmark)</th>
<th>Significant factors (effect on returns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cakici, Hessel and Tandon (1996); 1983-92; 105</td>
<td>Several (US)</td>
<td>2 (21 days) (market model)</td>
<td>Only AUS, JP, NL and UK acquirers (+); no tax effect</td>
</tr>
<tr>
<td>Eun, Kolody and Scheraga (1996); 1979-90; 103</td>
<td>Several (US)</td>
<td>-1.2 (14 days) (mean adjusted)</td>
<td>JP &amp; CND (+), UK (-); target's R&amp;D (+)</td>
</tr>
<tr>
<td>Kang (1993); 1975-88; 119</td>
<td>JP (US)</td>
<td>0.59 (2 days) (sig. At 5 %) (market model)</td>
<td>Bank debt (+); strong yen (+); No tax effect</td>
</tr>
<tr>
<td>Markides and Ittner (1994) 1975-88; 279</td>
<td>US (several)</td>
<td>0.54 (5 days) (market model)</td>
<td>Strong $ (+); advertising (+); oligopoly (+); no country effect</td>
</tr>
<tr>
<td>Cakici, Hessel and Tandon (1996); 1983-92; 105</td>
<td>US (several)</td>
<td>0 (21 days) (market model)</td>
<td></td>
</tr>
<tr>
<td>Danbolt (1995); 1986-91;71</td>
<td>Several (UK)</td>
<td>-10 (6 months post-acquisition) (market model)</td>
<td></td>
</tr>
<tr>
<td>Conn and Connell (1990); 1971-80;35</td>
<td>US (UK)</td>
<td>-2.5 (6 months post-acquisition)</td>
<td></td>
</tr>
</tbody>
</table>
Numerous papers have been published in the area. The table lists individual studies, which have tried to investigate the \textit{shareholder wealth effects} related to cross-border acquisitions, with a short-term focus and only Gregory and McCorriston includes a long term perspective, by extending their model to five years. Two of the UK-centered studies have extended their period to five months after the takeover, so there is range of empirical findings from Europe and the UK.

From the first three studies the US companies are targets of non-US acquirers, and Cakici et al. (1996) only finds positive returns to limited acquirers from Australia, Japan, The Netherlands and the UK, respectively. In the study by Eun et al. (1996), they find out that UK acquirers experience wealth losses. However, the study by Kand (1993) shows a clear picture from the Japanese acquirers perspective, which finds clear and more consistently positive wealth gains (abnormal returns) than the other two earlier studies.

In study 4-7 the US acquirers of European targets earn only marginally positive return, where Markides and Ittner (1994) only are significant at 10 \% and Caciki et al. (1996) reports insignificant returns and the two last studies negative returns (Danbolt; Conn and Connell).

In study 8 within-Europe cross-border acquisitions generate significant returns over a short window, but not in a longer one (Georgen and L., Renneboog, 2003). Overall, cross-border acquisitions according to the empirical evidence seems not to generate wealth gains for the bidder firms in most cases.

The last column in the table highlight some factors that can improve the cross-border acquisition performance, and it seems there could be a gain by obtaining the targets R&D capabilities, advertising or brand resources, which leave the acquirer’s performance in a superior position. In an internalization perspective, this makes very good sense that the acquirers seek to internalize intangible assets from the best companies around the world are and not limited to the domestic market. General one could argue, that the more open the economy
market is where the target company are located, the more it benefits the acquiring company’s shareholders for reduction in costs to some country-specific legal issues, shareholder rights protection etc.

What is more important to extract from the studies in the table is, that returns to foreign (acquisitions) targets are significantly higher, when the bidder is from a relatively high tax country, and the target has lower growth opportunities and higher advertising intensity (Sudarsanam, 2010). The studies supports that the sources of gains in foreign takeovers mainly come from synergy and realization of the synergy including tax benefits as the main motive for cross-border acquisitions (Danbolt, 2004).

However, in conclusion, most of the empirical studies find that the bidder shareholders actually suffer a little bit from cross-border acquisitions, and following hypothesis can be stated even though mixed findings are found:

\[ H_4: \text{Domestic acquisitions are superior to the cross-border counterpart in the short- and long-term} \]

2.4.3 Size effects (relative size to the target)

It is common that the acquired company (target) is smaller than the acquiring company (acquirer). If the acquirer were significantly bigger than the target, it raises doubt about, if the impact from the transaction would release any measurable efficiency increases or synergies. If the target is too small, the deal might not influence on the acquiring company’ stock that much. A handful studies have investigated size. A study from the US finds that small companies on average earn about 2 % higher returns than large companies (Moeller, Schlingemann and Stulz, 2004). The authors behind the study argues that the significant difference between the samples arises from a size effect. A Dutch study finds the effect to be 2.65 %, where the large companies in their samples seems to earn 0.20 % over the same period (Kräussl and Topper, 2007). This raises the question if size really does matter.

One of the interesting findings from the study by Faccio et al. (2006), is, that the smaller the target company seems to be relative to the acquirer company, the larger the short-term wealth effects seems to be to the acquiring shareholders. Thereby arguing, that there might exist a size effect, even though the Faccio’s finding is not uniform across studies (Masulis et al., 2007).

In acquisitions, it is observed that the target company is usually smaller than the acquiring company. A small target may enable the acquirer to be more generous towards the target company’s management, but it could also engender condescension and insensitivity, and put less attention on the value creation, because it can afford to (Sudarsanam, 2010). If the target is too small, the deal cannot influence the acquiring company’s stock that much, since it raises the question that the impact on the acquiring company will release any measurable efficiency increases and synergies.
$H_1$: Acquisitions where there exist a low relative size between the bidder and target are more value creating than a high relative size between the two in the short- and long-term.

### 2.4.4 Quoted vs unquoted

Several recent empirical studies have investigated the connection between buying public and private targets. The pioneering study performed by Chang (1998) was one of the first to find a private firm effect. Later studies supported this finding, and most studies seems to agree, that acquirers to private companies make significantly higher value gains in the announcement period, than acquirers to publicly listed companies (Fueller et al., 2002; Mantecon, 2008; Ang et al., 2001; Draper et al., 2006).

In the post-acquisition period, the superior performance seems to fade away, and after three years, most studies finds that the shareholders returns have experienced wealth losses down to zero or below (Sudarsanam, 2010). In a UK study, the respectively loss has been found to be -0.6 % and -0.4 % for the public and private targets (Antoniou et al., 2005). The value gains from private targets seems to not be sustainable in the long-run.

The information asymmetry model may try to explain why private targets seems to be more profitable around the announcement period, and the answer is basically, that investors who dare to engage in private targets are more exposed to valuation risks than in public targets and making them eligible for higher returns. This is comprehended since the target cannot take the same high premium as the public (listed) companies with full information. In cases in which the information asymmetry for the acquirer is very high, acquiring companies would prefer to buy public companies.

Many companies are found not to be listed at any stock exchange(s). Some companies might have difficulties to meet all the requirements for the listings (typically smaller firms), or perhaps, the companies prefer to run their business in a privately manner. It can be more difficult for a private company to raise money, have a high liquidity, access to financial markets and to share risk with public shareholders.

The empirical evidence on announcement period abnormal returns to acquiring shareholders for listed and unlisted acquisitions is shown in the following table:
As shown in the table, there is not much coverage from the European acquirer perspective. But a general tendency that can be observed is, that the stock price seems to increase around 1.5%, when an announcement of acquisition of unlisted companies is chosen, whereas acquisitions of listed (public) companies generally experience stock price drops down to 1% in the studies (Hansen and Lott, 1996; Chang, 1998; Fuller et al., 2002; Moeller et al., 2004; Draper and Paudyal, 2006; Faccio et al., 2006; Baik et al., 2007; Capron and Shen, 2007; Gupta et al., 2010).

A company’s stock can also be delisted from the stock exchanges (unquoted stocks can be both unlisted and delisted from stock exchanges), and these stocks can be traded on Over the Counter Bulletin Board (OTCBB) or through the pink sheet systems (most known as “penny-shares” in the UK and “penny-stocks” in the US).

However, it can also be, that the target voluntary has gone from public to delisted. It is an interesting opposite phenomenon going private than to go public. Many of these are realized through going private buyouts (also known as public to private, or PTP buyouts) and is a form of leveraged buyout (LBO). In the period of 2001-2007, Europe, Scandinavia and UK, experienced and increased their global market share from LBOs from 39% to 50% in terms number of deals (31% to 46% by value) and these have increasingly become a global phenomenon (Sudarsanam, 2010). Investors have taken many medium-sized companies into public to private, and Wright et al. (2006) explains, that the investors behind think, that the companies are undervalued by the stock market,
and the study suggest, that the undervaluation is the major source of shareholders wealth gain in Europe and therefore chooses to delist from the stock exchanges. In the past decade, delisting has become a common phenomenon to be found in both the US and Europe. From 1995 to 2005, more than 25 % of all European listed companies went private through LBOs and non-LBOs (Djama, 2012).

In conclusion, the literature argue, that the unquoted targets could be more profitable targets, due to the exposed valuation risks, which the acquirers put on themselves by engaging into these transactions. Companies can be listed (quoted) or unlisted/delisted (unquoted) from the stock exchange, and companies not listed on the stock exchange, seem to have difficulties to raise money (sometimes it is the first step towards bankruptcy). Nevertheless, the individual non-quoted companies have their own reasons not to be listed, and maybe, it is just because they are ‘too small’ to engage in public listings.

\[ H_0: \text{Acquisitions where the target is unquoted are more value-creating than to the quoted counterpart in the short- and long-term} \]

### 2.4.5 Related vs. unrelated

Related acquisitions involves two companies in the same industry, whereas unrelated acquisitions are between two companies from different industries.

Related acquisitions, include horizontal mergers, selling the same goods and services (products) in the same market, whereas vertical mergers occurs when two companies (or more) operate at different levels within an industry’s value stream and thereby merge together their operations. The type of value source in related acquisitions relate to revenue enhancements, cost savings and new growth opportunities. The term ‘related’ is just a more loosely defined word than horizontal (Sudarsanam, 2010).
Table 2.4.5.1. Announcement period CARs to related acquiring shareholders

**EMPIRICAL EVIDENCE:**
**WEALTH CREATION FROM RELATED ACQUISITIONS**

<table>
<thead>
<tr>
<th>Study</th>
<th>Country, sample period, sample size</th>
<th>Event window</th>
<th>CAR (^{b}) (%)</th>
<th>Post-acquisition return (^{b}) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leath and Borg (2000)</td>
<td>US; 1949-30; 417</td>
<td>Bid period</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Hoberg and Palla (1998)</td>
<td>US; 1960-70; 392</td>
<td>11 days</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Mork et al. (1988)</td>
<td>US; 1975-87; n.a.</td>
<td>4 days</td>
<td>2 to 3</td>
<td></td>
</tr>
<tr>
<td>Macquiera et al. (1998)</td>
<td>US; 1977-96; 47 stock offers</td>
<td>81 days</td>
<td>-5*</td>
<td></td>
</tr>
<tr>
<td>Doukas et al. (2002)</td>
<td>Sweden; 1980-1995; 46</td>
<td>n.a.</td>
<td>3*</td>
<td></td>
</tr>
<tr>
<td>Martinova and Renneboog (2006)</td>
<td>Europe; 1993-2001; 1334</td>
<td>11 days</td>
<td>1*</td>
<td></td>
</tr>
<tr>
<td>Bae et al. (2002)</td>
<td>Korea; 1981-97; 66</td>
<td>11 days</td>
<td>4*</td>
<td></td>
</tr>
<tr>
<td>Eckbo et al. (1986)</td>
<td>Canada; 1964-83; 215</td>
<td>12 days</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

\(^{a}\)Publication details of the cited studies are given in the references-section.

\(^{b}\)Return rounded to nearest integer and based on a variety of benchmarks.

Source: After inspiration from table 5.4 in Sudarsanam, S., 2010. Own contribution.

The negative return, found in the study by Macquiera (1998), seems to reflect the negative impact associated with stock for stock mergers. Beside from that study, all studies find positive wealth creations to the acquiring shareholders.

From the empirical findings in Europe, the study by Renneboog (2006) finds that related acquisitions generate a significant 1 % CAR over 11 days whereas the unrelated (diversifying) acquisitions only generate 0.5 %. The authors behind this study define their unrelated group as acquisitions where acquirer and target is different in the two-digit industries, and classify the others as related.

Doukas et al. (2002) finds, that in the unrelated acquisitions acquiring shareholders experience CARs down to -2.4 %, whereas acquiring shareholders in related acquisitions enjoy a wealth creation on 2.7 %. Though overall, there seems to be no strong evidence that unrelated acquisitions destroy value for the acquiring shareholders, but there seems to be clear consistency and evidence, that they create less value than the acquiring shareholders, who engages in related acquisitions. Unrelated acquisitions seem to be difficult for the market to understand the realized synergies benefits from and tends to be more complicated.

The relatedness is typically found through industry classification codes (US SIC, NAICS etc.), and to segment if a target is related or unrelated, these companies need to share the same industry codes. The most common code used in the studies is the standard industrial classification (SIC) code. The classification is done at different levels of aggregation, with each level assigned a number. Researchers usual define targets to be unrelated if they are outside either a two-, three- or a four- digit level, and it is a discussion since companies that do not share e.g. a four-digit industry still may operate in non-overlapping four-digit
industries that belong to the same three-digit or two-digit groups (Sudarsanam, 2010). The lowest-digit level represents the most unrelated (diversified) business groups and the highest digit level, the least.

For the European evidence Renneboog et al. (2006) report that 36 % of the observations are unrelated and 64 % is related on a two-digit level in their study. It is still a major characteristic for many of the larger European (and American) companies to use unrelated diversification, and the motives behind, is either to increase market power or to be more efficient in the internal capital market. These large companies typically go under the name ‘conglomerates,’ a company, which allocates investment funds to a number of individual business. Countries within Europe seem to differ in their traditional approach towards conglomeration, and there may exist different institutional and regulatory environments that affect their gains. Conglomerates make many of these unrelated acquisitions and tend to be exposed from severe agency problems.

A more recent study by Villalonga (2004) finds that diversification does not destroy value, but that the value is destroyed by a conglomerate discount. This discount is the cost of lack of transparency that comes with a conglomerate (Thomas, 2002). Campa and Kedia (2002) found that if the discount was not there, the shareholders would earn a premium.

In conclusion, it seems like the empirical evidence becomes slightly more complex when it comes to explain the wealth creation in unrelated acquisitions. However, to keep it simple, the literature suggest that the related acquisitions should outperform unrelated acquisitions.

\[ H_7: \text{Related acquisitions are more value-creating than the unrelated counterpart}\]

### 2.4.6 Other factors

The paper could have focused on many more variables than the ones covered above. The relationship between tender offer vs. negotiated deal, pre-acquisition leverage of the acquirer, pre-acquisition cash reserves of the acquirer, focus vs. diversification strategy, recent IPO vs. older listed companies of the target could have been investigated among the many relevant factors. But to include additional factors into the later presented model, would be beyond the scope of this paper.

No empirical evidence is given on the control variables used in the later performed cross-sectional analysis, but they will be briefly commented in the appendix.
3. Hypothesis

Based on the empirical evidence presented in the previous chapter, it is without any doubt, that shareholders from the target companies would acquire - and require - a higher, significant abnormal return around the announcement period, in an acquisition; thereby reaping the majority of the gains. The empirical evidence concludes, that acquisitions will generate value overall for the acquiring- and the target shareholders combined. However, the wealth impact from the acquiring shareholders is mixed in the literature. Some seems to gain a small positive abnormal returns (value creating) while other suffers (value destructive). While the transaction is a decision that the acquiring company undertake, and typically is a part of their growth strategy, then it is important to reflect on when trying to maximize value to the acquiring shareholders. If the shareholders knew, that most acquisitions would be value destructive, they might (would) not allow the company’s management to engage in the transaction. There is unfortunately no magic wand to create value. However, if investor had some insights from some deal and company characteristics of the acquisitions, and knew which specific charistica to look at to be profitable from the overall experience in the literature, then... that would be a good tool.

To sum up following hypothesis have been stated:

| Hypothesis H1                  |
| Acquisitions generally generate positive abnormal return to bidders in the short-term |

| Hypothesis H2                  |
| Acquisitions generally generate negative abnormal return to bidders in the long-term |

| Hypothesis H3                  |
| Cash acquisitions are superior to other payment types in the short- and long-term |

| Hypothesis H4                  |
| \( H_4: \text{Domestic acquisitions are superior to the cross-border counterpart in the short- and long-term} \) |
(Hypothesis H5)

Acquisitions where there exist a low relative size between the bidder and target are more value creating than a high relative size between the two in the short- and long-term

(Hypothesis H6)

Acquisitions where the target is unquoted are more value-creating than to the quoted counterpart in the short- and long-term

(Hypothesis H7)

Related acquisitions are more value-creating than the unrelated counterpart

As the overall null hypothesis specified that \( H_0: \text{The event has no impact} \), all the hypothesis stated above will be tested in the empirical findings chapter and furthermore assist us to provide solid answers to the research questions given in the problem statement.
4. Methodology

This chapter will go in details with the event study approach used in the study (methodology), and as seen, the approach is mainly based on the recommendations by MacKinlay (1996). While the book only covers to some extent the event study methodology, there is a need to include additional literature, and plenty of other references, and empirical evidence are therefore linked together into an assembled theoretical foundation throughout the chapter. This collected evidence help us to understand and strengthen our later analysis and conclusions, and more importantly, is needed while the econometrics book solitary has its focus on the announcement period abnormal returns (short-run ARs) and thereby lack to cover the post-announcement abnormal returns (long-run ARs) equal to the event study methodology in the long-run perspective with inclusion of the BHAR- methodology and other related models. The additional literature will compensate for the missing long-term perspective in the book and therefore provide the needed evidence for this chapter.

4.1 Event Study

A common way to measure the short- and long-term wealth effects for shareholders is through the event study methodology. The idea behind the approach is simple; the new information initiated from the M&A announcement would immediately be picked up by the stock market, and through updated investor expectations, reflected in the stock price. In this section, the paper will look at the various models and present the ones used for the study.

4.1.1 Definition of event window and estimation period

In the short-horizon, we assume that the price response from an event happens instantly, but researchers argue that stock prices also adjust in a much slower pace from new information due to market inefficiencies. Therefore, long-term studies, examine returns over longer periods (horizons) typically over a year or a number of years. The methods used to calculate the abnormal returns seem to have a great variety and the statistical tests to detect them differ among the studies.

The event windows used in the paper would in the short-term be a two-day (0;1), three day (-1;1) and 21 day (-10;10), where 0 is the event day itself. For the longer horizon (long-term), a one, two and three-year horizon will be used.

The notations used in the study will more or less follow the recommendations from chapter four in MacKinlay (1997):
"$\tau$" is used to index returns in event time. The event day (announcement day) will be called $\tau = 0$. $\tau = T_1 + 1$ to $\tau = T_1$ represents the event window, and $\tau = T_0 + 1$ to $\tau = T_0$ constitutes the estimation window. The length of the estimation window is $L_1 = T_1 - T_0$, and the event window is $L_2 = T_2 - T_1$. If the event being considered is an announcement on a given date then $T_2 = T_1 + 1$ and $L_2 = 1$. The post-event window will be from $\tau = T_2 + 1$ to $\tau = T_3$ and its length is $L_3 = T_3 - T_2$.


These notations are illustrated in the timeline below:

**Figure 4.1.1.1, Event study notations illustrated into timeline**

<table>
<thead>
<tr>
<th>(estimation window)</th>
<th>(event window)</th>
<th>(post-event window)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$T_0$</td>
<td>$T_1$</td>
<td>0</td>
</tr>
<tr>
<td>$T_2$</td>
<td>$T_3$</td>
<td></td>
</tr>
</tbody>
</table>

"$I_1$" "$I_2$" "$L_3$" "$\tau$"

Source: Own contribution

For easier understanding, the datasets (excel sheets) use the notations of zero for the event day, 1, 2 ... n (for the days after the event) and -1, -2 ... -n (for the days prior the event). But the notations from the formulas – many of them – follow the more mathematical notations as presented above.

The estimation window will start -11 days prior the event, hence the assumption that the event window of $N$ securities do not overlap to set the covariance terms to zero. The CAR(-10,10) event window, used in the study, will thereby not overlap the estimation window, leaving no problems with an overlap and no caused statistical improprieties. In the literature, the standard estimation period (estimation window) is between 200 and 250 observations (Bartholdy, 2007).

### 4.1.2 Benchmark portfolio models and abnormal returns (AR)

A price performance of a security can be considered ‘abnormally’ only with reference to some benchmark, why it is necessary to specify a return-generating model before abnormal returns can be measured. Fama (1976) argues that log-returns creates much better conditions in the $t$-statistics and he argue that continuous return can reduce the degree of skewness in the distribution. As response to that, the paper follow the recommendations, and use only log-returns.
The study uses the market return model (or in short - the 'market model'), even though, there are several other models such as; the Capital asset pricing model (CAPM), mean-adjusted model, constant-mean-return model, Fama and French's three-factor model (FFTF), Caarhart four-factor model, reference portfolio, matching with control firms on specific firm characteristics among others. The market model is virtually identical for the constant-mean-return model (MacKinley, 1997). Some of the other models lay beyond the scope of this paper, why we continue with the market model and reference portfolio in the following sections.

4.1.2.1 Abnormal performance with the market model

The market model reveals that the expected return for security \( i \) is given by

\[
R_e = \alpha_i + \beta_i K \cdot R_m
\]

The parameters \( \alpha_i \) and \( \beta_i \) are estimated by regressing the security returns on the market return for the period, and are the \( \alpha \)- and \( \beta \)- values for the individual stocks. The model is widely recognized in event studies. The structure of the model is rather simple and can be executed through an OLS regression as it assume a constant relationship between the market index returns and the stock returns. Furthermore, \( R_e \) is the return of a given security on a given day, where \( R_m \) is the market return.

With the market model's OLS generated alpha- and beta- estimates, we could use these to identify the expected return for any given security in the event window, \( L_2 \). The differences between the expected return and the observed return is called the abnormal return (AR) and is calculated

\[
AR_i = R_i - E(R_i)
\]

For the short-term study with the use of the formula above, the abnormal return for any given day in the event window, \( L_2 \), can be calculated.

The daily sum of the abnormal returns in the \( n \)th- day event period is called CAR (cumulative abnormal return). The idea behind the CAR estimate is to put equal weight on each day in the event window. Thus this might increase bias, hence one could say, that the most influencing day on the event window must be the event day itself. CAR for security \( i \) through time period \( L_2 \) is given by

\[
CAR_{i,L_2} = \sum_{t=1}^{n} AR_{it}
\]

And to find the overall aggregation through time and across stocks, the following formula can be used.
This average, when the abnormal returns (ARs) are cumulated over time, is sometimes in the literature being called CAAR. Likewise, the “average” AR can be called AAR.

For the long-term study, an alternative method to compute the abnormal returns need to be introduced, other than the cumulative abnormal returns (CAR) approach. To accurately capture the wealth effect in the long-term the buy-and-hold (BHAR) approach is argued to be theoretically better (Barber and Lyon, 1997) and is probably the most widely used approach to test long-run abnormal returns. The way BHAR is calculated, is the return on a buy-and-hold investment in the sample firm less the expected return on a buy-and-hold investment in a reference benchmark or a reference portfolio (Sudarsanam, S., 2010). The following formula show that BHAR for security $i$ during period $T$ is given by

$$ BHAR_{i,t} = BH_{t,i} - E\left[BH_{t,i}\right] = \prod_{t=1}^{T} \left[1 + R_{i,t}\right] - \prod_{t=1}^{T} \left[1 + E\left(R_{i,t}\right)\right] $$

The buy- and- hold (BH) framework is found to be very close to the investors wealth creation and compounds the returns over time. The method can be used to calculate the buy- and- hold returns for 12, 24 and 36 months respectively. The reference benchmark or reference portfolio can be either the market index, a single company or a reference portfolio.

In contrast to the short-term event study methods, serious limitations of long-term methods have been identified in the literature throughout the last decades and still remains. Even using the best methods of analysis, the long-run abnormal returns can be treacherous (Lyon, 1999), and Fama (1999) comments that the short- horizon tests represents the ‘cleanest evidence we have on efficiency’. Kothari and Warner (1997) initially conclude, that those inferences from long-horizon tests ‘require extreme caution.’ While the short-horizon event studies are relatively straightforward and robust, more confidence and weight are recommended to be put on the results from the short- term horizon than the long-term horizon. The interpretation of long- horizon results can be somewhat problematic. Kothari (2004) comments that the three- day abnormal return ‘only’ seems to be misestimated by about 0.06 %, which is rather small especially when compared to an abnormal return e.g. 1 %, but this misestimation will be tremendously amplified over a multi- year long- horizon.

Barber (1997) reports problems using the market index since new listing bias arises in the index and furthermore report problems regarding a re-balance bias and a skewness bias. Additionally, in the single company reference benchmark there might be a risk of choosing an extreme peer company, why the authors recommend using a portfolio consisting of several companies to reduce this bias.
4.1.3 Statistical tests

To test the null hypothesis the study needs to apply a number of tests for drawing the statistical inference on the abnormal returns (ARs). These tests can through the hypothesis determine whether or not the event had an impact and the tests can be grouped into two types of tests: parametric tests and non-parametric tests. There are different pros and cons for each test, but one could say in general, that parametric tests yield better performance than non-parametric tests. However, if the underlying assumptions were broken, the non-parametric tests would give a more reliable result than the parametric tests. An example of a broken assumption could be, that the daily stock returns in reality is not as normal distributed as assumed and therefore non-normal distributed (Bartholdy et al., 2007).

The different tests used in the paper are summarized in the table below:

<table>
<thead>
<tr>
<th>OVERVIEW: DIFFERENT STATISTIC TESTS USED IN THE PAPER</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>(Short-term study)</em></td>
</tr>
<tr>
<td><strong>Name</strong></td>
</tr>
<tr>
<td>T1</td>
</tr>
<tr>
<td>T2</td>
</tr>
<tr>
<td>T3</td>
</tr>
<tr>
<td>T4</td>
</tr>
<tr>
<td>T5</td>
</tr>
<tr>
<td>T6</td>
</tr>
<tr>
<td>T7</td>
</tr>
<tr>
<td><em>(Long-term study)</em></td>
</tr>
<tr>
<td><strong>Name</strong></td>
</tr>
<tr>
<td>T8</td>
</tr>
<tr>
<td>T9</td>
</tr>
<tr>
<td>T10</td>
</tr>
</tbody>
</table>

Notes: P = Parametric test, NP = Non-parametric tests

Source: Own contribution

As seen from the above table, the paper include five parametric and to non-parametric tests in the short-term (T1–T7) and two parametric and one non-parametric test (T8–T10) in the long-run.
All the tests have been individually discussed in *appendix 10.4.* since each of the test has their own unique properties. Some remarks are thus been given to the two type of tests used, the parametric- and the non-parametric tests, and their different properties.

Overall, parametric tests provide estimates that are more accurate and have higher statistical power. Parametric tests are typically not used in isolation, but in conjunction with their non-parametric counterparts, as the non-parametric tests have quite another nature. The non-parametric tests do not take the specific assumptions in the distribution of returns into consideration. To check the robustness of the findings from the parametric tests, non-parametric tests can be used. The parametric tests usual performs better, but in some cases, non-parametric tests are found to beat the parametric tests and thereby provide more reliable inferences (Campbell, 1993; Luoma, 2010). As discussed by Warner (1985) the various parametric test statistics differ from one another primarily in the way they adjust for problems encountered in the data. The parametric tests require four main fulfilled conditions before they can be considered reliable: 1) sample must be drawn from a normal distributed population 2) independent observations 3) constant variance in the population and 4) residuals must have an expected value of zero. If the assumption of normality is broken it can bring severe damage to the study. Furthermore, it should be noted that the statistic tests requires uncorrelated observations in the event window. It is impossible to fully satisfy this assumption since all the stocks are influenced by the same market factors. MacKinley (1997) concludes that T1 is stronger than T3, since it eliminates the risk of having few large variances destroying the result. This finding is backed up by Bartholdy et al. (2007).

The non-parametric tests include the rank- and the sign-test, which both is used in the study. The sign test is based on the signs found on the abnormal returns, and this requires the abnormal returns are independent across observations. The sign test assumes that the probability of observing either a negative or a positive abnormal return/CAR is 0.5. To calculate the test statistics, the number of cases where positive and negative signs must be identified. A weakness of this test might be that the test do not perform that well when the distribution of abnormal returns tends to be skewed.

The rank test is based on the idea by ranking each abnormal return across stock and time, and to test the rank in event period with the expected rank (Corrado, 1989). Through the period, each stock is ranked. Like the sign test, the rank test requires that the abnormal returns are independent across returns and an additional requirement is, that the abnormal returns need to be symmetric distributed. Corrado (1989) explains that his test precludes the misspecification of the sign test. The ranks are dependent by construction, which introduces incremental bias into the standard error of the statistic in longer event windows (Luoma, 2010) and thereby loses power for longer CARs (e.g., [-10,10]). The pros and cons of the other test can be found in the appendix, but a good recent study that provide insight of the various strengths and weaknesses of many of the presented tests, can be found in the study by Kolari (2011).
4.1.4 The two-sampled t-test for comparison analysis

To further analyse the difference between the sub- samples a simple two- sampled t-test is used (Cochran, 1989) and is given by

$$t = \frac{X_1 - X_2}{S_{X_1X_2} \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

where

$$S_{X_1X_2} = \frac{(n_1 - 1)S_x^2 + (n_2 - 1)S_x^2}{n_1 + n_2 - 2}$$

In the expressions above $n_1$ and $n_2$ are the sizes of the samples, $X_1$ and $X_2$ are the sample means for each of the group and $S^2_{X_1}$ and $S^2_{X_2}$ are the sample variances. The main requirement here is that the variances from these two sub- samples are assumed to have equal variances since we are interested in comparing the samples directly to each other.

4.1.5 Cross- sectional regression analysis

The simple regression analysis goes beyond the t-tests as it reveals the exact correlation between the abnormal return and the variables of interest.

The linear regression model is given by

$$Y = \beta_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots + \beta_p X_p + u$$

Where $X$ is a matrix of several explicative variables that goes from $X_1$, $X_2$, ..., $X_p$ and the relationship can from $i$ be described as

$$Y_i = \beta_1 + \beta_2 X_{i1} + \beta_3 X_{i1} + \ldots \beta_p X_{ip} + u$$

It is assumed there exist a linear relationship between the model parameters. In matrix notation this model can be simplified as

$$Y = bX + u$$

Where $Y_i$ is the dependent variable (in the study: CAR, BHAR ..), $X_i$ is a vector of the deal and company- specific variables including the constant and beta is a vector of their significance in relation to the dependent variable. From this expression, it is possible to define the precise impact on the abnormal return from
the variables of interest. Control variables can be included in aspect to remove disturbance from the error term. Here various of assumptions is related to the error terms and additional assumptions e.g. that observations on independent variables are fixed in repeated samples (that X is non-stochastic) and the explanatory variables do not form a linearly dependent set.

The method for estimating the unknown parameters in the regression model, will be with the use ordinary least squares (OLS) in accordance with Verbeek (2008).

All the relevant assumptions for the statistical tests and models can be found in appendix 10.5.

4.1.6 Additional study related remarks

As a limitation to the paper, the study will only use the market index as reference benchmark, thus we might expect some sort of biases from this choice as cited in some of the literature. The literature seems not to have found any golden paths in the methodology for the long- run studies yet and while researchers promotes reference portfolios as benchmark, others warns against them. Another reason for this choice is that the supplementary dataset to this study consists of more than 4,500 valid events each of one with around four years of daily stock- and corresponding market prices, the year prior the announcement and the additional three years after. The presented data is thereby considered highly dependent on evidence drawn from a high sample size, whereas other studies (also recent literature) typically only capture the effect from 200-800 observations. Thereby hoping to provide new insights with the extensively captured data. As result we might put more reliance on the short- term findings which is recommended by Fama (1999) and other researchers in the field. Thus the variables used to identify peers from the multi- company portfolio, all will be present in the cross- sectional analysis as control variables, and the most common for that are: the book-to-market (BTM) ratio, industry codes and size parameters.

The estimation window will follow the recommendations from (Bartholdy, 2007) and more specifically 200 observations which corresponds roughly to one year, prior the announcement of the acquisition. As reference benchmark the Morgan Stanley Capital International (MSCI) European Union index has been chosen and the index is called ‘MSECOML’ in Datastream.

Additionally, there is pro’s and con’s with the various return frequencies. Is it possible to extract monthly, weekly and daily returns from the databases and through Thomson Reuters’ Datastream used in this study. Monthly data seem to eliminate the issues of thin- trading in most stocks. However, monthly data suffer from a small sample size with a risk of making the distribution non- normal that will invalidate the test statistics used in the study. Daily data seems to overcome the issue, but when it comes to thinly- traded stocks, it can interrupt

---

3 Before 1999, the historical Euro was calculated as the basket of 11 legacy currencies in Datastream; Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain, 11 of the initial 12 first European Members countries in the European Monetary Union (leaving out only Greece from the legacy currency calculation.) All company returns have been padded to Euro from their own respective local currency through the procedure X(RI)~E in Datastream.
and mess up the conducted analysis. The literature recommends to eliminate all thinly-traded stocks (MacKinlay, 1997; Bartholdy et al., 2007) and are therefore omitted, so the daily stock returns can be used.

We will use daily returns for the short-run study and monthly returns for the long-run study respectively as a respond to the recommendations in the literature.

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Bartholdy et al. (2007) defines stocks with a trading frequency less than 40% on all trading days as thinly traded stocks.
5. Data

In this chapter the paper document how the data have been obtained through the various databases. Moreover, it will obtain data for the larger sample called the ‘overall sample (enlarged)’ in the study and then the overall sample named ‘overall sample’. The paper draw descriptive statistics and tests of representativeness on some respective parameters in the large sample even though the overall sample (the overall sample), will be the main focus for the study. To understand how the data have been selected, a stepwise guide has been prepared and cover the most important steps in the data collection.

5.1 Data selection procedure

The data collected in the study have been treated carefully through various databases such as Zephyr, Orbis, Orbis (2005), Amadeus and Datastream. These databases have different characteristics and benefits. The current Orbis version contains details only from companies 10 years back, why it was needed for the study, to include older non-online databases of Orbis denoted Orbis(2005) since the database is from that time, so the period 03’–96’ could be covered. Zephyr was used to identify and collect the initial events whereas Orbis, Orbis(2005) and Amadeus, provided additional information to these event and lastly Datastream collected stock- and market returns. To provide insight about how the data have been selected

5.1.1 Stepwise data selection for the overall sample (enlarged)

The stepwise data selection gives an inclusive overview on how the data have been selected. This is meant to be a walk-through of the sample creation and give strong insights on the procedure in how the exact events have been collected. The next table show how the large sample for the study emerged and underneath it, a description of the steps in text, making the steps more clear and understandable.

Table 5.1.1.1, Stepwise selection – overall sample (enlarged)

<table>
<thead>
<tr>
<th>ZEPHYR: SEARCH STRATEGY</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Deal type: Acquisition, Merger</td>
<td>514,711</td>
</tr>
<tr>
<td>2. European Union enlarged (28) (Acquiror)</td>
<td>189,980</td>
</tr>
<tr>
<td>3. Listed acquiror</td>
<td>41,013</td>
</tr>
</tbody>
</table>
In Zephyr the data type chosen was mergers and acquisitions in step one, and out of these the acquirers should be from the European Union enlarged(28) in step two. Step three required acquirers had to be listed on the stock exchange(s). Furthermore in step four the acquired stake should be at least 50 % to ensure, that the acquiring firms gained full control of their targets. In step five US SIC codes (industry sectors) at categories 60, 80 and 90 were eliminated, since real estate, banking, finance, pension funds should be excluded from the search. For the long-term study, we needed three available years of stock, market and accounting data, limiting our study to only include events no later than 31.12.2010, and since Zephyr only began offering worldwide data from 1997, the lower limit was set to 1.1.1997. All these events had to be both announced and confirmed and were done through step six and step seven.

For the later data selection we had to do the last steps manually in Excel. To link the events to Datastream the acquirers needed to have available ISIN numbers and was treated in step eight. Events suffering from thinly traded stocks were removed in the sample in step nine. More specific, events that did not have at least 200 trading days with stock prices in the estimation window and a complete three-day event window were deleted in the sample. In step en the rumored date had to be on the same day as the announced date to ensure that the information had not been leaked to the stock market beforehand. In step 11 Zephyr proved itself not to be a ‘bulletproof database’ since it had included acquiring companies in the search that came outside EU. All events were
investigated to ensure that the database did not provide wrong BvD ID Number(s) and/or wrong country code(s).\(^5\)

The eleven steps above all together formed the ‘overall sample (enlarged)’ in the paper. In this sample there still exist a bit ‘disturbance’ since we did not (‘yet’) take into account overlapping events and that the acquiring companies should have consolidated financial statements only (hint: the overlapping events will become a dummy and we eliminate acquirers with non-consolidated financial statements in the overall sample and through the sub-samples). These two additional stepwise data selection accounted for 1,392 and 74 events in total. We are fully aware of this. Nevertheless, for the descriptive purpose of the overall sample (enlarged), the events are still kept, but treated later in the sub-samples.

### 5.1.2 Additional stepwise data selection for the chosen sample

To form the overall sample further reductions where applied and these additional selections can be found in the table below:

**Table 5.1.2.1, Stepwise selection – overall sample**

<table>
<thead>
<tr>
<th>EXCEL: MANUAL REDUCTION</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Available CAR values in event window</td>
<td>››</td>
</tr>
<tr>
<td></td>
<td>(4,698)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ORBIS: SEARCH STRATEGY</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Available Consolidated financial statements (code C1 or C2 only)</td>
<td>››</td>
</tr>
<tr>
<td></td>
<td>(4,627)</td>
</tr>
</tbody>
</table>

5. The conclusion was found and Zephyr included bad matches since the event description did not match the locations of headquarters and main locations, since they were found to be outside Europe, and even back in history they did not match and with no primary role relating to EU, why these events had to be excluded from the study.
14. Available target country codes

<table>
<thead>
<tr>
<th>EXCEL, ZEPHYR, ORBIS, ORBIS(2005) AND AMADEUS: REDUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. Available relative size of bidder’s and target’s total assets the year prior acquisition</td>
</tr>
<tr>
<td>16. Available number of employees of bidder firm the year prior acquisition</td>
</tr>
<tr>
<td>17. Available return on assets (ROA) of bidder firm the year prior acquisition</td>
</tr>
<tr>
<td>18. Return on sales (ROS) of bidder firm the year prior acquisition</td>
</tr>
<tr>
<td>19. Research &amp; Development (R&amp;D) expenses of bidder firm the year prior acquisition</td>
</tr>
<tr>
<td>20. Book-to-market (BTM) ratio of bidder firm the year prior acquisition</td>
</tr>
<tr>
<td>21. Market Capitalization (Market Cap) of bidder firm the year prior acquisition</td>
</tr>
</tbody>
</table>

Source: Own contribution

For step 12. – 21 the dataset had to go through a further reduction with all available information. In step 12, we had a handful of companies with no value in CAR event window. These had to be eliminated. Likewise, Orbis provided information about whether or not the companies had consolidated financial statements. Companies without consolidated financial statements were eliminated in step 13 by the using of Orbis classification code C1 or C2. In step 14 some targets lacked a country code, why these we eliminated as well, since we couldn’t determine the location of the targets. The remaining seven steps were related to the availability of accounting. These account for a reduction in the sample from 1,857 to 1,637 deals, and include available relative size of the total assets between the bidder and the target the year prior acquisition (15), number of employees (16), available ROA (17), ROS (18), R&D expenses (19), BTM(20) and lastly, available market cap of the bidder firm the year prior the acquisition.

From an initial search strategy in Zephyr that yielded 514,711 events in the beginning, only 1,637 were left after the above-mentioned reductions from the sequential criteria.
### EXCEL: SPLIT TO SUB-SAMPLES

<table>
<thead>
<tr>
<th>SUB-SAMPLES</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A  CASH</td>
<td>(460)</td>
</tr>
<tr>
<td>1B  OTHER PAYMENT</td>
<td>(1,176)</td>
</tr>
<tr>
<td>2A  DOMESTIC</td>
<td>(960)</td>
</tr>
<tr>
<td>2B  CROSS-BORDER</td>
<td>(677)</td>
</tr>
<tr>
<td>3A  RELATIVE SIZE LOW</td>
<td>(183)</td>
</tr>
<tr>
<td>3B  RELATIVE SIZE HIGH</td>
<td>(1,454)</td>
</tr>
<tr>
<td>4A  QUOTED</td>
<td>(127)</td>
</tr>
<tr>
<td>4B  UNQUOTED</td>
<td>(1,510)</td>
</tr>
<tr>
<td>5A  RELATED</td>
<td>(1,288)</td>
</tr>
<tr>
<td>5B  UNRELATED</td>
<td>(349)</td>
</tr>
</tbody>
</table>

*Source: Own contribution*

One of the last procedures was to split the sample into their respective sub-sample which was needed to perform the later analysis for the study. From the splitted sub- samples, tests can investigate whether or not there seems to be a difference between the samples. Here it is important that the variables need to be significant before comparing it to each other through the performed two-sampled t-tests.

Before doing that, and before continuing to the following chapter, the following last section will briefly present some descriptive statistics from the obtained data.
5.1.3 Descriptive statistics

For identifying which years the acquisitions took place, following figure show the yearly developments in both the overall sample and the overall study (enlarged).

*Figure 5.1.3.1, Development of acquisitions throughout the time period*

As seen from the figure the years of the overall sample seems to follow the larger overall sample (enlarged) more or less. From 1997 – 2001 however, it seems like the years are underrepresented compared to the later years selection. This might be due to the databases lacks to capture the needed information prior in time and the more recent information tends to be much more consistent and comprehensively covered. As presented in the stepwise data selection before, the overall sample yielded 4,703 deals whereas Zephyr’s total output initially contained 6,685 deals. Just to be clear, the figure above shows only the developments of the deals with the given criterias in the study, and do not include all acquisitions from the European Union during the time period. Likewise, Zephyr may not contain all deals made in the Union throughout time, but only include the deals that the distributors reported to the database. Nevertheless, the sample is assumed to approximately present the developments with restrictions to some kind of under representation and omission of given variables and measures related to the selection process. The results might differ across countries. Especially before 2005, where the acquiring companies in EU were not required to prepare their financial statements in accordance with *International Financial Reporting Standards* (IFRS) as promulgated by IASB and mandated by EU law (Sudarsanam, 2010). In this manner, acquiring companies reported differently across the European Union prior in time, which might explain that the years before 2002 seems to be underrepresented when introduced to the new
selection requirements in the ‘reduced’ overall sample. To support this link, next piece of descriptive statistic relates to the countries.

To give an exclusive insight of where the acquirers and targets come from, a table has been developed for the purpose. In the table the left size axis compromises all the EU acquirers and the upper axis shows all the target countries. It is only the top- 25 target countries that is shown and the other target countries are sorted into their respective world region. Additionally, a country- wise representation test has been performed from this table and can be found in appendix 11.3.

Table 5.1.3.1, Presenting the countries

<table>
<thead>
<tr>
<th>TOP 25 TARGET COUNTRIES</th>
<th>REGIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>24</td>
</tr>
<tr>
<td>France</td>
<td>22</td>
</tr>
<tr>
<td>Germany</td>
<td>11</td>
</tr>
<tr>
<td>Sweden</td>
<td>7</td>
</tr>
<tr>
<td>Netherlands</td>
<td>5</td>
</tr>
<tr>
<td>Austria</td>
<td>3</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>3</td>
</tr>
<tr>
<td>Spain</td>
<td>3</td>
</tr>
<tr>
<td>Slovakia</td>
<td>2</td>
</tr>
<tr>
<td>Portugal</td>
<td>2</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>1</td>
</tr>
<tr>
<td>Malta</td>
<td>1</td>
</tr>
<tr>
<td>Poland</td>
<td>1</td>
</tr>
<tr>
<td>Portugal</td>
<td>1</td>
</tr>
<tr>
<td>Slovenia</td>
<td>1</td>
</tr>
<tr>
<td>Poland</td>
<td>1</td>
</tr>
<tr>
<td>Sweden</td>
<td>1</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1</td>
</tr>
<tr>
<td>Grand Total</td>
<td>547</td>
</tr>
</tbody>
</table>

Source: Own contribution

The overall sample compromises bidders from 25 EU countries. The most represented country is United Kingdom from which a total of 547 bidders originate. The second largest contributor is France with 252 bidders and the Nordic bidders consist of 302 in total. As seen, the EU acquirers’ top destinations to make acquisitions are strongly within the European Union with UK, France and Germany as the favorite target locations (with 521, 220 and 109 deals
respectively). Twenty-three out of the twenty-five top target countries are found to be intra-EU.

Some interesting evidence are found when a comparison between the samples are made. The corresponding table for the overall sample (enlarged) can be found in appendix 11.2. As seen, United States moved from a 2nd place to and 18th place and likewise, Canada, Brazil, Australia and China were no longer present on the list, strongly indicating that the later selection from the two samples resulted in strong movements of some specific top target countries. The major difference between the samples is the requirement of available accounting data and thereby this lack seems to be the sinner behind the movements. Whether Orbis fails to obtain information from target companies outside EU or that reporting requirement differs across countries, we do not know, but it can be observed there seems to exist differences between the samples. To test the statistical significance a test of representativeness has been performed from both the target countries’ and acquirer countries’ perspective. The $p$-values close to zero indicates that the null hypothesis of equality of the two sets of proportions can be rejected, verifying our concerns, that there unfortunately seems to exist significantly differences between the observed and expected values of the targets and acquirers in the sample. Other tests of representativeness may show the sample lacks in a range of other variables such as SIC codes, various accounting data measures etc. However, these issues will not be investigated any further other than that there might be problems regarding the representativeness between the various measures throughout the data reduction. The table from the overall sample (enlarged) can be found in appendix 11.2 and likewise a test of representativeness have been performed from the acquirers and the targets point of view.
6. Empirical findings

In this chapter, we will present all the findings and results from the conducted analysis and conclude on the hypothesis stated throughout the paper. The first section document the overall found value creation to the bidders in the short- and then, in the – long- run. After that, we look at the performance from the sub-samples and last, we perform a multiple linear regression in our cross- sectional study, to see, if we can provide more evidence from the documented factors. Through the sections, we will make linkages to the previous chapters and conclude whether or not the findings from the study seems to be consistent with the empirical evidence drawn from the literature.

6.1 Overall value creation

6.1.1 Short- term findings

A plot can provide insight of the accumulated CAR and therefore the figure below draws these developments both 15 days prior and after the announcement.

Figure 6.1.1.1, Cumulative abnormal return split on three day sign

As seen in the figure there are no clear signs of leakage in information in the days prior to the announcement. These values are more or less fluctuating around zero.

Source: Own contribution
This picture is rapidly changed, on the event day, as the announcement information suddenly affects the model as expected hence CAR raises to 0.7 % (look at the combined line in the figure). To examine potential drift- and information leakage, the sample has been split up in two lines (dashed- semi dashed lines) based on the findings of their CAR(-1,1) sign. From a total sample of 1,637 deals, it is found that 933 are positive and 704 are negative as a result from this operation. This reveals that the effect is not just ‘averaging out’ in the model and gives clearer visualization of the announcement impact. It is positive news that the CARs, prior to the announcement between the two lines, do not seem to fluctuate. Similar findings are found in the overall sample (enlarged) plot in appendix 10.7 meaning, that these findings seem to be consistent even after the data reduction.

On a yearly basis, the average yearly three- day period CAR can be illustrated:

Figure 6.1.1.2, Average yearly CAR(1,1) through the time period

The wealth creation from announcements seem to differ throughout the time period. From the data in 1998 the study finds very small positive yearly average CARs and in 2008 result in negative yearly average CARs. Acquisitions seem to be value destructive in this year. This evidence copes well with the literature, since it was the year the credit crunch began and the slump of the sixth- merger wave, as explained earlier. It seems like the investors were slightly pessimistic in this period – if not the sample just provides a bunch of bad acquisitions from this year – however, it is argued that the general market tendencies will impact the model in line with the empirical evidence from the literature. Nevertheless, it seems like the announcement, of acquisitions generally in the time period (except for the year 2008) is appreciated by the market through positive average CARs in the short- run and are creating value for the acquiring shareholders.
Table 6.1.1. Overall short-term empirical findings

<table>
<thead>
<tr>
<th></th>
<th>[-1,1]</th>
<th>[0,1]</th>
<th>[-10,10]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAR</td>
<td>1.23 %</td>
<td>1.13 %</td>
<td>0.68 %</td>
</tr>
<tr>
<td>T1</td>
<td>10.78 ***</td>
<td>12.10 ***</td>
<td>2.24 **</td>
</tr>
<tr>
<td>T2</td>
<td>12.70 ***</td>
<td>10.97 ***</td>
<td>2.05 **</td>
</tr>
<tr>
<td>T3</td>
<td>12.28 ***</td>
<td>13.62 ***</td>
<td>3.34 ***</td>
</tr>
<tr>
<td>T4</td>
<td>7.25 ***</td>
<td>7.32 ***</td>
<td>2.02 **</td>
</tr>
<tr>
<td>T5</td>
<td>12.28 ***</td>
<td>13.62 ***</td>
<td>3.34 ***</td>
</tr>
<tr>
<td>Non-parametric</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Sign) T6</td>
<td>5.65 ***</td>
<td>4.51 ***</td>
<td>1.15</td>
</tr>
<tr>
<td>(Rank) T7</td>
<td>-8.70 ***</td>
<td>-9.52 ***</td>
<td>-7.89</td>
</tr>
</tbody>
</table>

Source: Own contribution

As seen from the above table, an increase in CAR of 1.23 % is found on the three-day event period, an increase in 1.00 % is found on the two-day event period and an increase of 0.44 % is found in the 21-day event period. All tests (T1 – T7) are found to be strongly significant in the three- and two-day event period, but less strong results are found overall in the 21-day event period, thus still strongly significant in the T3 and T5 test, and only the non-parametric sign test – T6 – finds weak significance. T1, T2, T4 and T7 still have a significance level on below 0.05 and thereby semi-strong results.

In conclusion, our study hereby finds that European Union bidders earn significant positive abnormal returns in the announcement period and the specific result for the three-day event period is a cumulative abnormal return on 1.23 %. Either which tests we use, the findings seems to be robust. As figure 6.1.1 investigated there seems to be no indication of information leakage. The hypothesis H1 can therefore be confirmed stating that acquisitions generate positive abnormal return to bidders in the short-term.
6.1.2 Long-term findings

Similar the BHARs for the long-run can be plotted into a diagramme and provide insight of the developments in all three years. Again all the BHARs are grouped into two samples besides the combined. This is illustrated in the figure below:

Figure 6.1.2.1, BHAR split on one-year sign

![Diagram showing BHARs for one-year sign over different time periods.](image)

Source: Own contribution

The study reports a positive development of the BHARs through time. We would have expected more negative observations than the ones found in aspect to the long-run evidence literature. More negative BHARs are thus found (864) compared to the positive BHARs (773), however the positive BHAR values are greater, and in effect resulting, in a total wealth creation shown in the combined ("overall") line. Looking at the lines individually it is observed that the positive line’s slope is highest after the first year, but keeps its rise in a slower pace through year two and ultimately rise a bit until year three. By looking carefully, it can be observed, that two months into year two (26 months after the announcement) the positive BHARs begin to mean revert a bit. Similar development can be found in the negative line (negative BHARs), where most of the value destruction happens in the first year and after an additional impact seems to fade away and in month 29 the line begins to mean revert slightly in a similar pattern observed with the positive BHARs. As it seems to be difficult to observe the precise fluctuations from the overall BHARs in the presented plot, another diagram will be drawn without the splitted groups and is shown here:
From the diagram, the evidence becomes somewhat clearer in terms of the overall value creation. This line is the ‘combined line’ from the previous plot and contains all the BHAR values from the overall sample. It can be seen that the abnormal returns are found to be 2.60% for BHAR(12), 7.21% for BHAR(24) and 9.84% for BHAR(36).

It should be noted in the study, that the statistical distribution of the abnormal returns especially in the long-run studies, are found to be relatively right skewed with most of the ARs in the right side of the mean. The methodology chapter reported a skewness bias exactly to this issue. The abnormal returns seems to follow a leptokurtic distribution – symmetrical in shape like the normal distribution – and is strongly indicated by high positive kurtosis values from especially BHAR(24) and BHAR(34). This results in a peaked distribution with thick tails. In fact, we actually reject the normality; even though the sampling distribution looks like it is drawn from a normal distribution (see appendix 10.12). As a comment, this means, that we should put more reliance on our non-parametric tests when the normality assumption seems broken (thus the central limit theorem tells us, that the sample should be large enough to assume the distribution are approximately normally distributed given the certain assumptions).

To go back to the analysis, we test year 1, 2 and 3 years for the BHARs respectively through the test statistics.
Table 6.1.2.1, Overall long-term empirical findings

OVERALL SAMPLE: LONG-TERM EMPIRICAL FINDINGS

<table>
<thead>
<tr>
<th></th>
<th>1 year</th>
<th>2 years</th>
<th>3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AR</td>
<td>2.60 %</td>
<td>7.21 %</td>
</tr>
<tr>
<td>Parametric</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T8</td>
<td>2.22 **</td>
<td>3.43 ***</td>
<td>4.31 ***</td>
</tr>
<tr>
<td>T9</td>
<td>2.31 **</td>
<td>3.55 ***</td>
<td>4.48 ***</td>
</tr>
<tr>
<td>Non-parametric (Sign)</td>
<td>T10</td>
<td>-2.26 **</td>
<td>-1.87 *</td>
</tr>
</tbody>
</table>

Note: *** Significant at a 1 % level, ** Significant at a 5 % level, * Significant at a 10 % level based on average
Source: Own contribution

As seen in the above table the BHARs seem to be clearly significant in all time period across the parametric and non-parametric tests. Only weak significant in T10 after crossing the two-year period, but else the parametric tests show strong significant results, and in year three all years are significant as well. In the first year, only semi-strong significance is found though.

Similar findings are documented in the overall (enlarged) long-run findings from the larger sample with 4,703 observations in total. Here it is observed that the average abnormal returns increases throughout the years with respectively 2.05 % after the first year, 4.58 % in the second year and 8.75 % in the third year. All statistical tests are found to be strongly significant. Likewise, the short-term empirical findings from the enlarged sample show strong significance throughout all tests statistics (T1-T7) for the event period of two-day and three-day, but when it comes to the 21-day, we only find a overall semi-strong significance. However again, this might be due to the many insignificant days included for this event window prior the announcement. The findings for the long-run study can be found in appendix 10.7. The test statistics overall, validates the strong claims that the BHARs in fact are positive in the post-announcement period. However, as mentioned in the methodology chapter, there could be severe biases related to the long-run model and to the chosen market index as benchmark. Therefore, the recommendation was to put more reliance in our short-term findings in the study, which we will do as end remarks in the discussion and the later conclusion to this paper.

From the post-announcement findings however, it is found that the acquisitions in fact are value creating in the long-run. This is a contradictory piece of evidence and goes against the most empirical evidence found in the studies reported from US, UK and the sparse results from Europe. This paper finds that the European Union Bidders overall experience wealth benefits in the long-run with a value creation close to almost ten percent after three years. The two figures in this section, figure 6.1.1.1 and 6.1.1.2, further investigated the monthly movements of the long-run ARs and illustrated these developments in the respective plots.
From the hypothesis H2 however, we cannot confirm that acquisitions generate negative abnormal return to bidders in the long-run. In fact, our results finds that the European Union Bidders overall create value and thereby violate the hypothesis stated in chapter three, since we initially thought the EU bidders would suffer a loss in the long-run. Again, the discussion and conclusion will follow up on these findings, to comment on them or try to explain, why the finding differ from the other studies.

6.2 Value creation in sub-samples

This section will provide evidence from the value creation drawn in each of the respective sub-samples. To support the evidence found from these, the paper additionally compares the respective sub-samples with each other (comparison analysis) afterwards, and through this procedure determine if the stated hypothesis H3 – H7 can be confirmed or not.

Table 6.2.1, Overall empirical findings from the overall and sub-samples

<table>
<thead>
<tr>
<th>EMPIRICAL FINDINGS FOR OVERALL SAMPLE AND SUB- SAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHORT- TERM FINDINGS</td>
</tr>
<tr>
<td>CAR(-1,1)</td>
</tr>
<tr>
<td>OVERALL</td>
</tr>
<tr>
<td>SUB-SAMPLES</td>
</tr>
<tr>
<td>CASH</td>
</tr>
<tr>
<td>O. PAYMENT</td>
</tr>
<tr>
<td>DOMESTIC</td>
</tr>
<tr>
<td>CB</td>
</tr>
<tr>
<td>RELSIZE05</td>
</tr>
<tr>
<td>RELSIZEO5</td>
</tr>
<tr>
<td>QUOTED</td>
</tr>
<tr>
<td>UNQUOTED</td>
</tr>
<tr>
<td>RELATED</td>
</tr>
<tr>
<td>UN-RELALATED</td>
</tr>
<tr>
<td>1.41 %***</td>
</tr>
<tr>
<td>LONG- TERM FINDINGS</td>
</tr>
<tr>
<td>BHAR(12)</td>
</tr>
<tr>
<td>OVERALL</td>
</tr>
<tr>
<td>SUB-SAMPLES</td>
</tr>
<tr>
<td>CASH</td>
</tr>
<tr>
<td>O. PAYMENT</td>
</tr>
<tr>
<td>DOMESTIC</td>
</tr>
<tr>
<td>CB</td>
</tr>
<tr>
<td>RELSIZE05</td>
</tr>
<tr>
<td>RELSIZEO5</td>
</tr>
<tr>
<td>QUOTED</td>
</tr>
<tr>
<td>UNQUOTED</td>
</tr>
<tr>
<td>RELATED</td>
</tr>
<tr>
<td>UN-RELALATED</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Source: Own contribution
As seen from the above table, the announcement period returns (short-term wealth effects) are found to be strongly significant for all samples in the two- and three-day event windows – CAR(-1,1) and CAR(0,1). Only the quoted sub-sample has a p-value above 1 % and only weak significant. The 21-day event window CAR(-10,10) do not find strong results, and this are more or less expected, since the event window is much longer and includes ten days prior the event. These ten days were found to be insignificant by the CAR(-10,-1) estimation⁶. This finding highlights the fact, that there seems to be no significantly information leak in the market prior the acquisition announcement.

For all the two-sample t-tests, the reported significant levels comes from the samples individual test statistics (found in appendix 10.8). Their ‘average significance level’ are then inserted in the table below. The two-sampled t-tests calculations can be found on the attached USB-drive. The first sub-samples pair we look at are the samples relating to the payment method and the findings are shown in the table below:

Table 6.2.2, Comparing sub- samples: Payment Method

<table>
<thead>
<tr>
<th>Comparative Samples</th>
<th>CASH</th>
<th>OTHER</th>
<th>SAMPLE SIZE</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Size</td>
<td>1,637</td>
<td>461</td>
<td>1,176</td>
<td></td>
</tr>
<tr>
<td>Short Horizon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAR(-1;1)</td>
<td>1.23 % ***</td>
<td>1.42 % ***</td>
<td>1.14 % ***</td>
<td>0.2475</td>
</tr>
<tr>
<td>CAR(0;1)</td>
<td>1.13 % ***</td>
<td>1.23 % ***</td>
<td>1.09 % ***</td>
<td>0.3383</td>
</tr>
<tr>
<td>CAR(-10;10)</td>
<td>0.68 % ***</td>
<td>1.42 % **</td>
<td>0.27 % ***</td>
<td>0.0509</td>
</tr>
<tr>
<td>Long Horizon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BHIAR(12)</td>
<td>2.60 % ***</td>
<td>0.98 %</td>
<td>3.24 % ***</td>
<td>0.0557</td>
</tr>
<tr>
<td>BHIAR(24)</td>
<td>7.21 % ***</td>
<td>7.83 % **</td>
<td>6.97 % ***</td>
<td>0.3389</td>
</tr>
<tr>
<td>BHIAR(36)</td>
<td>9.84 % ***</td>
<td>13.29 % **</td>
<td>8.48 % ***</td>
<td>0.3849</td>
</tr>
</tbody>
</table>

Note: *** Significant at a 1 % level, ** Significant at a 5 % level, * Significant at a 10 % level based on average
Source: Own contribution

⁶ The specific datasets that investigate CAR(-10,-1) concludes, that the ten day-event window prior the event (L₁) find no abnormal returns for the acquiring companies, stating that this period, do not perform differently from the estimation period (L₁). Please check the different t-tests performed in these sheets and the CAR(-10,-1) investigation, since this event period are not described elsewhere in this paper.
As seen in the cash sample, it is observed that many of the variables are strongly significant individually. But when it comes to test if the two sub-groups are significantly different from each other based on the parameters then only CAR(-10,10) is found to be weak significant in the test. In relevance to the hypothesis H3 we can affirm that cash acquisition seems superior to other payment types in this event window, as the cash sub-sample yield returns on 1.42 % compared to the other payment group of 0.27 % and is significantly from each other through the two-sampled t-test, but only found in the short-run. For the long-run, it is not possible to say they are significantly different from each other’s though. The next comparison is between the domestic and the cross-border sub-samples.

Table 6.2.3, Comparing sub-samples: Location

<table>
<thead>
<tr>
<th></th>
<th>DOMESTIC VERSUS CROSS- BORDER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWO SAMPLED T-TEST</td>
</tr>
<tr>
<td>GROUP</td>
<td>OVERALL</td>
</tr>
<tr>
<td>SAMPLE SIZE</td>
<td>1,637</td>
</tr>
<tr>
<td></td>
<td>677</td>
</tr>
<tr>
<td>SAMPLE SIZE</td>
<td>1,637</td>
</tr>
<tr>
<td></td>
<td>677</td>
</tr>
<tr>
<td>SHORT HORIZON</td>
<td></td>
</tr>
<tr>
<td>CAR(-1;1)</td>
<td>1.23 % ***</td>
</tr>
<tr>
<td></td>
<td>0.86 % ***</td>
</tr>
<tr>
<td>CAR(0;1)</td>
<td>1.13 % ***</td>
</tr>
<tr>
<td></td>
<td>0.85 % ***</td>
</tr>
<tr>
<td>CAR(-10;10)</td>
<td>0.68 % ***</td>
</tr>
<tr>
<td></td>
<td>0.01 %</td>
</tr>
<tr>
<td>LONG HORIZON</td>
<td></td>
</tr>
<tr>
<td>BHAR(12)</td>
<td>2.60 % ***</td>
</tr>
<tr>
<td></td>
<td>1.37 %</td>
</tr>
<tr>
<td>BHAR(24)</td>
<td>7.21 % ***</td>
</tr>
<tr>
<td></td>
<td>6.35 % ***</td>
</tr>
<tr>
<td>BHAR(36)</td>
<td>9.84 % ***</td>
</tr>
<tr>
<td></td>
<td>7.90 % ***</td>
</tr>
</tbody>
</table>

Note: *** Significant at a 1 % level, ** Significant at a 5 % level, * Significant at a 10 % level based on average
Source: Own contribution

As seen in the above table our results are impressively significant as well, only CAR(-10,0) and BHAR(12) from the cross-border sub-sample find no significant results. The remaining measures however find strong significance (most of them) individually. The two-sampled t-test shows, that only CAR(-1,1) is significant on a 0.1 critical alpha level (weak significant). We document that domestic outperforms cross-border in the sample in both the short- and the long run. This is accordance with the H4 hypothesis and confirm the empirical evidence, that domestic acquisitions should be superior to the cross-border counterpart. Given the sample is drawn from the European Union perspective, our conclusion is, that
the acquiring shareholders from the domestic sample outperform the acquiring shareholders from the cross-border sample, and therefore creates more value from their domestic deals. In relation to the other two-sampled t-test results, we only find a significant link between the three-day event periods between the groups, where the domestic sample yields a cumulated abnormal return of 1.48% compared to the 0.86% found in the cross-border sample.

**Table 6.2.4, Comparing sub-samples: Relative size**

<table>
<thead>
<tr>
<th>RELATIVE SIZE LOW VERSUS RELATIVE SIZE HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPARING SAMPLES</td>
</tr>
<tr>
<td>TWO-</td>
</tr>
<tr>
<td>SAMPLE</td>
</tr>
<tr>
<td>GROUP</td>
</tr>
<tr>
<td>OVERALL</td>
</tr>
<tr>
<td>SAMPLE</td>
</tr>
<tr>
<td>T- TEST</td>
</tr>
<tr>
<td>RESULTS</td>
</tr>
<tr>
<td>P-</td>
</tr>
<tr>
<td>SAMPLE SIZE</td>
</tr>
<tr>
<td>SHORT</td>
</tr>
<tr>
<td>HORIZON</td>
</tr>
<tr>
<td>CAR(-1:1)</td>
</tr>
<tr>
<td>CAR(0:1)</td>
</tr>
<tr>
<td>CAR(-10:10)</td>
</tr>
<tr>
<td>LONG</td>
</tr>
<tr>
<td>HORIZON</td>
</tr>
<tr>
<td>BHAR(12)</td>
</tr>
<tr>
<td>BHAR(24)</td>
</tr>
<tr>
<td>BHAR(36)</td>
</tr>
</tbody>
</table>

Note: *** Significant at a 1% level, ** Significant at a 5% level, * Significant at a 10% level based on average Source: Own contribution

As seen from the relative size low / high groups, we find strongly significant results. From the relative size low sub-sample, we find cumulative abnormal returns above 3% in all the announcement periods. Very strong results are

*As proxy for size a comparison of the total assets for the acquirer and target is made. This is the relative size used in the study. There is various ways to construct a proxy, and admitted this is the simple form, and it could be constructed of several factors such as the inclusion of number of employees, sales and market cap besides total assets as seen in the study no. 3 by Renneboog (2007) - all information that has been stored in the dataset as well. To construct a dummy variable of relative size in the simple form the relative size values are grouped into two groups; a low relative size group and a high relative size group. After an inspection of the data, the limit for the groups was set to be under or over 5times the size acquirer respectively, where the size parameter is the total assets from the bidder and target company respectively. Note: the relative size low group contain the target companies where the acquirers did not have total assets values 5times more than the target total assets values, and are therefore more 'equally-sized' companies. There can be name confusion here, as readers might think the relative size low contains the deals where the companies are not similar. The excel files show exactly how this is done for the sub-samples.
likewise found in the performed two- sampled t- tests concluding there exist strong evidence on that these two samples (sub- samples) are significantly different from each other. However this picture seems to change in the long- run, as the wealth impact slows down its pace and the relative size high group actually starts in the second year in BHAR(24) to perform better than the relative size low peer. Here the relative size high sample finds ARs on 7.61 % whereas the relative size low sample only finds 4.23 % ARs, meaning the effect from the relative size low actually becomes a bit mean reverting in the second year. In contrast to the announcement period in CAR(-1,1) with cumulative abnormal returns on 3.25 % and 0.97 % respectively, the post- announcement clearly shows that the table has turned in the long- run for these samples. There, the relative size low sample suffer a significantly loss in terms of value creation compared to the sample peer (less value creating in the long- run than the relative size high sample).

The sub- samples are however not individually strong significant in the long- run, leading us to find it hard to trust these converging values. In perspective to the hypothesis H5 stated in chapter three, we confirm the empirical evidence in the short- run only, and we affirm that size really does seem to matter (that a low size difference is seen as more value- creating in the short- run). Nevertheless, we only confirm it partly, as it only seems to be valid in the short- run. This is due to the sample with the relative size high begins to outperform from the second year. In year three, the relative size high group initially yields abnormal returns on 10.84 % compared to 2.22 % in the relative size low group. If it is problems relating to integration of the more similar- sized companies in the long- run (culture etc.), we do not know, but surely there seems to be problems regarding the value- creation in the long- run for this group. So from the hypothesis H5 acquisitions where there exist a low relative size between the bidder and target are more value creating than a high relative size between the two in the short- term, we confirm, but in the long- run the relative high size group outperform this group and become more value creating than the relative size low sample.
Table 6.2.5, Comparing sub-samples: Listed effects

<table>
<thead>
<tr>
<th>SAMPLE SIZE</th>
<th>QUOTED</th>
<th>UNQUOTED</th>
<th>T-TEST</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHORT HORIZON</td>
<td>1,637</td>
<td>127</td>
<td>1,510</td>
<td></td>
</tr>
<tr>
<td>CAR(-1:1)</td>
<td>1.23 %</td>
<td>1.16 %</td>
<td>0.76 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>***</td>
<td>**</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>CAR(0:1)</td>
<td>1.13 %</td>
<td>1.08 %</td>
<td>0.74 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>***</td>
<td>*</td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>CAR(-10:10)</td>
<td>0.68 %</td>
<td>2.23 %</td>
<td>0.22 %</td>
<td></td>
</tr>
<tr>
<td></td>
<td>***</td>
<td></td>
<td>**</td>
<td>0.0033</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>***</td>
<td>SIGNIFICANT</td>
</tr>
</tbody>
</table>

LONG HORIZON

| BHAR(12)    | 2.69 %  | 11.22 % | 4.85 % |         |
|             | ***     | *       | ***    |         |
| BHAR(24)    | 7.21 %  | 14.73 % | 9.91 % |         |
|             | ***     | ***     | ***    |         |
| BHAR(36)    | 9.84 %  | 12.06 % | 12.18 %|         |
|             | ***     |          | **     | 0.2811  |

Note: *** Significant at a 1 % level, ** Significant at a 5 % level, * Significant at a 10 % level based on average

The next sample shows the quoted-unquoted groups (sub-samples). Here we observe in the short-run, the quoted deals seem to outperform the unquoted deals with cumulative abnormal returns for the three-days event period on 1.16 % compared to the unquoted deals which finds CAR(-1,1) values on 0.76 %. However, we are not able to find a statistical difference between these two results from the two-sampled t-tests. Only in CAR(-10,10) we find significant results, but we fail to find the quoted sub-sample individually significant, leaving us not to put trust in the two-sampled t-test. Thus in the long-run, the two first years—BHAR(12) and BHAR(24)—find significant results. Here the quoted group yields abnormal returns on 11.22 % and 14.72 % whereas the unquoted groups find ARs on 4.85 % and 9.91 % respectively. In year three, the unquoted group begin to slightly outperform the quoted group, with ARs on 12.18 % compared to 12.06 % from the quoted sample. But as the abnormal returns are almost similar in the year three, the two-sampled t-test fails to find a significant difference for this year. In relation to the hypothesis H6 Acquisitions where the target is unquoted are more value-creating than to the quoted counterpart in the short- and long-term, we do in fact not confirm this finding, as our samples show that the quoted targets perform better in the short-run. This finding is also true after the first year, where the quoted group yields abnormal return on 11.22 % and 4.85 %, strongly significant in our two-sampled t-test and likewise, also true in the

Source: Own contribution
second year with ARs on 14.74% and 9.91%. Only in the third year, the hypothesis seem to be confirmed, where the two groups (sub- samples) yield almost similar ARs. Again, the ARs from this year cannot be determined significantly different from each other through the statistical test. As result, it seems like the groups find similar AR performance in year three, where the unquoted group seems to slightly outperform the quoted group, but in the time prior, the quoted group seems to be the most value creating of the two.

Table 6.2.6, Comparing sub- samples: Relativeness

<table>
<thead>
<tr>
<th>RELATED VERSUS UNRELATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPARING SAMPLES</td>
</tr>
<tr>
<td>TWO- SAMPLED</td>
</tr>
<tr>
<td>GROUP</td>
</tr>
<tr>
<td>SAMPLE SIZE</td>
</tr>
<tr>
<td>SHORT HORIZON</td>
</tr>
<tr>
<td>CAR(-1:1)</td>
</tr>
<tr>
<td>CAR(0:1)</td>
</tr>
<tr>
<td>CAR(-10:10)</td>
</tr>
<tr>
<td>LONG HORIZON</td>
</tr>
<tr>
<td>BHAR(12)</td>
</tr>
<tr>
<td>BHAR(24)</td>
</tr>
<tr>
<td>BHAR(36)</td>
</tr>
</tbody>
</table>

Note: *** Significant at a 1 % level, ** Significant at a 5 % level, * Significant at a 10 % level based on average
Source: Own contribution

In the related- unrelated groups, we find mixed results. For the short- term CAR(-1,1), the unrelated group seems experience a wealth creation on 1.41% whereas the related group gets a cumulative abnormal return on 1.17%. In the two- day event window, the related group perform better with cumulative abnormal returns on 1.20% compared to 0.86%. This result indicates that the unrelated group, the day prior, capture more wealth creation than the related group and initially the findings from the two- and three day event periods, and yield different results. Likewise, for the long- term study, it is hard to conclude anything from the two samples, as they more or less find similar abnormal returns. The related group finds 3.02% in the first year, 7.03% in the second year and 9.82% in the third year whereas the unrelated group finds 1.07%, 7.89% and 9.98% respectively. As the ARs almost follow each other through the years,
it becomes difficult for our two-sampled t-test to find any significant results. In fact, all the tests fail to find any significant difference between the two samples. In hypothesis H7 we stated that related acquisitions are more value-creating than the unrelated counterpart. We are unable to conclude that the related acquisitions perform significantly better than the unrelated acquisitions, leaving us with no solid recommendations to the acquiring shareholders for this deal characteristic.

Several statistical tests have throughout the section been conducted. The reason to include a range of tests is, that the tests control for each other. In total, our parametric tests found more significant results than the non-parametric tests. However, we also found problems with the normality assumption, why we in severe cases should put more reliance on the non-parametric tests as a recommendation. We have tried to increase the individual sample sizes as much as possible to reduce the risk of committing a type I error (reject a true hypothesis) (MacKinlay, 1997). With the above findings in mind, we can now begin conducting our multiple linear regression in the cross-sectional study to determine how the abnormal return is influenced by the different variables.

6.3 Cross-sectional study

The multiple linear regression model goes beyond the statistical tests as it reveals the exact correlation between the abnormal return and the variables of interest. Thereby it is possible to define the impact on the abnormal return from the factors.

Recall the regression model stated from the methodology chapter:

\[ Y = bX + u \]

Where \( Y \) was the dependent variable, \( X \) was a vector of the deal and company-specific variables including the constant, \( beta \) was a vector of their significance in relation to the dependent variable and \( u \) was the error term. To be more specific about deal and company specific variables, we include cash, domestic, related, relsize, quoted as independent variables and EMU, overlap, dist, culdist, rd_expen, aemp, btm, roa, ros, mcap, y1997, y1998... y2010 (÷ 2007 as basis year) as control variables. The inclusion of control variables does not only help us account for spurious relationships, they also measure the impact of any given variable above and beyond the effect of other variables. A full description of the variables can be found in appendix 10.10. Our distance- and cultural distance control variables are very unique variables in this study, as they calculate the distance (in km) between the target and the acquirer and likewise score the cultural distance between the two company countries.

Before running any regression, we screen the data for outliers through various of box- and scatter plots. The screening can be found in appendix 10.11. Practitioners would argue, that elimination of outliers would contribute to a more reliable regression. However, as many of them are found to be a legitimate part
of the data, we do not trim or winsorize them. Likewise, we could have used the regression techniques of forward- and backwards elimination, pulling out variables until only the significant were left behind from the re-estimated model. But as explained in the literature, there is no need to hide the estimation results by re-estimating the model, since the insignificant results are valuable information as well (Verbeek, 2008). One thing we do care about is to treat variables that are multicollinear, as they will result in individually significant variables in the model, and we do care about the assumptions. Regarding the assumptions to the regression model, we find problems with the normality assumption, as the long-run abnormal returns seems to stack heavily in frequency around the mean. This is reflected through high kurtosis values and the frequency histograms as found in the appendix 10.12. This initially signify, that the distribution look rather leptokurtic than normal. However, as backed up by the central limit theorem, we might argue these are approximately normally distributed regardless of the underlying assumption (Rice, 2005). In relation to our parametric and non-parametric tests in the previous section, this broken condition might indicate, we should put more reliance on the non-parametric tests, as the especially the post-announcement abnormal returns seem to be affected.

In appendix 10.12 the initial regression output can be found for CAR(-1,1). The rest of the regression output from the statistical software can be found on the USB-drive. Table 6.3.1 shows the estimated coefficients from the overall sample regression and their associated F-statistic, $R^2$ and adjusted $R^2$ for the different event periods:

*Table 6.3.1, Findings from the regression*

<table>
<thead>
<tr>
<th></th>
<th>SHORT-TERM FINDINGS</th>
<th>LONG-TERM FINDINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CAR(-1,1)</td>
<td>CAR(0,1)</td>
</tr>
<tr>
<td>C</td>
<td>.015</td>
<td>.005</td>
</tr>
<tr>
<td>CASH</td>
<td>-.001</td>
<td>-.001</td>
</tr>
<tr>
<td>DOMESTIC</td>
<td>.002</td>
<td>.003</td>
</tr>
<tr>
<td>RELSIZELOW</td>
<td>.022***</td>
<td>.023***</td>
</tr>
<tr>
<td>QUOTED</td>
<td>-.009</td>
<td>-.007</td>
</tr>
<tr>
<td>RELATED</td>
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<td>.002</td>
</tr>
<tr>
<td>R^2</td>
<td>.048</td>
<td>.037</td>
</tr>
<tr>
<td>ADJ R^2</td>
<td>.028</td>
<td>.020</td>
</tr>
<tr>
<td>F-statistic</td>
<td>2.688</td>
<td>2.217</td>
</tr>
</tbody>
</table>

Source: Own contribution
Both $R^2$ and adjusted $R^2$ are shown in the table as $R^2$ do not ‘punish’ the inclusion of additional model variables. Additionally, the $F$-statistic give a statistical proof whether the increase in $R^2$ was significant or not as a result of including the variables in the model. Overall, the five deal and company characteristics of interest, have difficulties providing significant effects and the regression model does not seem to explain much of the variance from these. Thereby concluding, that the abnormal returns are influenced by many other factors.

Our $R^2$ finds values on 3.3 – 6.6 % and the adjusted $R^2$ 1.7 – 4.9 %. Compared to other studies that attempt to explain the proportion of the sample variance in the abnormal returns, our proposed model finds around the same proportions of variability, even though the values may seem low. The best predictor of abnormal returns in the announcement period is found to be from our relative size- dummy variable, but we fail to find significant results in the long- run. This outcome is rigorously in line with the empirical evidence, as neither of the reported studies find a significant relationship between the relative size and the post- acquisition performance (Palepu, 1992; Moeller, 2003 and Powell, 2005). The inferences from the variable here are that relative size low deals have a positive effect in the short- run, while the opposite is found in the long- run (negative effect), however, not statistically significant. The other variables are found insignificant and as shown in the table, there are no consistent inferences. These findings are fragile and do not yield much significant insight into the variables as anticipated.

In sum, our regression evidence suggest, that there is a strong significant effect from the size variable. The other factors does however not, explain a significant proportion of the model variance. Nevertheless, it should be noted, that many of the control variables were found to be highly significant, emphasizing their inclusion in the model.
7. Discussion and further work

This chapter will critically discuss and assess the chosen methodological framework and thereby concern the general validity and reliability of the study. To discuss the apprehended methodology is an essential part of any empirical study. We already mentioned our concerns regarding the validity of the various databases in the data review section (section 1.3.2). The applied methodological approach followed the guidelines and recommendations from the empirical evidence.

We document from the European Union perspective, that there seems to exist a bit consistency between the short- and long- run studies. In fact, it was not anticipated that we would find a positive wealth creation to the bidder shareholders in the long- run, as most studies (almost all) reported that the shareholders would inquire a significant loss (value destruction). However, these studies were not drawn from the European Union perspective, but from the UK (and US) experience. The only reference study we had was the study from Campa and Hernando (2004), but they only covered the European Union in the time period 1998 – 2000. They reported a significant wealth contribution on one percent to their bidder shareholders in a two- month (only) event window. So did our long- term study show the real development from the European Union? Well, it might do. However again, there exist a bit uncertainty with the model chosen and we acknowledge, that we could have chosen different pathways than the one applied.

The most critical path we took was to go further with the market index as reference benchmark in the long- term study. A handful papers warned against this and reported several biases (e.g. new listing bias, re- balance bias and skewness bias). Nevertheless, to use the market index as benchmark was in fact one of the options – valid option – in the BHAR framework (see Kothari, 2004). we found it to be beyond the scope of the paper to identify one or more peer companies for up to 4,703 deals, and we were too persistent to eliminate valid deals in the data, that initially took months (almost five) to collect as all these should contribute to a solid foundation in the European Union perspective.

Furthermore, our study did not take into account whether the acquiring companies have had a presence in the target countries market before the acquisition, and could influence especially the potential synergy gains in the cross- border deals. Moreover, we did not exclude companies who engaged in new acquisitions in the following three years after, but instead made a dummy called ‘overlap’ in the regression (again, to keep the sample size high). As much of the empirical evidence implied that acquisitions should be value destructive for the bidder in the long- run, we initially concluded, that additional acquisitions should incur more damage to the acquiring company (or on the same level). We tested this link, and our dummy found a strongly significant negative effect from event overlaps in year three.

In a future study, it could have been interesting to implement a reference portfolio to see, whether the long- term results would have developed differently, or they still seems to be value creating for the bidders in the long- run.
8. Conclusion

In this final chapter, we try to shed light on the common characteristics from the European Union bidders as they through the years, 1997 – 2010, acquired target companies in the market. Not all of them realized hefty returns from engaging in acquisitions. Some were found value-enhancing while others were found value-destructive for the acquiring shareholders. The ones who performed well should remain in investors’ portfolios and the value-destructive should be avoided. The empirical evidence from the European Union is without doubt scarce in nature, and as most of the other studies looked at Europe, UK and US (still where the Europe studies were underrepresented), we found it interesting to analyze this perspective. With the right toolbox to the investors, we might come to some characteristics in the market, which in the last sixteen years of coverage, seem to have been profitable for the acquiring companies. To test the wealth impact in the short- and long-run, ten statistical tests were implemented in our framework.

Our paper documents a positive cumulative abnormal return to bidders of 1.23 % around the three-day event window. This evidence proved to be strongly significant in all seven test statistics conducted in the short-term study. We did also find, that the European Union bidders experienced a positive abnormal buy-and-hold return on 9.84 % in the three-year time horizon. This particular finding was not anticipated as most of the empirical literature finds a negative post-announcement impact to these bidders. Whether this arises from biases from the market index as benchmark or through the data selection, we do not know, but we do know the literature is scarce from the European Union perspective. To further examine the procedure used for the data selection, we took a sample with less restrictive selection criteria’s and found that the overall positive abnormal return to bidders then was 1.01 % surrounding the three-days event window. Likewise, this sample found all the seven test statistics to be strongly significant and the positive abnormal buy-and-hold return was found to be 8.75 % in the three-year time horizon. This larger sample included 4,703 acquisitions, but lacked in terms of the needed accounting data for the cross-sectional study, why the overall sample – and not the overall sample (enlarged) – was employed in the later study. That this sample only found a small drop in the CARs and BHARs, but else yielded similar results, indicate some form of robustness in our overall sample.

To identify value-enhancing and value-destructive factors, we split our sample into respective sub-samples. In specific, we put them into following groups: 1) cash and other payments 2) domestic and cross-border 3) relative size low and high 4) quoted and unquoted and last 5) related and unrelated deals and the findings from the sub-samples delivered interesting results.

First, we document that deals exclusively paid in cash, seem to outperform the other payment group as they performed significantly better. This result was only though significant in the 21-day announcement period.

Second, we document domestic acquisitions to be more value-creating than the cross-border counterpart. This was found significant in the three-day announcement period.
Third, we document size does matter. The relative size groups were found to be significantly different, suggesting that where the target company initially was closer to the acquirer size (relative size low) performed much better than acquisitions where the diversity was bigger (relative size high). This was only found in the short-run.

Fourth, we document that unquoted targets unlikely perform better than the quoted targets, which they (else) did generally in the empirical evidence. This finding was significant in the 21-day announcement period and in the one- and two-year time horizon. In sum, these findings seem to go against the findings from the literature.

Fifth, and last, we fail to document anything in the related acquisitions, where the deals concentrate on the same industry, as the two groups (related—unrelated), did not perform significantly different from each other in any of the event windows.

We provided evidence on the exact development of the different event periods for the sub-samples in section 6.2, and additionally, appendix 10.8 presented all of the ten test statistics related to these groups. Even though, we would like to present all the results and hypothesis, they would require an enormous amount of space in this chapter, why only the main highlights are found here (please be patient and turn some pages).

To supplement the study, a cross-sectional model was conducted to conclude on the magnitude from the variables of interest. From the multiple linear regression, we document our relative size-dummy to be strongly significant in the two- and three-day announcement period, but only semi-strong significant in the 21-day event window. The inferences from the variable here is, that relative size low deals have a positive effect in the short-run, while the opposite is found in the long-run, however, not statistically significant. We also document fragmented findings from the quoted-dummy, as it was significant in the 21-day announcement period and in the 1-year post-announcement period. The other variables are found insignificant with no consistent inferences. These findings are fragile and do not yield much significant insight into the variables as anticipated. Likewise, we were only able to explain a small amount of the variance, as the adjusted \( R^2 \) yielded values in the range of 1.7% – 4.9%. As an endnote to the regression model, we found several of the control variables to be highly significant, emphasizing their inclusion in the model. Unfortunately, none of our variables of interest from the sub-samples.

As a final comment, our methodical approach is found to be in alignment with previous research and update the evidence from the European Union. A key finding from the paper is that we document a wealth creation in the short- and long-term for the bidders in the European Union. It is our sincere hope, that we provided a framework that could help investors screen the outperforming bidders in the market. In addition, the framework could help potential acquiring shareholders, to determine the fate of the previous sixteen years of M&A from this specific perspective. Likewise, it can provide information to various agencies within the European Union.
9. References

9.1 Books


9.2 Articles


International mergers and acquisitions activity since 1990: recent research and quantitative analysis, pp.51-78.


Mukherjee, S. et al. (2005); Mars-Venus Marriages: Culture and Cross-Border M&A; Working paper*


