MAXIMIZING SHAREHOLDER VALUE OR MANAGEMENT'S PRESTIGE? An analysis of takeovers of U.S. firms by cross-listed and cross-delisted European acquirers

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Abstract
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PURPOSE OF THE STUDY

The purpose of this thesis is to address the lack of empirical research on the transatlantic acquisition performance of European companies that are cross-listed in the U.S.. Furthermore, this thesis is the first piece of empirical research studying the relation between M&A activity and cross-delisting. The objective of the study is two-fold. First, I examine the acquisition performance of cross-listed companies by comparing them to acquisitions by a control group. Second, I compare the acquisition performance of the cross-listers before cross-listing, during cross-listing, and after cross-delisting.

DATA

The data used in this study is gathered from multiple sources. First, a database of cross-listed companies is collected by searching the websites of the U.S. exchanges, Thomson Financial SDC database (SDC), and Citigroup ADR service for European companies that have been cross-listed in the U.S. between 1.1.1980 and 31.12.2008. This yields a sample of 281 cross-listed companies. Dow Jones STOXX Total Market Index for Europe is used as a control group. Second, I search SDC for M&A transactions by the cross-listers and the control group during the time period 1.1.1996 - 31.12.2008. This gives a sample of 105 acquisitions by cross-listed companies prior to cross-listing, 451 acquisitions during cross-listing, 72 acquisitions after cross-listing, and 951 acquisitions by the control group.

I manually collect a unique database of publication hits in Business Week, Financial Times and Wall Street Journal around the announcement of an M&A transaction from LexisNexis database. Furthermore, I gather price data for individual companies, market indices, and money market funds from Thomson Financial Datastream database (Datastream). Data on financial statements, country of incorporation, and industry is from Thomson Financial Worldscope. I also collect exchange rate data from Datastream.

RESULTS

My results indicate that European companies that are cross-listed in the U.S. get a lot more visibility in prestigious business publications than their non-cross-listed peer companies. This suggests that the management of the cross-listed companies are likely to suffer from hubris. Furthermore, the regression analysis shows that there is a negative relation between the attained publicity and gains from acquisitions. In line with this notion, the cross-listers seem to make worse acquisitions than their non-cross-listed peers, however, the result is not consistently significant and appears to relate to other characteristics of the transactions, such as firm size and company status of the target firm.

Cross-delisting seems to significantly decrease visibility in prestigious business publications. Furthermore, the results also indicate that M&A performance increases after cross-delisting, however, the result is not consistently significant. Same effect is visible in the regression analysis, but also it is statistically insignificant. There are no differences in acquisition performance or publication hits prior to cross-listing and during cross-listing.

KEYWORDS

M&A, merger, acquisition, takeover, cross-listing, cross-delisting, hubris, publication hits, cumulative abnormal return, CAR, cross-border

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TUTKIELMAN TAVOITTEET

Tämän tutkielman tavoitteena on tutkia Yhdysvaltoihin tuplalistautuneiden eurooppalaisten yritysten menestystä transatlanttisissa yrityskaupoissa. Aiheesta ei ole toistaiseksi olemassa yhtäkään empiiristä tutkimusta. Tämä tutkimus on myös ensimmäinen, joka tutkii yrityskauppamenestyksen ja tuplalistautumisen purun välistä suhdetta. Vertaan tutkimuksessani tuplalistautuneiden yritysten ja kontrolliryhmän yrityskauppamenestystä sekä tutkin tuplalistautuneiden yrityskauppamenestystä ennen tuplalistautumista, sen aikana sekä tuplalistautumisen purun jälkeen.

LÄHDEAINEISTO

Tässä tutkimuksessa käytetty lähdeaineisto on kerätty useista eri lähteistä. Otos 281 eurooppalaisesta yrityksestä, jotka ovat tuplalistautuneet Yhdysvaltoihin 1.1.1980 ja 31.12.2008 välillä, on kerätty yhdysvaltalaisten pörssien internetsivuilta, Thomson Financial SDC –tietokannasta (SDC) sekä Citigroup ADR –palvelusta. Vertailuryhmän muodostavat Dow Jones STOXX Total Market Index for Europe –osakeindeksin yritykset. Tuplalistaaja- ja kontrolliryhmän yrityskaupat ovat haettu SDC:stä aikaväliltä 1.1.1996 - 31.12.2008. Otoksessa on 105 yrityskauppaa ennen tuplalistautumista, 451 yrityskauppaa tuplalistautumisen aikana, 72 yrityskauppaa tuplalistautumisen purun jälkeen ja 951 kontrolliryhmän yrityskauppaa.

Olen kerännyt manuaalisesti uniikin tietokannan Business Week-, Financial Times- ja Wall Street Journal –lehtien julkaisuista, jotka käsittelevät otokseni yrityksiä. Yksittäisten yritysten, osakeindeksien, rahamarkkinarahastojen ja valuuttojen hinta-aineisto on kerätty Thomson Financial Datastream tietokannasta. Tilinpäätöstiedot sekä yritysten perustiedot ovat Thomson Financial Worldscope –tietokannasta.

TULOKSET

Tulosteni mukaan tuplalistautuneet yritykset saavat kontrolliryhmään verrattuna huomattavasti enemmän näkyvyyttä liike-elämän julkaisuissa yrityskauppojensa ympärillä, mikä viittaa tuplalistautuneiden yritysten kärsivän mahdollisesti ns. hybris-ongelmasta. Lisäksi regressioanalyysin tulokset osoittavat, että yritysten saaman julkisuuden ja yrityskaupan tuottojen välillä on negatiivinen suhde. Tutkimuksen tulokset antavat viitteitä siitä, että Yhdysvaltoihin tuplalistautuneiden yritysten yrityskaupat ovat huonompia kuin kontrolliryhmän. Tulos ei kuitenkaan ole johdonmukaisesti merkitsevä ja näyttäisikin johtuvan muiden piirteiden eroista ryhmien välillä kuin yritysten tuplalistaus –statuksesta.

Tulosten valossa näyttää siltä, että yritykset saavat huomattavasti vähemmän julkisuutta tuplalistautumisen purun jälkeen. Lisäksi tulokset tukevat teoriaa, jonka mukaan yritykset tekevät parempia yrityskauppoja tuplalistautumisen purun jälkeen. Tämä tulos ei kuitenkaan ole johdonmukaisesti merkitsevä. Regressioanalyysin tulokset ovat samansuuntaisia, mutta nekään eivät ole tilastollisesti merkitseviä. Tuplalistautuminen ei näytä vaikuttavan yritysten saamaan julkisuuteen eikä yrityskauppamenestykseen.

AVAINSANAT

Yrityskauppa, yritysosto, fuusio, tuplalistautuminen, tuplalistautumisen purkaminen, hybris, julkaisumäärät, kumuloituneet ylituotot, rajanylittävä

CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 Introduction

On November 18, 1996, Deutsche Telekom (DT) cross-listed its shares to the New York Stock Exchange. One of the key motivations for DT to seek a dual-listing was to ease acquisitions in the U.S.. And acquire they did. Between 2000 and 2007, the company acquired Powertel, Voice Stream, PCS One, Sun Com Wireless and a number of smaller wireless service providers frequently using its cross-listed stock as a method of payment.

The most notable of the acquisitions, the Voice Stream deal, valued at $29.6 billion, was announced on July 24, 2000, after lengthy negotiations between the management of the two companies. Voice Stream was making losses at the time of the acquisition, yet, DT paid $7.8 billion in cash and 829 million DT shares for it, giving the former shareholders of Voice Stream an ownership stake of 22% on the acquirer.

The management of both companies praised the takeover as the deal of the century and the transaction made to the front page of Wall Street Journal and Financial Times and was also extensively covered by Business Week. The management of DT seemed to be very eager to give interviews and, as can be easily seen from Figure 1, the company received substantial coverage in important business publications surrounding the transaction.

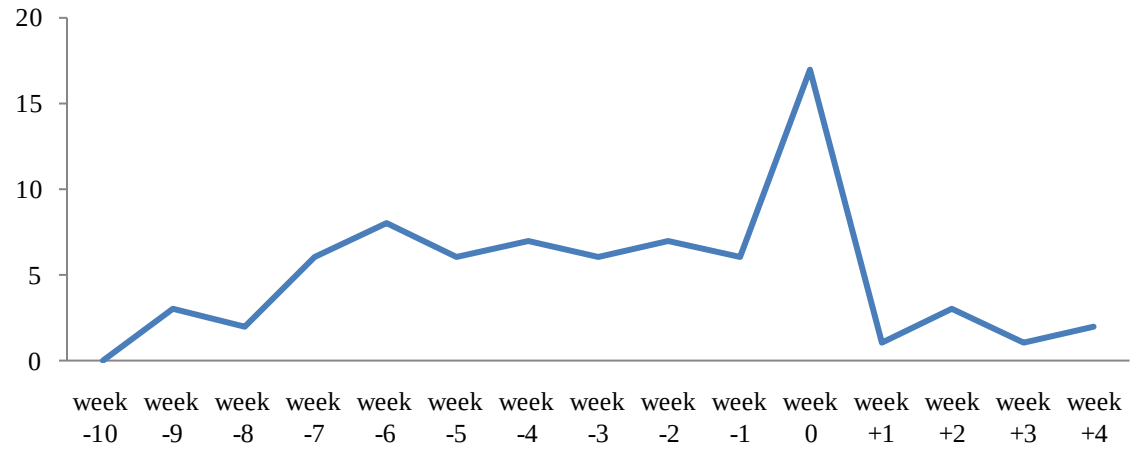

Figure 1: Visibility of Deutsche Telekom in prestigious business publication surrounding the acquisition of Voice Stream This figure shows the weekly number of times Deutsche Telekom was mentioned in the headline of Business Week, Financial Times, or Wall Street Journal as in LexisNexis database. Week 0 is the week when Deutsche Telekom announced the acquisition of Voice Stream, i.e. the week which includes the dates between July 24, 2000 and July 30, 2000.

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When one listened to the management of DT describing the attractiveness of the deal, the transaction seemed to have a perfect strategic fit and to be reasonably priced, if not a bargain. Ron Sommer, DT's chairman and CEO at the time, commented the deal by saying: "This transaction is a unique opportunity to enter the U.S. wireless communications market, one of the most attractive in the world." The shareholders, however, interpreted the deal as more likely to boost the management's ego rather than the company's earnings and the stock price fell 11.8% on the announcement date destroying over \$16.4[1] billion of shareholder wealth…

Even though the acquisition of Voice Stream by DT was particularly large, it, nonetheless, resembled quite a bit other acquisitions made with cross-listed stock. A large number of these deals got a lot of publicity in the financial media, although they were perceived by the market as being shareholder value destructive. Clearly, something is not right in the acquisitions made by the cross-listed companies and the phenomenon should be carefully assessed.

1.1 Background and motivation

During the 1980s and 1990s, thousands of foreign companies cross-listed their shares to the U.S. stock exchanges, but in the 21st century, this trend seems to have reversed, as the amount of cross-delistings from the U.S. have grown dramatically, driven primarily by the more stringent regulation[2] and the relaxation of deregistering requirements.[3] The motivation for cross-listing has been studied extensively (for a detailed summary, see Pagano, Panetta, and Zingales, 2002; Karolyi, 2006), but the knowledge on cross-delistings is more narrow (see, e.g., Doidge, Karolyi, and Stultz, 2008). Also cross-border mergers and acquisitions have become increasingly common during the last few decades, and the wealth effects of these transactions have been widely studied (see, e.g., Cakici, Hessel, and Tandon, 1996). Yet, there is not a single study on the relation between cross-listing and cross-delisting, and the returns from M&A transactions.

A number of academic papers as well as more practitioner oriented publications hypothesize on the relation between cross-listing and M&A activity (see, e.g., Eiteman, Stonehill, and

[1] Three day cumulative abnormal return estimated with the market model.

[2] Enactment of Sarbanes-Oxley legislation on July 30, 2002 as a response to such corporate and accounting scandals as Enron and Worldcom. Sarbanes-Oxley introduced major changes to the regulation of financial practice and corporate governance causing substantial costs of compliance.

[3] "On March 21, 2007, the Securities and Exchange Commission (SEC) adopted Exchange Act Rule 12h-6, which makes it easier for foreign private issuers to deregister and terminate the reporting obligations associated with a listing on a major U.S. exchange." Doidge et al. (2008)

Moffett, 1998; Pagano et al., 2002; Citigroup, 2005; JP Morgan, 2005). These authors suggest that cross-listing is likely to facilitate mergers and acquisitions, as cross-listed stock is considered as a more viable acquisition currency than foreign equity for cross-border M&A transactions where the target is a U.S. company. Consequently, the authors suggest that the decision to cross-list might be motivated by the desire to obtain this M&A currency. The literature argues that cross-listed stock is better M&A currency than foreign equity partially due to rational issues, such as the restrictions on the amount of foreign equity some U.S. institutional investors can hold in their portfolios, and the increased trading and holding costs of foreign equity, but also on a more behavioral factor, i.e. on the home bias of U.S. investors. This bias causes irrational preference of domestic over foreign equity.

Being the first to empirically study the relation between cross-listing and M&A activity, Tolmunen and Torstila (2005) show that cross-listed firms are substantially more active in acquiring U.S. targets than are their domestically listed peers. Furthermore, the authors show that after cross-listing, the average size of the deal increases sharply as does the percentage of acquisition volume financed with equity. As it is commonly held that large and equity-financed transactions have questionable consequences for shareholder wealth, it would be important to study the wealth effects of transatlantic M&A transactions by cross-listed firms.

Furthermore, the overall understanding of the relation between cross-listing and M&A activity is rather limited. In addition to the paper by Tolmunen and Torstila (2005), this topic is only dealt with in one other study (Burns, Francis, and Hasan, 2007), which mostly concentrate on premiums paid in acquisitions. Neither study investigates the relation between cross-delisting and M&A, as cross-delistings were relatively rare prior to the change in deregistering requirements in 2007. Hence, the number of observations of M&A transactions by cross-delisted companies was too small for meaningful analysis at the time of drafting of these two articles. However, as the number of cross-delistings has grown dramatically, it is now more meaningful to study the topic.

In this thesis, I seek to shed light on the obvious shortcomings in the existing literature on cross-listing and M&A activity by providing the first empirical evidence on the relation between acquirer wealth effects and cross-listing. In addition, I examine the effect of cross-delisting on the acquisition performance of a company, thus, providing insights on a previously totally unknown topic, i.e. the relation between cross-delisting and M&A activity.

The sample which I use comprises U.S. acquisitions by European companies during the time period 1996 - 2008. Using my Sample 1, consisting of 451 acquisitions by 281 European companies that were cross-listed in the U.S. at the time of the acquisition, and 951 acquisitions by a control group, I find that the cross-listed companies are much more prominent in prestigious business publications in the year leading to an M&A deal than their non-cross-listed peers, as the average number of publication hits are 30.6 and 12.8, respectively. The difference between the groups is also statistically significant, indicating that cross-listers are likely to suffer from greater hubris. The difference also remains robust after controlling for the size of the company, and it seems that cross-listing status increases publication visibility by an average of 11.4 hits. Hence, for example a cross-lister with a market cap of $100 million attains on average the same amount of publicity than a non-cross-listed company with a market cap of $40 billion. Furthermore, my regression analysis indicates that publication hits seem to have a negative relation with acquisition performance, which is in line with the view that the prominence of a company acts as a proxy for managerial hubris. Consistent with these results, the acquisitions by the cross-listed bidders seem to be somewhat less value creative than those by the control group, average cumulative abnormal returns (CARs) being 0.19% and 0.55%, respectively. The difference, however, is not consistently statistically significant.

The regression analysis shows that the difference in CARs between cross-listers and the control group is mostly driven by other deal characteristics than the cross-listing status, such as acquirer size and company status of the target firm, i.e. cross-listers fare worse in M&A partly because the companies themselves are larger and they acquire more frequently public companies than the control group. Nonetheless, also the regression analysis provides some very weak evidence hinting that cross-listing has a decreasing effect on the returns from M&A, even after controlling for a large number of deal, acquirer, and target characteristics. However, after controlling for self-selection, the coefficient for the cross-listing dummy is clearly insignificant. The effect of cross-listing to gains from acquisitions seems to be unaffected by firm size.

Sample 2 consists of 451 acquisitions during cross-listing, 105 takeovers prior to cross-listing, as well as 72 acquisitions after cross-delisting. The analysis of Sample 2 reveals that there are no significant differences in the publicity received by the sample companies prior and during

cross-listing. It also seems that there are no significant differences in the acquisition performance of the companies prior to and during cross-listing.

In line with the hypothesis, the results indicate that the publicity gotten after cross-delisting collapses from the high levels experienced during cross-listing. The average number of publication hits after cross-delisting is a meager 6.8, which is also statistically different from the publicity gotten during cross-listing. Furthermore, the acquisition performance of a company seems to improve after it cross-delists. The average CAR jumps to a significant 0.72%, which is also statistically significantly different from the gains experienced during cross-listing under some specifications. Also regression analysis hints that cross-delisting might be positively related to returns from acquisitions, even when we control for other potential sources of value creation. However, potentially due to the small sample size, the results are statistically insignificant. There does not seem to be any significant differences in the effect of cross-delisting to gains from acquisitions for companies of different size.

1.2 Research question

This thesis seeks to study the relation between European companies cross-listing to the U.S. stock exchanges, and the subsequent wealth effects of the cross-border M&A transactions carried out by these companies. I form my hypothesis around the following research problem:

> ***Research problem: Are U.S. acquisitions by European companies cross-listed in the U.S. value creative?***

In the empirical part of this paper, I seek to verify nine hypotheses relating to the above question. My first hypothesis claims that cross-listed companies are more prominent in prestigious business publications surrounding their transatlantic acquisitions than non-cross-listed companies. This is likely to be the case, as I argue that the management of cross-listed companies are more prone to hubris and, thus, to irrational empire building, than the management of their non-cross-listed peers. My second hypothesis states that there is a negative relation between the number of publication hits and gains from acquisitions. As my third hypothesis, I pose that the acquisition performance of the cross-listers is worse than the acquisition performance of their non-cross-listed peers. My fourth hypothesis suggests that the difference between the bidder returns of cross-listed and non-cross-listed companies is larger for larger companies, who have greater agency issues. My fifth and perhaps the least

interesting, although very important hypothesis from the viewpoint of the shareholders of the cross-listing company, states that acquisitions by cross-listed companies are wealth destroying. My sixth hypothesis states that cross-listing has a decreasing effect on the returns from acquisitions. The seventh hypothesis, which is perhaps the most interesting due to the absence of earlier studies on the matter, is that returns from M&A transaction increase after a company cross-delists. This is likely to be the case as cross-delisted companies are deprived from the viable M&A currency and, hence, they are not inclined to use it and can be more rational in their acquisitions. My eighth hypothesis states that cross-delisted companies get less publicity in prestigious business publications than cross-listed companies. As my ninth hypothesis, I argue that the effect of cross-delisting is stronger for larger companies.

1.3 Contribution to the literature

This thesis contributes to the prior finance literature by being, to the best of my knowledge, the first academic research paper to assess the relative and absolute acquirer wealth effects of cross-border M&A transactions by cross-listed companies. Especially important is the comparison of wealth effects of M&A transactions during cross-listing and after cross-delisting, as I am the first to study the relation between cross-delisting and M&A activity. Furthermore, by collecting a unique database of publication hits, I am able to shed light on the relative prominence of cross-listed companies in prestigious business publications as well as on the relation between gains from acquisitions and visibility in these publications.

In addition, as companies choose to cross-list and cross-delist, they are not just random draws from the population, and self-selection in my sample must be controlled for. Thus, I am able to assess the relative importance of the factors related to these decisions, most importantly to the cross-delisting decision, which has so far been studied by only two authors: Witmer (2005) and Doidge et al. (2008). On a less important note, as I also control for a large number of wealth creation factors in my regression analysis, I am able to evaluate many of the existing theories on acquirer wealth creation with a recent data set on a transatlantic setting.

1.4 Limitations of the study

The data and methodology used in this thesis pose two important limitations. First, the scarcity of available data causes problems in the generalization of the results presented in the

study. Although the number of cross-lister and control group acquisitions is sufficient to make meaningful generalizations, the 105 acquisitions by the cross-listed companies prior to the cross-listing, and the 72 acquisitions by the cross-listed companies after cross-delisting are clearly suboptimal. However, the limitations set to the transaction characteristics, such as transaction size, are important in increasing the reliability of my results and, hence, quality of observations is more important than quantity.

Second, the usage of event study methodology to account for the wealth effects of M&A transactions has been criticized due to the use of short-term event window. It has been suggested that a short-term market reaction might send a distorted signal on the true value creation of a corporate transaction as investors often make mistakes in the valuation of an M&A deal. However, due to the more severe shortcomings of long-term wealth effect methodologies, event study methodology is widely used in prior literature to study the wealth effects of M&A. Hence, in the absence of a better methodology, I employ the event study approach, which also makes my results easily comparable to those of earlier research.

1.5 Definitions of key concepts

Merger

Mergers are corporate transactions that are conducted to combine to companies. Most often the deals are first negotiated by the management of the two companies, and the ultimate merging decision is subject to shareholder acceptation.

Tender-offer

An offer made directly to the shareholders of a company to tender (sell) their shares at a specific price.

Takeover

A term used to refer to both mergers and tender offers. Used interchangeably with acquisition in this thesis.

M&A

The term mergers and acquisitions, M&A, is frequently used to refer to corporate transactions, both tender offers and mergers.

Acquirer

The party in M&A transactions who is perceived as buying the other party, although in mergers this is often difficult to determine. Used interchangeably with bidder throughout this thesis.

Target

The party in M&A transactions who is perceived as being bought by the acquirer.

ADR

American depositary receipts, ADRs, are derivative instruments issued by a U.S. depositary bank to the underlying shares in a non-U.S. company. ADRs can be publicly quoted on a major U.S. stock exchange (Level II and Level III ADRs), or they can be OTC listed (Level I and SEC Rule 144A ADRs). Level I ADRs are traded through NASDAQ's Pink Sheets, whereas Rule 144A ADRs are traded through the trading system PORTAL.

Cross-listing

Cross-listing refers to the listing of a company's shares to a foreign stock exchange after the company's initial listing, i.e. if the company initially goes public via a foreign stock exchange, this is not regarded as a cross-listing, but rather a direct listing.

Cross-delisting

Cross-delisting is defined as the discontinuation of the company's cross-listing quotation.

1.6 Structure of the study

The rest of the study is organized as follows. Section 2 presents the most important previous research on cross-listings and cross-delistings. Section 3 discusses the key research on motives and wealth effects of domestic and cross-border M&A transactions. Section 4 presents the research problem and hypotheses, which I seek to verify in the empirical part of my paper. Section 5 describes the data and methodology used in this study. Section 6 presents the empirical findings of the thesis. Finally, section 7 summarizes the findings of my thesis and relates them to the earlier literature on cross-listings and cross-border M&A, as well as discusses some possible areas for future research on the relation between returns from M&A and cross-listing and cross-delisting.

2 Cross-listing to foreign exchanges

In addition to home market listing, thousands of companies around the world have also sought to list their shares in a foreign exchange since the beginning of the 1980s. Cross-listing one's shares is a costly procedure, yet, a large number of companies have chosen to opt for this route. In this chapter, I present the extant literature on cross-listing to foreign exchanges. First, I discuss the trend of cross-listing and delisting, then I elaborate on accessing U.S. capital markets, I go on discussing the motivation and costs of cross-listing, and I conclude the chapter by assessing the relation between cross-listing and M&A activity.

2.1 Trend of cross-listing and delisting

Cross-listing to a foreign exchange was still relatively rare prior to the 1980s. However, during the 1980s, it gradually started to become increasingly common for a stock quoted company to seek a dual-listing from a foreign market, usually being an overseas market. The motives for this decision are discussed in detail in section 2.3. During the 1980s and 1990s, hundreds of companies around the world cross-listed their shares to foreign exchanges (Dobbs and Goedhart, 2008). Many of these companies chose to cross-list their shares in the U.S. capital markets. However, as evidenced in Figure 2 on the next page, the amount of annual foreign listings to New York Stock Exchange (NYSE) has seized to grow, and has in fact declined since 2002, yet still amounting to roughly 450 foreign listings annually.

As can be seen from Figure 2, the turning point in the number of foreign listings to the NYSE, and to the U.S. exchanges in general, was the enactment of Sarbanes-Oxley legislation on July 30, 2002. This law, also known as the Public Company Accounting and Investor Protection Act of 2002, was a response to such corporate and accounting scandals as Enron and Worldcom. Sarbanes-Oxley introduced major changes to the regulation of financial practice and corporate governance. These changes imposed substantial costs of compliance to companies listed in the U.S. and, hence, depressed the number of companies seeking a listing in the U.S.. In fact, Litvak (2008) showed that the cross-listing premia, defined as the difference in the Tobin's q of a cross-listed company and a non-cross-listed company matched with country of origin and propensity to cross-list, actually decreased after the adoption of Sarbanes-Oxley and has remained at these lower levels ever since.

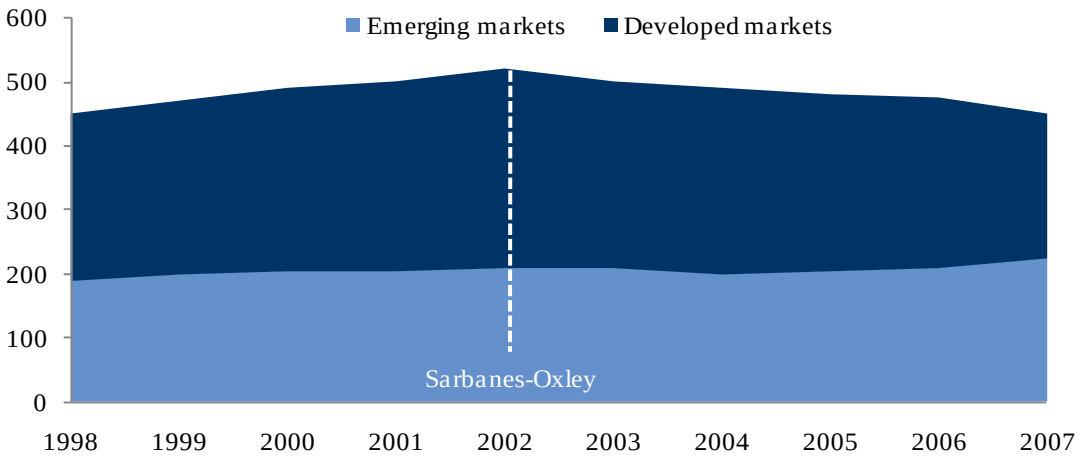

Figure 2: Foreign listings on the New York Stock Exchange This figure shows foreign listings on the New York Stock Exchange between 1998 and 2007. The listing are divided into emerging market and developed market issuers according to the country of origin of the listing company. Source: Dobbs and Goedhart (2008)

Delistings from the U.S. stock exchanges were very rare in the 1980s, but during the 1990s a number of companies chose to terminate their cross-listing in the U.S.. However, the number of companies cross-delisting was only a fraction of those that cross-listed in the U.S. during the same period. Nonetheless, after the enactment of Sarbanes-Oxley, the number cross-delistings from the U.S. stock exchanges by companies from developed nations overrun the number of cross-listings. Hence, the number of foreign companies from developed nations listed in the U.S. stock exchanges started to fall somewhat, but not yet substantially.

It is very probable that the number of companies that would have liked to delist their shares from the U.S. exchanges after the enactment of Sarbanes-Oxley was a lot larger than the actual amount of delistings that were seen at the time. This is due to the fact that until quite recently, it was very difficult for a U.S. cross-listed company to delist from the U.S. exchanges. It was possible to delist in theory, but in practice the delister would not be able to terminate their obligations, such as reporting, imposed on the company when it first cross-listed in the U.S. (Doidge et al., 2008). In fact, firms were able to delist their shares from the exchanges, but substantial obstacles were placed in deregistering their shares. And when the shares could not be deregistered, the foreign firms would still have to adhere to the tight reporting requirements as specified in the original SEC filing. The relaxation of these stringent requirements, however, was quite often the reason, why a company was likely to seek for a delisting in the first place.

All of this changed with a new rule (Exchange Act Rule 12h-6) adopted by the SEC on March 21, 2007. This rule made it easier for a foreign firm to deregister its shares, so that it would seize to have any obligations towards SEC or the U.S. exchange. Foreign companies were given the possibility to deregister their shares if less than 5% of the total global trading of their shares took place on U.S. exchanges. As a consequence, it is now much more realistic for those cross-listed in the U.S. to consider taking the step of deregistration. (Doidge et al., 2008)

According to Doidge et al. (2008), 59 firms immediately announced they would deregister as the new Exchange Act Rule 12h-6 was passed. Also Dobbs and Goedhart (2008) note that from May 2007 to May 2008, 35 large European companies announced that they would delist their shares from U.S. exchanges, including such household names as Air-France KLM, Bayer, British Airways, Danone and Fiat. Also Finnish Metso, Stora Enso and UPM-Kymmene delisted their shares during this period.

Studying the reasons for cross-delisting, Doidge et al. (2008) found that delisted firms experienced substantially slower growth and lower stock returns than other U.S. listed foreign firms in the years preceding the decision. The authors conclude that foreign companies cross-list their shares in the U.S. to raise capital at the lowest available cost to finance growth, and when those opportunities disappear, a listing becomes less valuable, and firms are more likely to deregister. As now most of the companies that wanted to get out from the U.S. stock exchanges, but were unable prior to 2007, have probably already delisted their shares, it is interesting to see where the number of foreign companies cross-listed in the U.S. exchanges will develop in the future.

Case: Stora Enso

I will conclude this section by discussing the motives of Stora Enso to cross-list in the NYSE in the first place, and to later delist its shares from the U.S.. Stora Enso, a Finnish paper, packaging, and forest products company with global revenues around EUR 11 billion (2008), cross-listed in the NYSE on September 1, 2000. The company cited the following reasons for its decision to cross-list: providing a trading location for new North American shareholders attained through the acquisition of Consolidated Papers on February 22, 2000, improving the share price, and easing acquisitions. Only roughly seven years later on December 7, 2007, Stora Enso applied for a delisting from the NYSE with the following motives: delisting

reduces costs and complexity, eurozone provides liquid and well-functioning capital markets, and trading volumes in the U.S. accounts for less than 5% of the worldwide average daily volume of Stora Enso. It seems that Stora Enso was seeking to cut its costs as it viewed the U.S. listing redundant as financial markets had become more global and liquidity available in the eurozone was sufficient for the company. Many companies that have subsequently delisted from the U.S. are likely to have had similar motives.

2.2 Accessing the U.S. equity capital markets

Company can seek a quotation on a U.S. exchange either as a direct listing to the exchange or through a cross-listing. In addition to listing to an exchange, a company can also opt for private placement or OTC quotation. In this section, I present the methods of accessing the U.S. capital markets starting with direct listing and going on to cross-listing and other non-direct ways of listing.

2.2.1 Direct listing

Direct listing to U.S. exchanges without prior listing to other exchanges is possible to also companies outside the U.S.. In practice, however, very few companies outside U.S. or Canada opt for this route (Foerster and Karolyi, 1999), and those companies are likely to originate from tax havens and are often acquisition vehicles. In order to list on a U.S. exchange, a company must fulfill a number of requirements regarding number of shareholders, financial performance, and company valuation (NYSE web pages, 2008). Generally, a company must have a large number of shareholders in the U.S. before listing, the company must have been profitable for three years in a row, and it has to be of sufficient size. The exact values for these benchmarks vary by market place, which can be NYSE, the former American Stock Exchange nowadays called NYSE Alternext U.S. (AMEX) and National Association of Securities Dealers Automated Quotations (NASDAQ). After listing in one of these exchanges, a company will have to comply with U.S. GAAP requirements, which are likely to be more stringent than the regulations in the home country of the issuer. As direct listings to U.S. amongst European companies are rare and the specific topic of this thesis is cross-listings, I now go on to discuss the practice of cross-listing and other non-direct ways of accessing the U.S. capital markets.

2.2.2 Cross-listing

Cross-listing in the U.S. is usually carried out through American Depositary Receipt (ADR) programs. ADRs are derivative instruments issued by a U.S. depository bank and are created through the deposit of common shares in the issuer's home market. ADRs confer to their holders the same dividend and voting rights as the underlying shares, and trade in the U.S. like regular U.S. securities, although a small fee will have to be paid to the depository bank for each trade and for the cashing of dividends (Pagano et al., 2002). ADRs are usually sponsored, i.e. they are issued by a bank with the issuer's consent. However, also unsponsored ADRs exists, such as those of the UK based company Anglo American's ADRs, which are issued in NASDAQ by Citigroup and JP Morgan amongst others, without the consent of Anglo American. The ratio of ADRs to underlying securities can be decided by the issuer and, hence, need not be 1:1, although this is the most common procedure. Also the number of ADRs is not fixed, as brokers can create ADRs to meet demand by depositing additional home market shares by the depositary banks.

ADR programs are categorized into four different types: Level I, Level II, Level III and SEC Rule 144A private placements (see Table 1 for summary of their characteristics).The most common way to cross-list in the U.S. is to file for a Level II ADR listing. A Level II ADR program entails listing of the company to NYSE, AMEX, or NASDAQ. In Level II programs, no new shares are issued and, hence, no new capital is raised as existing shares are used to satisfy investor demand and liquidity. Because Level II ADR securities are listed or quoted on a major U.S. exchange, Level II ADRs reach a broad universe of potential shareholders and increase the issuer's visibility through reporting in the financial media (JP Morgan, 2005). Level II ADR programs require only partial reconciliation for financials according to U.S. GAAP, however, when combined with full SEC registration, even Level II programs are relatively burdensome to the listing company. (Citigroup, 2005)

Level III ADR programs, on the other hand, are in other ways quite similar to Level II programs, but they entail a public offering of new shares into the U.S. market. Due to the nature of the Level III program being quite similar to an IPO, this ADR type requires that the issuer files more numerous documents with the SEC and commits to more stringent reporting requirements than in the Level II programs (see Table 1 for details). According to JP Morgan (2005), Level III ADR programs have a high profile and are followed closely by the financial

Table 1: American depositary receipt (ADR) program levels

This table summarizes the key features of different ARD programs. NYSE refers to New York Stock Exchange, NASDAQ refers to National Association of Securities Dealers Automated Quotations, and AMEX refers to the former American Stock Exchange nowadays called NYSE Alternext U.S.. QIBs stands for qualified institutional buyers.

	Level I	**Level II**	**Level III**	**144A Private placement**
Objective	Broaden investor base with existing shares	Broaden investor base with existing shares	Raise capital with new issue, broaden investor base	Raise capital and broaden shareholder base within QIBs
Trading location	OTC Pink Sheet Trading	NYSE, NASDAQ or AMEX	NYSE, NASDAQ or AMEX	U.S. private placement market via PORTAL
SEC registration	Form F-6	Form F-6	Form F-1 and F-6	None
U.S. Reporting requirements	Exemption under rule 12g3-2(b)	Form 20-F annually	Form 20-F annually, F-2 and F-3 for subsequent offerings	Exemption under rule 12g3-2(b) or agree to provide info on request
U.S. GAAP requirements	No reconciliation required	Only partial reconciliation for financials	Full reconciliation for financials	No reconciliation required
Indicative timing (from advisor appointment to launch)	7 weeks	7 weeks	14 weeks	7 weeks

Sources: Citigroup (2005) and JP Morgan (2005)

press and other media through the capital raising phase, often generating significant visibility for the issuer. This, in addition to the need for capital, is likely to be one of the key reasons, why a company would opt for a Level III listing instead of Level II.

In addition to Level II or III ADR programs, a foreign firm can also access the U.S. equity markets through Level I ADR offering or SEC Rule 144A private placement. Level I ADRs are a quick way to seek a quotation and develop shareholder base in the U.S.. Although not publicly quoted, Level I ADR programs are available for retail investors in the OTC market through NASDAQ's Pink Sheets (JP Morgan, 2005). No new capital is raised through Level I ADR programs and the programs are not subject to the requirements of U.S. GAAP. However, also the visibility generated through a Level I listing is quite limited.

A Rule 144A ADR is the quickest, easiest, and most cost-effective way to raise capital in the U.S.. Under 144A, new shares are created and privately placed with institutional investors

with the possibility of resale of the securities to Qualified Institutional Buyers (QIBs) in the U.S.. The definition of a QIB is an institution that either manages at least $100 million in securities, or is a registered broker-dealer that owns or invests, on a discretionary basis, $10 million in securities of non-affiliates. Rule 144A ADRs can be traded through PORTAL, which is an automated system that provides security descriptions and pricing information for 144A issues. The liquidity of these securities, however, is somewhat limited as the bid-ask spread in Portal is quite wide. (JP Morgan, 2005)

2.3 Motivation for cross-listing

A number of papers have assessed the motivation for a company to cross-list outside its home markets (see Karolyi, 2006, for a recent summary). In this part, I present the key prior studies on the most documented benefits of cross-listing to the listing company. I have divided the benefits in two categories, 1) raising capital and 2) lowering the cost of capital. Although currency for M&A is a clear motivation to seek a cross-listing it is discussed later on as a standalone part due to its importance to the thesis. I also, when practical, elaborate on the development of the benefits, which I present in this section. However, a number of authors (see, e.g., Zingales, 2007) suggest that U.S. equity markets have lost some of their competitive edge not due to shrinking benefits of cross-listings, but due to towering costs.

2.3.1 Capital raising

The most common reason for equity issues in general is the need to raise funds for investment and cross-listings are no exception. Baker, Nofsinger, and Weaver (2002) document that out of their sample of 193 ADR issues in NYSE, 71% raised equity in the year following the issue. Pagano et al. (2002) suggest that the motive to cross-list for capital raising is highest when there are significant financial constraints in the home market of the cross-lister. The authors also note that cross-listing for capital raising is likely to be the case when the cross-lister is a fast growing company, or a company that has already exhausted its debt capacity. It might also be the case that debt raising in U.S. becomes easier after cross-listing as cross-listed companies have to commit to strict disclosure and corporate governance standards of U.S. GAAP. Sarbanes-Oxley has further increased this effect. On the other hand, the implementation of IFRS 3 and other stringent accounting systems outside the U.S. have decreased the gap between the strictness of U.S. and overseas accounting standards.

2.3.2 Decreased cost of capital

On top of raising additional funds, firms are documented to cross-list in order to lower their cost of capital. For example, discussing cross-listing Chaplinsky and Ramchand (2000) note that "The search for new capital markets - and lower costs of capital - is an ongoing search for most firms." Stapleton and Subrahmanyam (1977) and Alexander, Eun, and Janakiramanan (1987) provide a theoretical base on how the cross-listing of shares across segmented markets would lead to a higher intrinsic market price and lower cost of capital. A number of academic papers (Alexander, Eun, and Janakiramanan, 1988; Foester and Karolyi, 1993; Lau, Diltz, and Apilado, 1994; Miller, 1999; Errunza and Miller, 2000) have documented a return pattern consistent with this view. There are a number of potential factors that might decrease the cost of capital of a cross-listed firm, and in this subsection, I present each of them in turn.

Increased investor base

Cross-listing increases a firm's investor base, which enhances the firm's risk sharing and thus lowers its cost of capital (see, e.g., Lombardo and Pagano, 1999; Stulz, 1999; Bancel and Mittoo, 2001; Martin and Rey, 2000). More specifically, Karolyi (1998) documents that cross-listers seem to experience a reduction in their home market beta. This implies that riskier firms with higher cost of capital should reap greater benefits from cross-listing.

According to JP Morgan (2005), investor base is likely to increase through a cross-listing, because many institutional investors are not allowed to hold foreign equity, but when a foreign company is cross-listed in a domestic exchange, it becomes possible to invest in these shares. Institutional investors are likely to welcome this possibility as it enables them to diversify more efficiently especially geographically, but possibly in some cases also across different industries. It is also important to note that trading costs of investing in domestically listed equity, be it depositary receipt or common stock, as opposed to foreign equity are likely to be substantially lower for both institutional and individual investors. Pagano et al. (2002), also note that reduction in the cost of converting dividends to domestic currency is likely to be an important benefit of investing in ADRs as opposed to foreign equity.

Investing in foreign equity can also be disadvantageous due to limited amount of information available on foreign companies, as indicated by Gehrig (1993), Kang and Stulz (1994), and Brennan and Cao (1997). Merton (1987) takes this idea somewhat further in his 'awareness hypothesis', which basically entails total ignorance of foreign investment opportunities by

investors. Pagano et al. (2002) conclude that cross-listing alleviates information asymmetries by making more abundant, timely and transparent information available for local investors. Furthermore, Pagano et al. believe that the benefits of increased amount of information do not concern only equity investors, but the company might also be able to gain access to cheaper debt financing after cross-listing. It is important to note, however, that although information asymmetries between developed European companies and U.S. investors still exist, they have decreased dramatically during the last two decades due to enhanced flow of information. The rise of internet and the enactment of more stringent corporate governance and disclosure requirements in Europe have greatly contributed to this development.

Empirical evidence on the relation between cost of capital and increased shareholder base is provided by Foerster and Karolyi (1999), who show that the share price of a cross-lister rises more at the time of a cross-listing when it is accompanied by a greater expansion of the shareholder base. Also Miller (1999) finds evidence indicating that the price reaction to a cross-listing is positively correlated with the increase in the shareholder base. Furthermore, Miller notes that the price reaction is also positively linked to barriers of capital flows, a view which is supported by Foerster and Karolyi (2000).

Enhanced liquidity

Another potential source of value creation in cross-listing is enhanced liquidity of the company's equity, as overseas exchanges may be able to provide superior liquidity when compared to the home market. It actually seems that enhanced liquidity is one of the key motives of cross-listing as a market survey by Mittoo (1992) shows that 28% of the managers surveyed cite increased liquidity as the primary reason for cross-listing in the U.S.. The effect on liquidity is likely to be largest when the domestic capital market of the cross-lister is underdeveloped and, thus, better microstructure for liquidity production is available overseas.

The empirical evidence on the effect of cross-listing to liquidity seems to be mixed at best. Some studies (see, e.g., Kadlec and McConnell, 1994; Noronha, Sarin, Saudagaran, 1996; Foerster and Karolyi, 1998) indicate that the competitive pressure from another exchange as well as the greater turnover related to a wider shareholder base may enhance liquidity in the home market by decreasing bid-ask spread and increasing trading volume. However, Pagano (1989) and Madhavan (1995) suggest that liquidity might also suffer in cases of high market fragmentation. Domowitz, Glen, and Madhavan (1998) find evidence consistent with this

view by using a sample of Mexican companies issuing ADRs. Domowitz et al. show that liquidity actually suffers both domestically and in the foreign market, if intermarket linkages are poor. Surveying the broad amount of literature on the effect of cross-listing to liquidity, Karolyi (1998), on the other hand, concludes that cross-listers typically experience narrowing of the bid-ask spread and increase of trading volume on their home market. However, the author also notes that the extent to which liquidity is improved depends on the proportion of the total trading volume the new market captures, as well as on the possible trading restrictions imposed on foreigners in the stocks of the cross-listers before cross-listing.

The 'time zone' hypothesis by Pulatkonak and Sofianos (1999) seeks to clarify when cross-listing is likely to increase trading volume the most. Pulatkonak and Sofianos suggest that the closer the exchange of cross-listing, the more the trading volume in that exchange eats into the domestic turnover of the cross-lister. The empirical findings of Pagano et al. (2002) support the time zone hypothesis, showing that cross-listing by a European company on another European exchange decreases domestic turnover on average by 8%, where as no significant change in domestic turnover is found when the cross-listing is in a U.S. exchange. The most probable explanation for the time zone hypothesis is the fact that when the distance to the cross-lister exchange is large, the company extends its trading hours substantially, thus providing investors the possibility to trade almost around the clock.

Halling, Pagano, Randl, and Zechner (2006) provide evidence indicating that the enhancing effect which cross-listing has on liquidity might be a think of the past. The authors note that the allocation of trading on a cross-listers stock has shifted dramatically from the foreign stock exchange to the domestic market since the 1980s. Zingales' (2007) view on cross-listings as a liquidity provider can be summarized as "Electronic and globalized trading might have eroded the unique advantage of trading in New York."

Improved disclosure and corporate governance

Cross-listing in a foreign exchange entails that the cross-lister must commit itself to a new set of disclosure and corporate governance requirements. These new requirements can be a significant burden, as will be discussed in section 2.4, but they can also be a source of value creation. When a company voluntarily chooses to subject itself to more stringent requirements, its disclosure and corporate governance are likely to improve, thus, benefiting the shareholder of the company as agency costs of external finance are decreased. Consistent

with this view, Stulz (1999) shows that companies from countries of low legal standards can attain a lower cost of capital by subjecting themselves to more stringent requirements. Consequently, it seems that companies seek to signal their quality by listing in tightly regulated capital markets (Cantale,1996; Fuerst, 1998).

Exchanges seem to engage in a 'race to the top' regarding disclosure requirements as they compete for new listings by adopting more stringent disclosure and corporate governance standards (Huddart, Hughes, and Brunnermeier, 1999). If this is the case, it would seem justified to assume that the effect of tighter regulation to the cross-listing decision would have diminished over time. Supporting this view Fanto and Karmel (1997) state that the improvements in European regulatory standards, most notably the adoption of IRFS, seem to have attracted U.S. based institutional investors to stocks listed exclusively in Europe.

Increased analyst coverage

Cross-listing to foreign exchanges has also been shown to increase analyst coverage and media attention (see, e.g., Baker et al., 2002; Lang, Lins, and Miller, 2003). Increased analyst coverage decreases information asymmetries and the increased visibility is likely to be welcomed especially by institutional investors. However, quite recently Dobbs and Goedhart (2008) argue that after correcting for the impact of size, cross-listed European companies are covered by only roughly two more analysts than those that are not cross-listed, while the average number of analyst covering the 300 largest European companies is 20. Also analyst activity in the U.S. in general has dropped notable in recent years (Kolasinski, 2006), perhaps partly due to the Global Research Settlement enforcement agreement reached in 2003.

On the other hand, Blass and Yafeh (2001) provide evidence that the decision on the exchange of cross-listing might be affected by the location of analysts with superior knowledge of the industry. Consequently, cross-listers often tend to be high-tech oriented high-risk companies. This notion is consistent with the view that large stock markets are more suitable than banks to value innovative and fast growing high-tech companies (Allen, 1993).

Product market reputation – a reason or a product of cross-listing?

Product market reputation in the foreign market has been hypothesized to effect the cross-listing decision. According to one view, a company which has a high product market reputation in some market might be able to capitalize on this reputation by offering equity in

this market, as local investors as consumers already trust the firm (see, Pagano et al., 2002). However, it might also be that the causality is other way around, i.e. companies might seek to cross-list their shares to increase their visibility in the market with the intent of increasing their sales. Evidence on the link between product market reputation and cross-listing is presented by Saudagaran (1988), but the author fails to show the direction of the causality.

2.4 Costs of cross-listing

The literature on the benefits of cross-listing is extensive, however, substantial costs are also associated with cross-listing. Direct costs of cross-listing include for example legal, accounting and other advisory fees as well as the listing charges of the exchange. For example, in NYSE the initial listing fee is $150,000 - 250,000, depending on the number of ADRs issued. All and all, initial registration with SEC is likely to pose costs in the ballpark of $1 million in accounting, legal, printing and registration fees (Baker et al., 2002). In addition to the initial fee, there is also an annual fee, whose amount also depends on the number of ADRs issued, the minimum fee in NYSE being $38,000. For example, a foreign firm issuing 100 million ADRs in NYSE would face a $240,000 initial fee and $46,500 annual fee.

Although direct costs of cross-listing may be very substantial especially to small companies, the indirect costs of cross-listing are likely to be far greater than the direct costs. For example, Fanto and Karmel's (1997) survey on potential cross-listers to the U.S. markets indicates that the cost of complying with U.S. GAAP and the risk of litigation are the main costs of cross-listing. Also Mittoo's (1992) survey indicates that approximately 60% of the managers of cross-listing companies identified SEC reporting and compliance requirements to be the largest cost item. In a series of related studies, Saudagaran and Biddle (1992, 1995) show that the costs related to disclosure are the most significant variable affecting the choice of exchange to cross-list in. Furthermore, Saudagaran and Biddle (1995) show that the higher the disclosure requirements on a particular market, the less likely a company is to list there.

Zingales (2007) notes that the increased threat of litigation in the U.S. is a substantial cost for cross-listers, as directors can be held personally responsible for a number of issues, but these directors reap only a very tiny fraction of the benefits of cross-listing. This might create a serious agency problem, as cross-listing is likely to be the right course of action for a number of companies, but their directors choose to pass the chance in the fear of lawsuits.

2.5 Cross-listing and M&A

A number of authors, such as Pagano et al. (2002) and Eiteman et al. (1998), suggest that cross-listing might be motivated by the cross-lister's desire to obtain a currency for M&A transactions. Also JP Morgan (2005) concludes that "Mergers & acquisitions increasingly require the cross-border transfer of funds in today's global economy. Depositary receipts are the perfect structure to facilitate these transfers – ." Despite these predictions, there seems to be only a very limited amount of empirical studies on acquisitions carried out by cross-listed companies in the market of cross-listing. In this section, I present the few preceding studies.

First to study cross-listings and M&A activity was Tolmunen (2001). Later, his Master's thesis evolved into a co-written journal article (Tolmunen and Torstila, 2005), in which Tolmunen and Torstila study the effect of cross-listing on the acquisition behavior of a company. Their sample includes 547 European companies, of which 221 are cross-listed in U.S. exchanges and 326 are listed solely in their home markets. Studying acquisition performance by these firms in the time period 1996 - 2000, Tolmunen and Torstila show that cross-listed firms are significantly more active in acquiring U.S. companies than their domestically listed peers. This result holds even after controlling for a number of other variables commonly viewed as affecting acquisition likelihood. Furthermore, as companies choose to cross-list and, hence, are not random draws from the population, Tolmunen and Torstila also take into account self-selection in the sample and the results still remains robust.

Tolmunen and Torstila (2005) also examine the payment method used in transatlantic M&As. They find evidence supporting the view that cross-listed firms are more likely to use equity payment for larger transactions than their domestically listed peers, but this result seems to be caused by self-selection. Tolmunen and Torstila also study the effect of cross-listing to premiums paid in acquisitions, but they do not find any significant relation. Furthermore, Tolmunen and Torstila examine the acquisition behavior of cross-listed companies before and after cross-listing. Their results indicate that cross-listed firms are active acquirers in the U.S. before and after cross-listing and, hence, there is no support on the view that the likelihood of acquisition increases after cross-listing. However, it seems that after cross-listing companies start to make large acquisitions and pay higher portion of their M&A volume with equity. The total M&A volume financed with equity leaps from 23% before cross-listing to 43% in the first five years after cross-listing and to further 58% in years 6 or more. Also the mean

transaction size increases from $427 million to $1,118 million. The authors' results, therefore, imply that cross-listing enables firms to engage in large equity-financed M&A.

Burns (2004) examines the role of cross-listed stocks as an acquisition currency concentrating on the effect of cross-listing on premiums. The author studies the acquisitions behavior of 1,412 U.S., 94 cross-listed, and 144 foreign non-cross-listed acquirers in the time period 1984 - 2000, and finds that cross-listed firms often use equity to finance their M&A transactions with U.S. targets, whereas non-cross-listed acquirers primarily use cash. Furthermore, cross-listed firms using equity pay on average 10% less premium than non-cross-listed firms that pay with cash. However, Burns also finds that cross-listed acquirers use equity less frequently than U.S. acquirers. In addition, the author finds evidence that legal protection in the home country of the acquirer plays a role in the choice of payment method: cross-listed companies domiciled in countries with poor legal protection are less likely to use equity and they pay higher premiums than bidders from countries with better legal protection.

Burns et al. (2007) build on the paper by Burns (2004) with a broader sample of 149 cross-listed and 438 non-cross-listed bidders, and provide support for all Burns' earlier findings presented above. In addition, the authors suggest that while cross-listing reduces barriers to investment, it cannot completely subsume both the legal environment and the importance of financial intermediaries' monitoring. Hence, the authors argue that the extent of actual legal and regulatory bonding by cross-listers is perhaps not as comprehensive as is often assumed.

The papers by Tolmunen (2001), Tolmunen and Torstila (2005), Burns (2004) and Burns et al. (2007) are the sole empirical studies on the relation between cross-listing and M&A activity. None of these papers, however, examine the wealth effects of these deals, although Tolmunen and Torstila provide evidence that cross-listers often engage in large and equity-financed transactions, thus, having potentially dubious consequences for their shareholders. Furthermore, although Tolmunen and Torstila study the acquisition behavior of cross-listers also before cross-listing, there is not yet a single paper on the acquisition behavior of companies after they have cross-delisted. In the light of these two obvious shortcomings in the prior literature, there is a clear need for an empirical research paper on these matters.

In this chapter, I surveyed the prior literature on cross-listing to foreign exchanges. Having now covered the most important aspects of cross-listing, I can move on to discuss the theories and wealth effects of M&A transactions.

3 Motives and wealth effects of mergers and acquisitions

In this section, I present an overview of the most important earlier studies on M&A transactions. First, I introduce the studies related to motives for M&A in general, and then to cross-border transactions specifically. Then, I go on providing a summary of what various finance researchers have found out about wealth gains in domestic and cross-border M&A, as well as to what variables they attribute these gains and losses. I conclude the chapter by discussing the special characteristics of transatlantic M&A.

3.1 Motives explaining mergers and acquisitions

Previous research has presented several theories explaining why takeovers occur. The understanding of key theories is imperative also for the understanding of the specific topic of this thesis, i.e. transatlantic M&A. This section begins by addressing general motives for M&A and goes on discussing the specific motives for cross-border M&A. It is important to discuss separately the motives for cross-border M&A as these motives indicate why it might be the case that cross-border M&A is more value creative than domestic M&A.

3.1.1 General motives

Theories explaining M&A are usually categorized as 1) synergy and efficiency theories, 2) agency theories, and 3) hubris theories. In this section, I briefly go through extant literature on each of these theories. It should be noted here that various other theories, such as those related to wealth redistribution, merger waves and optimal size of the company, have been hypothesized to motivate M&A transactions. However, in this section, I concentrate on the three most important and most well documented theories.

Synergy and efficiency theories

Synergy and efficiency theories predict that M&A transactions are value creative as firms engage in M&A only when the value of the combined entity is more than the value of the two individual companies. This will be the case if the two companies have synergies, which can be mainly categorized as financial or operational. Synergies are likely to be the most frequently suggested reason for M&A by both academic research and top management of the acquiring companies. Empirical evidence shows that while cost synergies are mostly achieved

as planned, the vast majority of revenue synergies will not be realized (Christofferson, McNish, and Sias, 2004), which then decreases the estimated profitability of the transaction.

Bradley, Desai, and Kim (1983) find evidence supporting the view that tender offers occur as the bidding firm attempts to gain control of the target, and create value by implementing a higher-valued operating strategy. Higher value can be achieved as bidders utilize some specialized resource, such as more efficient management, economies of scale, improved production techniques, or the combination of complementary resources.

Agency theories

While efficiency and synergy theories predict gains from acquisitions, agency theories propose that M&A transactions are value destroying events, as managers pursue their own interest instead of trying to maximize shareholder wealth (Jensen and Meckling, 1976). This is made possible in public companies, where ownership and management are usually separated, and the shareholders have little or no possibility to efficiently monitor the management. In his seminal paper, 'Agency costs of free cash flow, corporate finance and takeovers', Jensen (1986) presents a theory, according to which managers choose to spend free cash flow to value destroying acquisitions instead of distributing the excess cash to the shareholders of the company. This happens because managers are often prone to so called 'empire building', as they are likely to feel more powerful, and get a higher remuneration, if they are able to expand the size of their company. Pike and Neale (2003) label such managerial takeover motives as the three Ps: power, prestige and pay. Empirical evidence on agency theory is presented by for example Morck and Schleifer (1990), who show that if private benefits to the management are particularly large, the managers might pursue shareholder value destroying acquisitions.

Although agency theory states that takeovers are caused by agency issues, takeovers can also be a cure to agency conflicts. Manne (1965) suggest that when managers are running a company sub-optimally, there is a large incentive for an outside acquirer to take over the company, and improve its operations. Manne states that a majority of mergers are likely to be caused by this 'market for corporate control'. Grossman and Hart (1980) share Manne's view in that takeovers can be seen as a managerial disciplinary device, but due to minority shareholders possibility to free ride the deal, Grossman and Hart suggest that we observe less M&A transactions than would be socially optimal.

Hubris

Whereas synergy and efficiency theory expects positive wealth effects from M&A and agency theory negative returns, hubris-theory, presented by Roll (1986) in his seminal paper, suggests that M&A transactions are a zero-sum game: target shareholders' gain is the bidder shareholders' loss. Roll suggests that there are in practice nonexistent synergies between most corporate combinations, and that the prevailing market price should reflect the full value of the firm under strong form market efficiency. The author states that the higher valuation of the target by the bidder might be caused by hubris as well as excessive self-confidence by the decision makers. Roll suggests that managers are likely to overpay as they are overly confident in their valuations and, thus, in bidding contests the most overly optimistic bidder is likely to win and suffer from winner's curse. Roll concludes that in the absence of synergies takeover premiums represent valuation errors and are, in effect, a direct redistribution of wealth from the bidder shareholders to the target shareholders.

In hubris hypothesis, Roll (1986) has perfect capital markets, where irrational managers make bad decisions. Schleifer and Vishny (2003), on the other hand, base their model on imperfect capital markets and rational managers. Schleifer and Vishny believe that transactions are driven by stock market valuations of the merging companies as managers take advantage of missvaluations in the market place. According to Schleifer and Vishny, both acquirer and target shareholders can benefit from the transaction in the short run, but in the long-run M&A transactions are a zero-sum game as they are driven purely by the valuations of the acquiring and target companies, and no real wealth creation factors are present.

3.1.2 Motives for cross-border M&A

Having now covered the most important motives for M&A transaction in general, I now go on to discuss the motives related to cross-border M&A specifically. Various motives have been presented in the earlier literature, and I present here the most documented ones, i.e. theories relating to entry into new markets, learning and acquisition of resources and acquirer specific capabilities.

Entry into new markets

In some cases a company might wish to enter into a new market, but finds it very hard to establish a new entity as a greenfield investment to cater for that market. It might be for

example that the legislation in that specific country makes it troublesome to establish a new entity, or that the existing market players have very solid positions in the market, and market penetration would be costly and time consuming. Under these circumstances, the company might choose to acquire one of the existing market players to facilitate its entry into the markets. Using this approach, the company can swiftly gain access to local suppliers, clients and marketing channels (Wang and Boateng, 2007), whereas it would have had to use substantial amount of resources and time to establish this position from scratch. Weston, Mitchell, and Mulherin (2004) argue that entry into new markets is likely to be a very important motive for M&A when the company's domestic markets are saturated or too small.

It can also be that entry into new markets is sought not only for its growth prospects, but also for risk reduction through international diversification. For example Fatemi (1984) and Seth (1990) show that geographical market diversification indeed reduces the riskiness of a company. However, as markets have become more correlated, this effect has grown smaller during recent years, but as Hargis and Mei (2006) point out, country diversification is still a key risk reduction factor and should not be neglected in favor of industrial diversification.

Learning and acquisition of resources

A number of studies have hypothesized that that learning and acquisition of key resources are important drivers of cross-border M&A (see, e.g., Vermeulen and Barkema, 2001). According to this theory, there are limits to how far it is practical for a company to develop intangible assets, such as technical and managerial capabilities, in house. Consequently, a company might find it more practical to make up for its intangible deficiencies by acquiring overseas companies that already hold these capabilities. The evidence regarding this theory is somewhat ambiguous as some studies (e.g. Eun, Kolodny, and Scheraga, 1996) suggest that cross-border acquisitions of R&D-intensive companies generate larger bidder returns and are, hence, more likely to be targets of international M&A, while other studies (e.g. Cakici et al., 1996) find no such relation.

Internalization of acquirer's intangible assets

Internalization hypothesis poses that in order to create value in cross-border M&A, the acquirer must have intangible assets that can be internalized (see Caves, 1971; Morck and Yeung, 1992). The theory suggests that firms having a lot of intangible assets are more likely to engage in cross-border M&A by acquiring targets that are lacking the capabilities which

the acquirer possess. This allows the acquirer to leverage on its capabilities on a large scale and, thus, create additional shareholder value through the acquisition.

3.2 Wealth effects of M&A announcements

Wealth effects around M&A announcements have been studied since 1980s, and the topic has spawned an exhaustive academic literature. This is because according to finance theory, at the announcement date of an M&A transaction, the market value of the corporation making the transaction should instantly change to reflect the value of the announced deal. Hence, in order to grasp the value created through M&A, one should look at the CARs around the announcement date. It is common to look at the value creation in a window of time around the announcement date, due to the fact that private information of the deal might be leaking and causes run-up on the share price before the announcement date, and also markets might be slow in reacting to the announcement. In this section, I present the key empirical studies on wealth effect of M&A announcements starting with domestic M&A transactions and finishing with cross-border deals. The focus is on the wealth effect to the acquirers' shareholders, but in the first subsection, I also comment on the value creation to the targets' shareholders in order to obtain a picture on the distribution of the total gains. It should be noted that by returns, gains, or losses, I constantly refer to CARs, except when I specifically mention otherwise. Table 2 summarizes the findings of the studies, which I present in this section.

3.2.1 Wealth effects of domestic M&A announcements

Most of the studies on wealth effects of domestic M&A announcements have concentrated on the U.S. markets due to extensive availability of observations that tend to make the results more reliable. Hence, this subsection will focus on studies conducted on the U.S. markets.

Bradley, Desai, and Kim, (1988) were the first to study combined abnormal returns around M&A announcements. In their seminal paper, 'Synergistic gains from corporate acquisitions and their division between the stockholders of target and acquiring firms', Bradley et al. show that M&A deals seem to truly be value creative transactions as a whole. Using a sample of 236 U.S. acquisitions during 1963 - 1984, the authors show that the announcement of a subsequently completed M&A deal resulted in a highly significant combined CAR of 7.4%. Furthermore, the authors show that targets seem to reap lion's share of value created

Table 2: Summary of studies on wealth effects of domestic and cross-border M&A transactions

The table summarizes the findings of a number of key studies on wealth effects of domestic (Panel A) and cross-border (Panel B) M&A announcements. The column return weighting distinguishes between the possible ways of recording returns, namely percentage or value weighted, but also a special approach employed by Dos Santos et al. (2008) is possible. All the returns, except those of Dos Santos et al., refer to cumulative abnormal returns. The method used by Dos Santos et al. examines changes in industry adjusted excess value pre and post acquisition. The excess value is defined as a firm's market value (the market value of common equity plus the book value of total debt plus the liquidating value of preferred stock) to the imputed value of the company based on a multiple of industry matched peers. Bradley et al. (1988), Cakici et al. (1996), and Andrade et al. (2001) report their results in three different time periods and they are presented here separately.

Panel A: Domestic transactions

Author(s)	Year of publication	N	Region of acquirer	Region of target	Time period	Return weighting	Acquirer returns	Target returns	Combined returns
Bradley et al.	1988	51	USA	USA	1963 - 1968	Percentage	4.1%	18.9%	7.8%
Bradley et al.	1988	133	USA	USA	1969 - 1980	Percentage	1.3%	35.3%	7.1%
Bradley et al.	1988	52	USA	USA	1981 - 1984	Percentage	-2.9%	35.3%	8.0%
Andrade et al.	2001	598	USA	USA	1973 - 1979	Percentage	-0.3%	16.0%	1.5%
Andrade et al.	2001	1,226	USA	USA	1980 - 1989	Percentage	-0.4%	16.0%	2.6%
Andrade et al.	2001	1,864	USA	USA	1990 - 1998	Percentage	-1.0%	15.9%	1.4%
Moeller et al.	2004	12,023	USA	USA	1980 - 2001	Percentage	1.1%	n/a	n/a
Moeller et al.	2004	12,023	USA	USA	1980 - 2001	Value	-1.2%	n/a	n/a
Hazelkorn et al.	2004	1,547	USA	USA	1990 - 2002	Percentage	-0.4%	n/a	n/a

Panel B: Cross-border transactions

Author(s)	Year of publication	N	Region of acquirer	Region of target	Time period	Return weighting	Acquirer returns	Target returns	Combined returns
Doukas and Travlos	1988	301	USA	Rest of world	1975 - 1983	Percentage	0.5%	n/a	n/a
Kang	1993	119	Japan	USA	1975 - 1988	Percentage	0.5%	9.4%	n/a
Datta and Puia	1995	112	USA	Rest of world	1978 - 1990	Percentage	-0.7%	n/a	n/a
Cakici et al.	1996	195	Rest of world	USA	1983 - 1992	Percentage	2.0%	n/a	n/a
Cakici et al.	1996	112	USA	Rest of world	1983 - 1992	Percentage	-0.3%	n/a	n/a
Seth et al.	2002	100	Rest of world	USA	1981 - 1990	Percentage	0.1%	n/a	7.6%
Dos Santos et al.	2008	136	USA	Rest of world	1990 - 2000	Special	-6.6%	n/a	n/a

in M&A as in their overall sample the targets average return was a notable 28.1%, whereas acquirer's CAR was a modest 1.0%. The authors also analyze the phenomenon in different time periods and show that while overall gains seems to have remained fairly stable, the targets share of the gains has increased, and during 1981 – 1984, bidders are actually making losses. The authors relate this development to the passage of the Williams act, which requires that at the time of a tender offer, the bidder must present a large amount of information, such as terms of the offer and sources of the funds, to both the target firm and the SEC. The Act also stipulated a certain time frame that the tender offer must be open. (Weston et al., 2004)

More recent evidence is provided by Andrade, Mitchell, and Stafford (2001), who study a sample of 3,688 completed U.S. acquisitions announced during 1973 - 1998. The authors report a 1.8% combined return, 16.0% target return, and a loss of -0.7% for the acquirer, thus, providing further support for the view, according to which targets win in takeovers, while as bidders lose on average. The results also implicate that the overall returns from M&A seem to have decreased over time and the average bidder's losses have become steeper (see Table 2 for complete details on the sub-samples).

Moeller, Schlingemann, and Stulz (2004), were one of the first researchers to study bidder wealth effects in M&A transactions by calculating both percentage and dollar weighted returns. Studying a sample of 12,023 U.S. acquisitions during 1980 - 2001, the authors show that while the percentage weighted return for the bidder is 1.1%, dollar weighted return is -1.2%. This phenomenon is driven by the fact that large transactions seem to be a lot worse than small transactions (see section 3.3.1 for a thorough discussion). In addition to providing further and more recent evidence supporting the view that acquirers lose on average in M&A, the paper also highlights the importance of looking at both percentage and value weighted returns. This is the approach that will be employed also in the empirical part of my study.

Another quite recent paper by Hazelkorn, Zenner, and Shivdasani (2004) provided additional insights into the returns patterns of acquirers in M&A deals. Studying a sample of 1,547 U.S. acquisitions announced during 1990 - 2002, the authors document an acquirer CAR of -0.4%. However, the authors argue that although on average a small portion of acquirer's shareholder value is destroyed in M&A, this is by far not common. Hazelkorn et al. note that in 78% of their sample transactions, bidders lost or gained more than 2.0% of their market value at the time of the announcement of a deal. Hazelkorn et al. argue that this evidence supports a view,

according to which takeovers generally lead to large wealth effects to the bidder and, hence, decisions made in choosing the targets and valuing them properly are critical for success.

In sum, the evidence seems to indicate that M&A deals create value on average. However, the evidence also shows that the value is most often entirely captured by the target, whereas the acquirer is seen as making losses in some studies and roughly breaking even in others. Having now covered domestic M&A transactions, I move on to my specific topic, cross-border M&A.

3.2.2 Wealth effects of cross-border M&A announcements

Also the wealth effects of cross-border M&A transactions have been widely studied since the late 1980s. In most of the studies on wealth effects of cross-border M&A announcements the sample includes U.S. companies either as bidders or targets, and as transatlantic M&A is also the topic of my thesis, I will concentrate in this section on the studies conducted with U.S. companies as one counterpart.

Doukas and Travlos (1988) were one of the first to study cross-border acquisitions. Using a sample of 301 foreign acquisitions by U.S. bidders during 1975 - 1983, the authors show that the shareholders earn a significant 0.5% abnormal return around the announcement of the acquisition. Also Kang (1993) reports a CAR of 0.5% for his sample of 119 acquisitions of U.S. targets by Japanese firms in the period 1975 - 1988. Doukas and Travlos also provide evidence indicating that entry into a new market is a determinant of value creation, as the authors show that the average CAR for acquisitions in countries where the acquirer already has operations is an insignificant 0.3%, whereas acquisitions that result in entries into new markets earn on average a significant return of 0.7%. Doukas and Travlos also show that higher acquirer CARs are experienced when the target is from a less developed country, or when the acquirer diversifies both geographically and industrially at the same time.

By using a sample of 112 cross-border acquisitions by U.S. acquirers between 1978 and 1990, Datta and Puia (1995) show that the average value creation to the bidder is -0.7%, indicating that bidders are actually making losses in the deals they carry out. Datta and Puia argue that these losses are consistent with Roll's hubris theory, but they also note that asymmetric information might make it hard to value foreign targets and, hence, the acquirers end up overpaying. An interesting reference is also made to earlier literature, as Datta and Puia note

that the average value creation through international M&A might have come down due to increased global competition, which results in fewer opportunities for good deals.

In an interesting study, Cakici et al. (1996), study the value creation of cross-border M&A transactions by comparing two samples, in which U.S. companies are either bidder or target. They report that the average value creation by U.S. firms is -0.3%, while the acquisitions of U.S. targets by foreign companies seem to generate a return of 2.0%. Disappointingly, Cakici et al. fail to give any proper explanation on the source of this difference, but they conclude, however, that the value creation is not driven by relative size of the target or bidder, target R&D –intensity, first market entry, currency value, or industry factors.

Seth, Song, and Richardson (2002) study cross-border acquisitions of U.S. targets carried out between 1981 and 1990 and report a bidder CAR of 0.1% and their results are, thus, in line with previous research. However, the study is quite interesting in the respect that it tries to determine the underlying motive for the transactions, i.e. synergy-seeking, managerialism, or hubris, and only then tries to determine the sources of the value creation or destruction. Seth et al. show that the value creation in synergy seeking acquisitions is driven by asset sharing, reverse internalization of valuable intangible assets, and financial diversification. However, the authors show that target shareholders gain most of the value created as gains accrue to bidder firm shareholders only for reverse internalization of the intangible assets. For value destroying acquisitions that Seth et al. expect to be driven by managerialism, the authors can only conclude that wealth destruction seems to be driven by risk reduction. It should be noted here, however, that as the division between the three alternative motives is based solely on target and acquirer returns, the results can be misleading. Nevertheless, the paper provides a lot of valuable qualitative insights into value creation in cross-border M&A transactions.

One of the most recent papers on cross-border acquisitions is by Dos Santos, Errunza, and Miller (2008). The authors measure wealth effects of M&A deals as changes in industry adjusted excess value pre and post acquisition. The excess value is defined as firm’s market value to the imputed value of the company based on a multiple of industry matched peers. Using this definition and a sample of 136 cross-border acquisitions by U.S. companies, the authors report an acquirer return of -6.6%. All and all, it seems that also cross-border M&A transactions between developed market companies seem to be roughly break-even deals for the bidder, most of the studies reporting either small positive or small negative gains.

3.3 Factors related to acquirer returns in M&A

Prior research lists a large number of potential sources of acquirer gains and losses, of which many relate to M&A transactions in general, but there are also a number of potential sources of value creation that concern cross-border M&As specifically. In this section, I first discuss the literature on general sources of acquirer returns, and then present the literature on sources of acquirer returns in cross-border M&A. It is important to understand what drives the value creation in M&A, before it is possible to hypothesize on additional variables. In addition, proper understanding of the current theories allows me to credibly control my results.

3.3.1 General sources of acquirer returns

In this subsection, I review the most important literature on the sources of acquirer returns in M&A transactions. I cover method of payment, firm size, bidding contests, free cash flow and excess cash reserves, as well as company status of the target firm.

Method of payment

It is quite commonly held that acquisitions by cash generate superior abnormal stock returns (see, e.g., Myers and Majluf, 1984). The logic behind this theory is that the managers of the bidding firm have private information on the true value of their firm, and as they are seeking to maximize shareholder value, they choose to use equity as a payment method only when they think that their firm is overvalued in the market place. Thus, the method of payment in acquisitions conveys a powerful message on the true value of the firm to the investors.

By studying 167 M&As, Travlos (1987) shows that bidders offering cash seem to roughly break even, while stock-financed deals generate significant abnormal losses. Similar patterns are also reported by e.g. You, Caves, Smith, and Henry (1986), Amihud, Lev, and Travlos (1990), and Andrade et al. (2001). Travlos also shows that stock offers generate negative returns regardless of the success of the bid, suggesting that by launching an equity-financed bid, the firm signals its overvaluation. These studies highlight the fact that shareholders of a company that makes a lot of equity-financed deals, one example being European firms cross-listed in the U.S. (see Tolmunen and Torstila, 2005), might be at a very unfavorable position.

A number of more recent studies present additional arguments for the superiority of cash deals. Hazelkorn et al. (2004) associate the favorable market reaction of cash-financed deals

to decreased agency costs, as cash deals are likely to be financed by increasing the leverage of the company. Cools, Gell, Kengelbach, and Roos (2007), on the other hand, argue that by paying with cash, the management of the bidder shows true commitment by putting actual money at stake. For the managers to be willing to do this, they are likely to be confident that the M&A deal will more than compensate its required rate of return.

Firm size

Relative size of the acquirer and bidder has been hypothesized to affect returns from M&A, and the matter has been studied by a number of researchers with somewhat inconclusive results. Being one of the first researchers to study the issue, Asquith, Bruner, and Mullins (1983) show that bidder abnormal returns are positively correlated with the ratio of the market value of the target to the bidder, providing evidence that relatively larger deals are better. They argue that this is due to an inherent measurement error in the event study methodology as percentage CARs are often examined instead of dollar CARs. If the bidder is a lot larger than the target, as is frequently the case, percentage returns are likely to be small, even if the deal is extremely good.

In a more recent paper, Moeller et al. (2004) study a sample of 12,023 acquisitions during the time period 1980-2001 and find that equally weighted abnormal returns to bidder shareholders are positive 1.1%, but money wise, the acquirers seem to lose on average $25.2 million per acquisition. This is due to the fact that in their sample, larger deals were a lot worse than small deals. More specifically, it seems that small firms are making small and value creating acquisitions, whereas large firms are making large and value destroying acquisitions. Moeller et al. suggest that the managers of large firms might be more prone to hubris and, hence, end up overpaying. The authors also find some additional support for this view, as they show that larger firms are paying larger premiums for their targets. The authors also suggest that larger firms are usually mature companies with poor internal growth prospects and, hence, they are likely to have a large free cash flow, which the managers of the company might use to make acquisitions, even in the absence of suitable targets. As with the extant literature on the method of payment, also the literature on firm size and acquisitions seems to support the fact that the shareholders of cross-listed companies are in a disadvantageous position when their company makes an acquisition, as Tolmunen and Torstila (2005) show that these acquisitions are substantially larger than the ones carried out by the firms prior to cross-listing.

Winner's curse in bidding contests

Bradley et al. (1988) show that in bidding contests, the eventual winner suffers from so called 'winner's curse' as the bidding contest drives up the deal price, and the winner quite often ends up overpaying. In Bradley et al., the average CAR for the bidder is 2.8% if there is a single bidder, but a -0.7% if there are multiple bidders. The authors also show that the winner's curse is most severe for late entrants to the bidding process. More recently, Cakici et al. (1996) document the existence of winner's curse issue in a sample of cross-border M&As.

Free cash flow and excess cash reserves

Supporting Jensen's (1986) free cash flow problem hypothesis, Harford (1999) shows that companies with large cash reserves seem to be more likely to attempt acquisitions. Studying a sample of attempted acquisitions between 1977 and 1993, Harford also shows that the acquisitions carried out by the cash rich firms seem to be more wealth destroying than deals in the overall sample and, furthermore, on average bids by the cash rich firms seem to destroy some 7% of the cash reserves in terms of market value. Harford also notes that the acquisitions made by the cash rich firms are diversifying, and lead to a decrease in the operating performance of the bidder. Also interestingly, bids by cash rich firms are very seldom challenged, possible indicating bids for targets that nobody else is interested in.

Public vs. private target

A number of authors (Fuller, Netter, and Stegemoller, 2002; Hazelkorn et al., 2004; Moeller et al., 2004) have shown that companies experience larger gains when they acquire private targets or subsidiaries of public companies than entire public companies. Fuller et al. and Hazelkorn et al. attribute this effect to the lack of public market price, which may enable bargain deals, and to a broader selection of possible public targets, which might lead to overly complex post-merger integration and, hence, decrease acquirer returns. The motivation behind the possibility of bargain deals in non-public targets is, according to Fuller et al., the fact that the market for those targets is often very illiquid leading to discounts in their valuation.

3.3.2 Sources of acquirer returns in cross-border M&A

Having now covered the general sources of acquirer gains or losses, in this subsection I present the most important earlier literature on sources of acquirer returns in cross-border

M&A transactions. I go over cultural fit, relative exchange rates, market premier, and industry diversification.

Cultural fit

A number of scholars have hypothesized that acquisition performance might be related to the cultural fit between acquirer and target. For example Madura, Vasconcellos, and Kish (1991) develop a model to value international acquisitions. Their model suggest, that one has to take into consideration the cultural and linguistic ties between the acquirer and the target, as these aspects are argued to have a clear impact on the profitability of the acquisition. Madura et al. claim that the better the cultural fit between the merging parties, the better the returns.

To evaluate the relation between cultural fit and gains from M&A, Datta and Puia (1995) study a sample of 112 large cross-border acquisitions undertaken by U.S. firms between 1978 and 1990. The authors report statistically significantly higher bidder returns for M&A transactions in which the cultural distance is low between the home countries of the acquirer and the target, compared to those transactions with large cultural distance. Datta and Puia associate the higher returns with the ease of post-merger integration of two firms which share similar cultural systems. In addition, the authors note that the poor acquisition performance prevalent in M&As with large cultural distance might also be attributable to poor knowledge of the target firm by the bidder, which might cause the company to overpay for the target.

Relative exchange rate changes

Froot and Stein (1991) argue that when financing an M&A transaction, it is likely that only part of the cash needed will be raised by issue of debt and, hence, a part of the acquisition will be paid by the internal assets of the acquirer. Thus, acquirer returns are likely to be higher when the acquirer's currency is strong in relation to the target. This view is supported by Kang (1993), who shows that the appreciation of yen relative to the dollar increases the acquirer returns in cross-border M&As where U.S. targets are acquired by Japanese bidders.

Market premier

Consistent with the theory, according to which entry into new markets is a key motive behind international M&A, Doukas and Travlos (1988) show that U.S. companies bidding for non-U.S. targets earn highest returns, when the bidder does not have operations in the target country. On a related note, however, Dos Santos et al. (2008) show that going abroad for the

first time through M&A is associated with greater value loss than cross-border acquisitions by acquirers, who have already established their position abroad. It would seem, therefore, that entry into new markets is valuable only to companies that are already international.

Industry diversification

A number of academic researchers have shown that domestic M&As that lead to a more diversified entity are value destroying (Bradley et al., 1988; Hazelkorn et al., 2004). However, some studies have shown that the opposite holds for cross-border M&As, as diversifying acquisitions seem to be more value creative than focused deals (Doukas and Travlos, 1988; Eun et al., 1996). However, Dos Santos et al. (2008) report that unrelated cross-border M&As result in substantial negative effects on the market valuation of the bidder. Thus, the evidence on the effect of industry diversification in cross-border acquisitions is mixed at best.

3.4 Special characteristics of transatlantic M&A

Transatlantic M&A has a number of special aspects, whose understanding is imperative, if one is to study these transactions. In this section, I first discuss ADRs as an acquisitions currency in transatlantic M&A, and then I briefly go over the implication of differing legal and regulatory framework, emphasizing the role of tax implications.

ADRs are generally viewed as a more viable takeover currency in the U.S. than foreign equity (see, e.g., Eiteman et al., 1998; Pagano et al., 2002). Behavioral issues, such as home bias, are likely to be key contributors to this notion. U.S. investors just simply seem to prefer domestic equity over foreign equity and, hence, will be more willing to accept ADRs as a method of payment in takeovers than foreign equity. However, there are also a number of factual issues that make it rational for U.S. investors to prefer ADRs over foreign equity. For example certain U.S. institutions have constraints on the amount of foreign equity which they can hold. When these institutions are faced with a takeover suggestion, they are more likely to favor deals that give payment in U.S. equity. If these institutions are paid in foreign equity, they might be forced to sell their holdings and unfavorable tax consequences might incur.

Also JP Morgan (2005) notes that U.S. investors are likely to favor trading ADRs over foreign shares, as the executions will be dollar denominated, transfer costs will be smaller, and investors can avoid transfer taxes. To same vein, JP Morgan also notes that certain

country specific factors, such as the difficulties in reclamation of local taxes in Italy, are likely to further strengthen U.S. investor's preference towards ADRs. JP Morgan (2005) and Bendaniel and Rosenbloom (1998) come to the conclusion that ADR programs heavily contribute to the success of U.S. acquisitions by foreign bidders.

Transatlantic M&A transactions are governed by three distinct legislations: U.S. legislation, legislation of the country of origin of the acquirer, as well as nowadays also increasingly EU legislation. Transatlantic M&As, however, are quite frequent endeavors and legislation quite seldom prohibits them from taking place. According to Bendaniel and Rosenbloom (1998), however, there are certain cases when an acquisition might be suspended. First, regulatory approval is required in acquisitions of assets that are viewed as contributing to the U.S. national security, namely industries associated with defense, financing, transportation, and broadcasting. However, getting a regulatory approval is deemed easier for countries from developed Europe than say from Russia. Second, U.S. antitrust laws require a pre-merger notification to authorities for deals above certain size. Furthermore, also the EU commission might block deals that they see as accumulating too much monopoly power to one company.

Taxes are an important consideration in all M&A activity and, hence, they must be considered also in transatlantic transactions. In order to avoid taxes to the shareholders of the target, the acquisitions must be organized as a tax-free reorganization as opposed to a taxable purchase. The deal is classified as a tax-free reorganization, when majority of the consideration is in stock, being most often ADRs (Weston et al., 2004). In this case, there are no immediate tax consequences for the target's shareholders, but they carry over the tax basis in the acquiring company stock, and taxes are imputed at the time of the sale of these stocks. According to Bendaniel and Rosenbloom (1998), U.S. acquisitions by non-US targets are most often carried out as forward triangular mergers. In this transaction, the U.S. target is acquired by a newly formed shell subsidiary of the foreign parent company. The purchase medium is often the parent company stock, and in this case the deal is considered as a tax-free reorganization.

In this chapter, I have covered the extant literature on motives, wealth effects and sources of wealth effects of M&A activity. Also special characteristics of transatlantic M&A transactions were very briefly discussed. Having now developed a comprehensive understanding of M&A as well as cross-listing, it is time to move on to hypothesize on the relation between cross-listing and returns from M&A.

4 Hypotheses and variables

The main contribution of my study is the evaluation of nine hypotheses, most of which are based on extant literature on finance and international business studies. However, none of the hypotheses have so far been tested on a cross-listing setting. I formulate my hypotheses around the following research question:

> ***Research problem: Are U.S. acquisitions by European companies cross-listed in the U.S. value creative?***

In this chapter, I first present my hypotheses related to the above research question. After presenting the hypotheses, I explain the theories behind my controlling determinants of value creation. In addition to reliably controlling my results, these additional variables allow me to provide insights to some common theories on M&A returns in a transatlantic setting.

4.1 Hypotheses of the study

In this section, I present the hypotheses, which I seek to confirm in the empirical part of my paper. I first discuss hypotheses related to Sample 1 – acquisitions by cross-listers and the control group and then to Sample 2 – acquisitions by cross-listers before cross-listing, during cross-listing, and after cross-delisting.

4.1.1 Hypotheses related to Sample 1

As discussed in the literature review, managers are often prone to irrational empire building. It might be that the management of a company which chooses to cross-list its shares on a foreign exchange and uses those shares to make acquisitions, is embarking on an ultimate empire building journey: they want to conquer there world, so to speak. This is driven by personal self interest of the management of the acquiring company; by growing the size of the company, the managers are able to get more power, prestige and pay (Pike and Neale, 2003). This effect is likely to be even more dramatic in a cross-listing setting as the managers of European companies are sure to get more air and press time in the U.S. by making more and larger acquisitions in the U.S., which is made possible by the existence of their cross-listed stock as a medium of exchange in M&A. This suggestion is in line with Morck and Schleifer

(1990), who report that when private benefits to the management are especially large, the managers might carry out shareholder wealth destroying acquisitions.

A straight forward test of managerial hubris is to check how visible a company is in prestigious business publications. As I argue that managers of cross-listed companies are more prone to irrational empire building and hubris, then it is likely that a cross-listed company is more visible in prestigious publications surrounding the announcement of the acquisitions than a non-cross-listed company. Hence, my first hypothesis:

> *H_1: Cross-listed companies are more visible in prestigious business publications than their non-cross-listed peers around takeover announcements*

A large number of publication hits entails that the company's management is likely to have deliberately tried to increase the company's, as well as their own, visibility in these publications in order to increase their prestige. One way to do this is to engage in flashy corporate transactions, which are sure to get publicity to the company, although they would not be beneficial to the shareholders. Thus, I form my second hypothesis as follows:

> *H_2: The higher the visibility of the acquirer in prestigious business publications, the lower the returns from M&A*

As the development of a viable M&A currency is one of the key motivators for cross-listing in the first place (Eiteman et al. 1998; Pagano et al. 2002; JP Morgan, 2005; Citigroup, 2005), it is likely that managers of companies, which have cross-listed at least partially for this reason, are eager to use the currency to make acquisitions, irrespective of any good takeover opportunities being present. This is somewhat analogous to the classical free cash flow problem (Jensen, 1986), as cross-listed companies in effect have large amounts of viable takeover currency in their possession. One might even say that they can in effect print acquisition money. This kind of an incentive is not present for non-cross-listed companies, indicating that non-cross-listed companies are able to use more judgment and common sense in their M&A, and are therefore less prone to hubris than cross-listed companies.

When one considers the fact that management of cross-listed companies are more prone to empire building, and the fact that cross-listed companies have large amounts of viable takeover currency in their possession, this raises the questions on the rationale behind these

acquisitions. Tolmunen and Torstila (2005) provided first evidence on the dubious nature of the acquisitions made by cross-listed companies as they showed these acquisitions to be larger and more stock-financed than acquisitions by non-cross-listed companies. The possibility to use cross-listed stock as acquisition currency also makes it easier for cross-listed companies to bid for public targets and, hence, cross-listed companies are more likely to acquire public companies than their non-cross-listed peers, indicating worse acquisition performance. Furthermore, as cross-listed companies have been shown to be more active acquirers than their non-cross-listed peers (Tolmunen and Torstila, 2005), they are likely to use less scrutiny in selecting their targets and, thus, end up bidding also for companies that are outside their industry and have a poor strategic fit. This implies potentially adverse outcomes for the shareholders of cross-listed companies as diversifying acquisitions have been shown to lead to shareholder value destruction (Graham, Lemmon, and Wolf, 2002).

The above hypothesized tendency of cross-listed companies to engage in stock financed M&A, where the target is a large public company having a poor strategic fit is likely to be only symptom of a larger problem: irrational managerial empire building. As the egos of the management grow to huge proportions, the acquisitions made by them are likely to be suboptimal from the viewpoint of the shareholders of the company. I argue that as the shareholders are likely to acknowledge these tendencies, they should react unfavourably to the takeover announcements. Hence, I form my third hypothesis as follows:

> *H_3: Cross-border acquisitions by cross-listed acquirers are less value creative than cross-border acquisitions by non-cross-listed bidders*

It has to be noted, however, that not all prior studies provide evidence that the deals made by cross-listed bidders are worse than those of their domestically listed peers. Burns et al. (2007) argue that the home bias of U.S. investors might be alleviated by a U.S. cross-listings as bonding occurs, enabling cross-listed companies to pay lower premiums. However, Burns et al. more specifically note that cross-listers pay on average 10% less premium on their equity-financed deals than non-cross-listed bidders pay on cash deals. Cash and stock deals cannot, however, be directly compared, and it is impossible to say which of the above deals would be better for the bidder's shareholders.

It is generally acknowledged that agency costs tend to be more substantial for larger companies (see Jensen, 1986; Schin and Kim, 2002), which are likely to have a larger amount

of atomistic shareholders, who have very limited possibilities for controlling the actions of the management. Furthermore, Jensen notes that increased size of the firm increases the resources under the management's control. These resources tend to, more often or not, be used to shareholder value destroying activities such as wealth destroying acquisitions. The increase in the size of the company is also sometimes associated with the fact that the company might be overvalued, creating additional incentives for companies to engage in equity-financed M&A.

Theory and empirical evidence seems to suggest that agency costs increase as the size of the company increases. However, this effect is likely to be even larger for cross-listed companies than for those companies that are only domestically listed, due to the fact that foreign equity is regarded as inferior to domestic equity in the U.S.. This results in a situation, where only cross-listed companies are able to fully utilize their size and other resources, as well as in some cases overvaluation of their stock, in making transatlantic acquisitions. Hence, I state my fourth hypothesis as:

> *H_4: The difference in acquirer gains between cross-listed and non-cross-listed companies is higher for larger companies*

As discussed in section 3.2, bidder returns in M&A have been shown to be negative in some studies, while other studies indicate that the acquirers roughly break even. However, very few researchers suggest that M&A transactions create wealth for the acquirer on average, at least when studying the question with recent data concerning M&A transactions between developed world targets and developed world bidders.

It seems that the earlier evidence would indicate that also the U.S. acquisitions of European companies cross-listed in the U.S. would be at most break-even endeavors for the acquiring company, if there is no additional evidence or theory suggesting that these companies would be likely to make exceptionally good acquisitions. However, as discussed earlier, the acquisitions made by foreign companies cross-listed in the U.S. are likely to be even worse than those acquisitions made by their domestically listed peers, due to the high number of potential agency and hubris costs, which the decision to cross-list seems to indicate. Hence, I state my fifth hypothesis as:

> *H_5: Acquisitions by cross-listed acquirers are wealth destroying*

4.1.2 Hypotheses related to Sample 2

Cross-listing in itself is likely to change the acquisition behavior of a company. As cross-listing provides the company with a viable M&A currency, the firm is likely to want to use it, as discussed in the previous subsection. This M&A currency allows the firm to engage in equity-financed transactions in the U.S. more efficiently, which in effect would make it easier for the company to make larger acquisitions, as the company has to raise less debt to finance the transaction. Supporting this view, Tolmunen and Torstila (2005) show that the cross-listing of a company seems to lead to significant increases in large equity-financed transactions, implying dubious consequences for the shareholders of a cross-listing company.

It might be that the decision to cross-list acts as a proxy for a larger change in the company. Although cross-listing companies are likely to have been acquisitive in the U.S. already before the cross-listing, cross-listing might have been pursued at a time when a firm chooses to accelerate its internalization process. For example Buckley and Casson (1998) suggest that the internalization of a company proceeds in stages. Hence, if the decision to cross-list is made at an early stage of the internalization process of the company, more acquisitions are likely to follow soon after the cross-listing. As I have hypothesized above, this change in the internalization process of a company is not always made on rational accounts, but rather as a result of self interest of the management, which causes the firm to embark on an irrational journey of empire building through world conquering. Thus, my sixth hypothesis:

H_6: Gains from acquisitions decrease after company cross-lists

To the best of my knowledge, there exists no earlier studies on the relation between cross-delisting and M&A, and as cross-delistings have become increasingly common, as discussed in section 2.1, this is a clear avenue for research. Although literature suggests that the introduction of Sarbanes-Oxley and change in deregistering requirements (see, e.g., Doidge et al., 2008) have been the key drivers of cross-delistings, only a fraction of firms cross-listed in the U.S. have chosen to cross-delists. This implies that the decision to cross-delist is not an automatic response to changes in the regulative environment, but rather a strategic choice, potentially indicating some change in the company. As the decision to cross-list is viewed as evidence of an empire building journey, which is likely to decrease returns from M&A, it might also very well be the case that the decision of a firm to choose to end its cross-listing and delist from a foreign exchange marks the end of this irrational wealth destroying journey.

It could be that discouraged by bad acquisitions made while being cross-listed, the company decides that it is not anymore necessary for it to have a viable M&A currency and, hence, it can choose to cross-delist. After cross-delisting, the company does not anymore need to make acquisitions just because they have the takeover currency available and, thus, companies are likely to make better choices in their acquisitions. Also the management of a company is likely to be very cautious and trying to avoid making bad acquisitions, if they have already carried out a number of wealth destroying deals while being cross-listed. The shareholders are likely to tolerate value destroying behavior for some time, but management who continuously make bad choices in M&A are likely to find themselves unemployed. I argue that cross-delisting is likely to change the acquisition behavior of a company to a better direction, likely to be witnessed in for example smaller deals, larger amount of cash deals, and more deals where the target is a private company. Thus, I form my seventh hypothesis as follows:

H_7: Gains from acquisitions increase after company cross-delists

Cross-delisting is also likely to affect the prominence of a company in prestigious business publications. As I hypothesize that cross-delisting implies a change in a company to a more shareholder value oriented direction, which entails that the company does not strive to make high-profile acquisitions for the sake of managerial hubris, cross-delisting is likely to decrease the visibility of the sample companies in the above mentioned publications. Therefore, I state my eighth hypothesis as:

H_8: Visibility in prestigious publications is smaller for cross-delisted companies than for cross-listed companies

Hypothesis 4 highlighted the fact that cross-listing is likely to be even worse for the acquirer returns of larger companies due to more severe agency issues in these diversely held companies. As a result, it is likely that large cross-listed companies make particularly bad acquisitions and, hence, the decision to cross-delist has a particularly favorable effect for large companies, as cross-delistings removes the acquisition currency from the management's disposal. Hence, quite analogously to Hypothesis 4, I form my ninth and final hypothesis as:

H_9: The effect of cross-delisting to acquirer returns is more intense for larger companies

4.2 Other determinants of acquirer value creation in M&A

In this part, I briefly present the theories behind the use of my various control variables in the empirical part of my paper. Most of the theories are already discussed to some extent in section 3.3, so I provide here only a quick summary.

Method of payment in M&A has a substantial effect on the value creation of the transaction. Cash deals are generally viewed as more favorable than equity-financed deals for a number of reasons, such as management sending a signal of the company being overvalued when they launch an equity-financed bid, or the fact that cash deals have a favorable effect on the leverage of the acquiring company. It should be noted, however, that if the bidding company is more overvalued than the target, stock financing is actually a good choice (Schleifer and Vishny, 2003). Nevertheless, in general equity-financed transactions seem to be less wealth creative and, hence, I control for method of payment and expect the relation to be:

> *C_1: Gains from acquisitions decrease as the equity component of the deal increases*

Although industrial diversification might be in the interest of the managers of a company as it decreases the risk of the manager's employment (Amihud and Lev, 1981), diversifying acquisitions have been shown to be shareholder value destructive (see, e.g., Berger and Ofek, 1996; Graham et al., 2002). Thus, I allow for the effect of diversifying deals:

> *C_2: Gains from acquisitions are lower when the bidder and target are from different major industries*

A large number of academics such as Grosman and Hart (1980), Hirshleifer and Titman (1990), Chowdhry and Jegadeesh (1994), Bagnoli and Lipman (1996), and Bulow, Huang, and Klemperer (1999) hypothesize that there is a positive relation between bidder returns and pre-bid ownership of the target by the bidder, known as the toehold. These authors suggest that toehold increases acquirer returns by increasing the probability of takeover success, decreasing the required premium, and by reducing the costs incurred during the takeover process. Consistent with this view, a negative relation between bid premia and toehold is widely documented (Bris, 1998; Asquith and Kieschnick 1999; Betton and Eckbo, 2000), and

Betton and Eckbo also provide evidence supporting the view that toehold enhances the probability of bid success. Hence, also the effect of toehold must be controlled:

> *C_3: Gains from acquisitions are higher when the bidder has a toehold in the target prior to the transaction*

The size of the transaction has been shown to have a negative relation with bidder returns (see, e.g., Moeller et al., 2004). Acknowledging this, I control for the effect of deal size:

> *C_4: Gains from small acquisitions are higher than gains from large acquisitions*

The acquisitions of non-public targets, i.e. private targets or subsidiaries of public targets, seem to be more value creative than the acquisitions of public targets. This effect has been explained by the lack of market price for non-public targets, and by the problems in post-merger integration for public targets. Considering these views, I control for the company status of the target firm:

> *C_5: Gains from acquisitions of private targets and subsidiaries of public targets are higher than from the acquisition of public targets*

Jensen (1986) hypothesizes that companies with large free cash flows end up destroying shareholder value by making bad acquisitions instead of distributing the extra cash to shareholders. Furthermore, Harford (1999) empirically shows that the acquisitions of cash rich companies are less value creative being often single bidder, diversifying deals that lead to decreases in subsequent operating performance. Hence, I control for the size of cash reserves:

> *C_6: Gains from acquisitions are smaller for more cash rich companies*

Motivations for cross-border M&A might differ with the profitability of the acquiring company. A company struggling with its profitability might choose to engage in cross-border M&A transactions just to remain independent, whereas highly profitable companies are more likely to engage in cross-border M&A for reasons given in section 3.1.2, such as learning and new market entry. Thus, I control for the profitability of the acquiring company:

> *C_7: Gains from acquisitions are higher for more profitable companies*

Moeller et al. (2004) showed also that there is a negative relation between acquirer returns and acquirer size. This could be caused by more severe agency issues in larger companies, or by the fact that larger companies are usually mature companies with less growth opportunities. Following this, I control for acquirer size:

> *C_8: Large acquirers experience smaller gains from acquisitions than their smaller peers*

Maloney, McCormick, and Mitchel (1993) document a positive relation between acquirer leverage and its gains from acquisitions. The authors argue that this relation is due to the fact that agency costs are smaller with highly leveraged companies and, hence, acquisitions made by these companies tend to be driven with solid industrial and financial logic, instead of hubris or managerialism. Although some studies have found no such relation (e.g. Moeller et al., 2004), I allow for the existence of this association:

> *C_9: Highly leveraged acquirers gain more from acquisitions than their less leveraged peers*

As discussed in section 3.3.2, cultural fit can have a substantial impact on the ease of post-merger integration. Geringer, Beamish, and DaCosta (1989) suggest that cultural problems are likely to affect a number of phases in the integration, for example the transferring of acquirer's culture specific capabilities, such as marketing or labor policies. Also empirical evidence suggests that acquirer gains are greater in transactions where the cultural distance is small (see, e.g., Datta and Puia, 1995). Hence, I control for cultural distance:

> *C_{10}: Gains from acquisitions are higher when the target has a close cultural fit to the acquirer*

In section 3.3.2, I introduced the view according to which acquirer's whose domestic currency is strong relative to the home currency of the target are likely to experience higher abnormal returns in M&A transactions. As there is also prior empirical evidence that this is truly the case (see. Kang, 1993), I allow for the effect of relative exchange rates:

> *C_{11}: Acquirers having a better relative exchange rate gain more from acquisitions*

5 Data and methodology

In this chapter, I first introduce the data used in my study, after which I describe the methodology which I employ to study my hypotheses laid out in the previous chapter.

5.1 Data

In this section, I describe the data used starting with an explanation of the identification of the sample for the cross-listers. Then I introduce my control sample, after which I describe the sample identification process for the M&A sample. I also discuss other data used in the study. I conclude the section by presenting descriptive statistics for my various samples.

5.1.1 Sample identification for the cross-lister sample

The sample identification procedure, which I describe here, follows quite closely the guidelines laid down by Tolmunen (2001) and Tolmunen and Torstila (2005). I define Europe in this thesis as the developed Europe, i.e. as the original EU-15 countries and Norway and Switzerland. The reason for this definition is that I want to exclude European companies, whose country of origin is considered as having an underdeveloped equity market, which might disrupt my analysis. Also cross-listings by companies from Europe's less developed countries are extremely rare. Extant literature (see Pagano et al., 2002; Tolmunen and Torstila, 2005) define cross-listing as a listing that takes place before or simultaneously to a home market listing. I follow this same approach in identifying my sample. Tolmunen and Torstila also introduce a view, according to which companies who have cross-listed their shares prior to year 1980 are truly global in nature and cross-listing is likely to have very little effect on their acquisition behavior. I build on this idea and require that the cross-listing in my sample has to have taken place between 1.1.1980 and 31.12.2008.

I start the identification of the cross-lister sample from the web pages of the major U.S. stock exchanges, i.e. New York Stock Exchange (NYSE), the former American Stock Exchange nowadays called NYSE Alternext U.S. (AMEX) and National Association of Securities Dealers Automated Quotations (NASDAQ). I search for companies domiciled in Europe, collecting the name of the company, time of the listing as well as the type of listing. This yields me a total of 160 European companies currently listed in the U.S..

As delistings from the U.S. have become increasingly common due to a number of reasons, the most important being the relaxation of SEC deregistering requirements, I also need to add companies that have been, but are not anymore listed in the U.S. to overcome survivorship bias. I do this by using the Thomson Financial SDC New Issues (SDC) database. I search the database for U.S. equity listings by European companies between 1.1.1980 and 31.12.2008. This yields me a total of 265 potential cross-listers, of which 105 turn out to be duplicates of the companies, which I already identified through the exchanges.

Combining my samples from the two sources and eliminating doubles, I have 320 observations. Prior literature on cross-delistings (see, e.g., Doidge et al., 2008) has laid down a practice to use a number of different databases to make sure to be able to include all cross-delistings. To follow this, I further check for cross-listings from the Citigroup's ADR service. Employing the same date range as previously, this yields me 435 observations, of which 86 are new observations that were not found from the other two sources.

All and all, I identify a sample of 406 potential cross-listers. However, it still needs to be verified, whether these are actual cross-listings, or direct orphan listings to the U.S.. I use various sources to confirm this: 1) If the issue synopsis in SDC mentions a simultaneous offering in Europe, the issue is deemed as a cross-listing. 2) Also if, according to Thomson Financial Datastream (Datastream), there is a stock market quote in Europe for the potential cross-lister prior to the listing in the U.S., the company is categorized as a cross-lister. 3) Finally, I use the web page of the company in question, or alternatively LexisNexis key word search, to verify the existence of a prior listing in Europe. By employing this method, I am able to confirm most of my sample companies as cross-listers due to the fact that direct listings in the U.S. by other than North American firms are extremely rare.

For the observations that I have identified solely from SDC, I also have to verify the date of cross-delisting. I again use web pages of the companies as well as LexisNexis for this task. While I add the delisting date to these observations, I also simultaneously cross-check the listing dates found in SDC to verify the correctness of my data. It also turns out that in some cases the date of listing differs between the exchanges, SDC and / or Citigroup's ADR service. If the difference is minor, i.e. less than five days, I use first the date from the exchanges, then SDC, and finally that of Citigroups ADR service, if data from the two other sources is not available. However, if the difference is more than five days, I further study

Table 3: Sample sources and filtering of the cross-lister sample

This table shows the derivation of my sample of European companies that have been cross-listed in the U.S. between 1.1.1980 and 31.12.2008. Europe is defined as the original EU-15 countries and Norway and Switzerland. N is number of firms in each stage. I show the initial sample sources and document the process of removing some of the observations to arrive at my final cross-lister sample. Data on potential cross-listings is first gathered from three partially overlapping sources, i.e. directly from the exchanges, Thomson Financial SDC New Issues database (SDC), and Citigroup's ADR service. Some observations have to be eliminated due to 1) being a duplicate among the three samples, 2) being a direct listing to U.S. instead of a cross-listing, 3) being a financial company (four digit SIC code beginning with 6) due to differences in their financial reporting, 4) ambiguous listing date, and 5) no data available in the Thomson Financial Worldscope database.

Source / rationale for removing	N
Directly from the exchanges	160
SDC	265
Citigroup's ADR	435
Duplicates	-454
Direct listers	-49
Total cross-listers	357
Financial companies	-52
Ambiguous listing date	-2
Data unavailable	-22
Total sample	281

the issue from the web site of the company in question as well as by using LexisNexis. I have to exclude two companies due to being unable to confirm the listing date. Once I employ my final restrictions, i.e. the removal of financial companies due to differences in their financial reporting, and the removal of listings of companies which had no data available in the Thomson Financial Worldscope (Worldscope) database, I arrive with a final cross-lister sample of 281 companies (see Table 3 for summary of the sample identification process).

In this thesis, listing is defined as a quotation on a major U.S. stock exchange, meaning that Level I ADRs as well as SEC Rule 144A private placements are not qualified in the sample, unless they eventually lead to a full quotation. I obtain information on private placements and Level 1 ADR programs from the Bank of New York web page. This allows me to define the original IPO date as the OTC listing date, as identified also in SDC and by the exchanges, for a number of companies. The same definition is used by Tolmunen and Torstila (2005).

5.1.2 Control sample

I base my control sample on the Dow Jones STOXX Total Market Index for Europe, which covers countries Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland,

Ireland, Italy, Luxemburg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the UK. With a variable number of components, this index covers approximately 95% of the free float market capitalization across these 18 countries. It should be noted, however, that no companies from Iceland qualified to the index at the time of retrieval of its composition (December 2008 version). This index excludes stocks of companies that have had over ten non trading days during the prior three months. It is also worth noting that although the time period in my sample is 1996 - 2008, this single version of the index is used throughout the thesis as a control group. During my sample period, however, some companies have been part of the index, but have been subsequently removed from its composition. It might be that some of these companies have went out of business and, hence, it is in theory possible that by using the index from December 2008, I introduce a survivorship bias in the acquisitions performed by my sample companies. The effect, however, is likely to be negotiable, and no further actions are taken to correct it.

5.1.3 Sample identification for the M&A sample

Table 4 on the next page summarizes the results of the identification procedure for the M&A sample. To identify my sample, I search the Thomson Financial SDC Mergers and Acquisitions database for acquisitions, where the target is a U.S. based company and the acquirer's country of origin is from the EU-15 or Norway or Switzerland. As European companies quite often use a U.S. subsidiary in making the acquisition in the U.S., I attribute these acquisitions to the ultimate parent company as identified by SDC. I include transactions between 1.1.1996 and 31.12.2008. The logic for this restriction is that financial data on European companies in the Worldscope database prior to 1996 is quite limited.

I only include transactions which are completed, i.e. I exclude withdrawn, pending and rumored transactions. I further require that the acquisition has to result in majority ownership of the target, and I also require that the value of the acquisition must be over $1 million to alleviate the problem of small acquisitions having a negligible effect on the market value of the bidder.

I match the M&A transactions to my sample companies by searching with names and parts of the name of the acquirer, as well as with the company's ticker. I verify manually the accuracy of each data point. This yields my Sample 1, with 451 acquisitions by cross-listed companies

Table 4: Filtering of the M&A sample

The table shows the sample of acquisitions of U.S. companies by European companies between 1.1.1996 and 31.12.2008 as reported in the Thomson Financial SDC Mergers and Acquisitions database (SDC). Europe is defined as the original EU-15 countries and Norway and UK. Panel A shows the eliminations done on the sample, i.e. the removal of acquisitions that did not result in a majority ownership of the target by the acquirer, removal of transactions which are not completed, and removal of transactions where the deal value is less than $1 million or is unavailable. Panel B shows the number of these acquisitions that are included in the analysis as they are matched to either a sample of 281 European companies that were cross-listed in the U.S. at the time of the acquisition, excluding those companies that cross-listed prior to 1.1.1980, or to the control sample, which includes the companies from the Dow Jones STOXX Total Market Index for Europe (December 2008 version). However, when a STOXX company is also cross-listed at the time of an acquisition, the transaction is classified as a cross-lister acquisition. Both the cross-lister sample and the control sample exclude financial companies (first digit of SIC code 6) due to differences in their financial reporting. In addition, panel B reports the number of acquisitions, in which the method of payment is known. Panel C shows the other sample, which consists of transactions by the cross-listers before cross-listing (Before c-listing), while being cross-listed (During c-listing) and after cross-delisting (After c-listing). In addition, panel C reports the number of acquisitions, in which the method of payment is known.

Panel A: Sample filtering

	N
SDC	9463
Minority stake after acquisition	-307
Acquisition not completed	-1436
Value of deal less than $1 million or unavailable	-4210
Total transactions	3510

Panel B: Sample 1 - Cross-listers and control sample

	Cross-listed acquirer		**Non-cross-listed acquirer**		**Total**
	N	Percent	N	Percent	N
Transactions in the overall analysis with control sample	451	32.2%	951	67.8%	1402
Of which method of payment known	290	32.8%	595	67.2%	885

Panel C: Sample 2 - Cross-listers before, during, and after cross-listing

	Before c-listing		**During c-listing**		**After c-listing**		**Total**
	N	Percent	N	Percent	N	Percent	N
Transactions in the analysis before, during, and after cross-listing	105	16.7%	451	71.8%	72	11.5%	628
Of which method of payment known	64	15.7%	290	71.3%	53	13.0%	407

and 951 acquisitions by the control companies, and Sample 2, with 105 transactions before cross-listing, 451 transactions during cross-listing, and 72 transactions after cross-delisting.

5.1.4 Publication hits

In order to investigate the visibility of the sample companies in prestigious business publications, I hand collect a unique database of publication hits from LexisNexis. I check

how many times the sample companies have appeared in the headline of Wall Street Journal, Financial Times, or Business Week during a one-year period ending ten days after the announcement of an M&A transaction. The logic behind this time period is that managerial hubris should be visible already prior to an M&A transaction and also in connection with the deal. In the analysis of differences in various subsamples, outlier companies that capture 5% or above of the total hit volume of that subsample are removed from the analysis.

5.1.5 Other data

In order to calculate cumulative abnormal returns, I need time series data for my sample acquirers before and after the announcement date. This data is retrieved through Datastream, from which I also retrieve time series data for the relevant market indices for each acquirer country in my sample, relevant exchange rate data, and money market rates. It is worth noting that all the time series data for the individual companies, market indices, and money market funds are retrieved in local currencies and, hence, percentage CARs are based entirely on local currencies and, consequently, are free from the effect of changes in exchange rates.

Acquirer financials are retrieved through Worldscope, and are U.S. dollar denominated. The data available from the Worldscope needs adjustments for various reasons. For example P/E-ratio is meaningless when earnings are below zero. In order to keep my sample unbiased, I only make adjustments to the data in cases when the data from Worldscope has questionable economic sense or is a clear outlier. I make the following adjustments. Unavailable values are left untouched. Return on assets is required to be at least -200%, and interest coverage ratio is limited to a range between -100 and 100. P/B-ratio is limited to max 50, and all companies that have a negative P/B-ratio are given a ratio of 50. P/E-ratio is adjusted to 0.1 if negative and to 100 if over 100. In the analysis of cross-listing and cross-delisting likelihood as the first step of the Heckman (1979) process, I calculate a number of variables as three-year averages to remove yearly fluctuations. For some observations, the three year figures are not available. In these cases, I use the longest available time period for averaging the figures.

5.1.6 Descriptive statistics of the cross-lister and control sample

Figure 3 shows quite clearly the trend of cross-listings and cross-delistings that was described earlier in section 2.1. Cross-listings in the U.S. by European companies were still relatively

rare in the beginning of the 1980s, but they gradually became more common towards the beginning of the 1990s peaking around 1995 with 27 annual cross-listings. Cross-listings remained quite popular until the passage of Sarbanes Oxley in 2002, which collapsed the number of cross-listings to only few per year. Cross-delistings, on the other hand, were very rare until 1995, from where they started to climb gradually, amounting to 17 annual cross-delistings by 2002. Cross-delistings remained near at these relatively high levels until 2007, when it become possible to deregister one's share with the SEC if only 5% of the global trading volume in the stock came from the U.S.. This exploded the number of cross-delistings as 49 European companies cross-delisted their shares from the U.S. during 2007. In the year 2008, cross-delistings settled back to a low level of eight annual cross-delistings. This was due to the very high number of companies, who instantly reacted to the change in the deregistering requirements, and already delisted during 2007 and, hence, there were very few prospective delisters left.

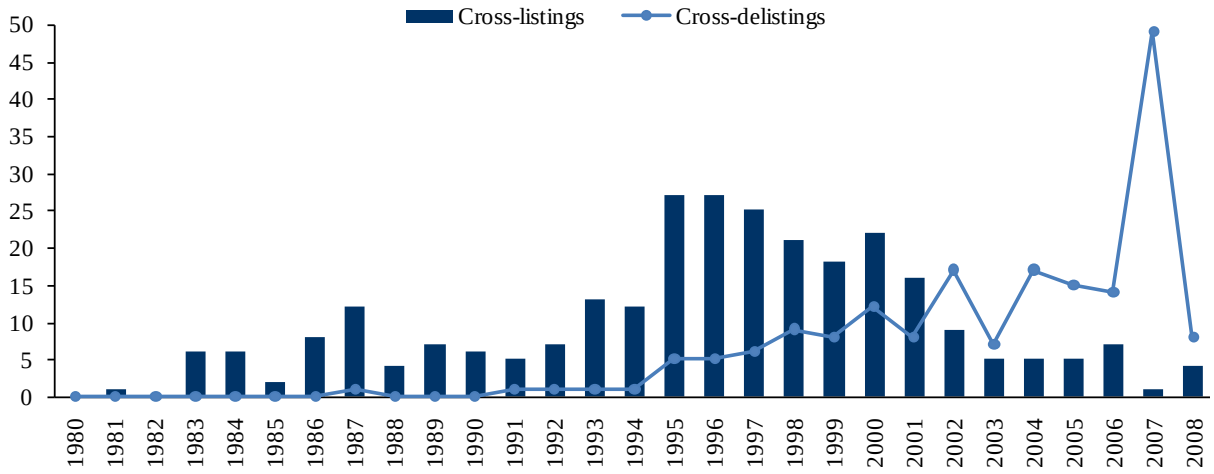

Figure 3: Annual cross-listings and cross-delistings This figure shows the distribution of 281 European cross-listings to the U.S. stock exchanges between 1980 and 2008. Also shown is the number of these cross-listings that subsequently cross-delisted during the sample period.

Panel A in Table 5 shows the distribution of the cross-listing sample by country of origin for cross-listers, control sample, and whole sample. As can be seen, United Kingdom dominates the total sample with 278 (29.3%) observations. Also France and Germany are very well represented with 112 (11.8%) and 95 (10.0%) observations, respectfully. UK, unsurprisingly, also dominates the cross-lister sample with 98 (34.9%) observations. However, it seems that companies from the UK tend to be cross-listed more often than their frequency in the overall sample would imply. This is likely to be associated with the fact that the cultural fit between UK and U.S. is quite high due to legislative, linguistic, and political proximity. (see, e.g., Sarkissian and Schill, 2004). Also Netherlands seems to be even more overrepresented in

Table 5: The cross-lister and control sample by country of origin and by industry

This table shows the distribution a sample of 281 European companies that have been cross-listed in the U.S. between 1.1.1980 and 31.12.2008, and the distribution of the control sample, which includes those companies from the Dow Jones STOXX Total Market Index for Europe (December 2008 version) that have not been cross-listed. Both the cross-lister sample and the control sample exclude financial companies (first digit of SIC code 6) due to differences in their financial reporting.. Europe is defined as the original EU-15 countries and Norway and UK. Panel A shows the distribution of the cross-listers by country of origin as in the Thomson Financial Worldscope database (Worldscope), and Panel B shows the distribution by industry, determined by the SIC code as in the Worldscope database.

Panel A: Distribution by country of origin

	Cross-listed		**Only domestically listed**		**Total**	
Country of origin	N	Percent	N	Percent	N	Percent
Austria	1	0.4%	14	2.1%	15	1.6%
Belgium	3	1.1%	20	3.0%	23	2.4%
Denmark	4	1.4%	19	2.8%	23	2.4%
Finland	7	2.5%	29	4.3%	36	3.8%
France	38	13.5%	74	11.1%	112	11.8%
Germany	18	6.4%	77	11.5%	95	10.0%
Greece	7	2.5%	16	2.4%	23	2.4%
Italy	12	4.3%	41	6.1%	53	5.6%
Ireland	15	5.3%	11	1.6%	26	2.7%
Luxembourg	8	2.8%	4	0.6%	12	1.3%
Netherlands	29	10.3%	27	4.0%	56	5.9%
Norway	10	3.6%	17	2.5%	27	2.8%
Portugal	2	0.7%	7	1.0%	9	0.9%
Spain	5	1.8%	40	6.0%	45	4.7%
Sweden	13	4.6%	39	5.8%	52	5.5%
Switzerland	11	3.9%	53	7.9%	64	6.7%
United Kingdom	98	34.9%	180	26.9%	278	29.3%
Total	**281**	**100.0%**	**668**	**100.0%**	**949**	**100.0%**

Panel B: Distribution by industry

	Cross-listed		**Only domestically listed**		**Total**	
Industry	N	Percent	N	Percent	N	Percent
Mining and construction (SIC 1)	21	7.5%	72	10.7%	93	9.8%
Manufacturing: foods, textiles etc. (SIC 2)	60	21.4%	142	21.1%	202	21.3%
Manufacturing: plastics, metals etc. (SIC 3)	62	22.1%	172	25.7%	234	24.7%
Transportation and communications (SIC 4)	71	25.3%	110	16.5%	181	19.1%
Wholesale and retail trade (SIC 5)	14	5.0%	70	10.5%	84	8.9%
Finance, insurance, and real estate (SIC 6)	-	-	-	-	-	-
Personal and business services (SIC 7)	42	14.9%	72	10.8%	114	12.0%
Health, legal, educational services (SIC 8)	10	3.6%	29	4.3%	39	4.1%
Public administration (SIC 9)	1	0.4%	1	0.1%	2	0.2%
Total	**281**	**100.0%**	**668**	**100.0%**	**949**	**100%**

the cross-lister sample than the UK as its overall percentage in the whole sample is only 5.9%, but it holds a share of 10.3% in the cross-lister sample. Also Ireland has a substantially higher proportion in the cross-lister than in the overall sample (5.3% vs. 2.7%).

Panel B of Table 5 describes the distribution of the cross-lister sample, control sample and combined sample by industry determined by the SIC code. The industry classes SIC 4, Transportation and communication, as well as SIC 7, Personal and business services, seem to be somewhat overrepresented in the cross-lister sample when compared to the whole sample (25.3% vs. 19.1% and 14.9% vs. 12.0%, respectfully). This might be explained by a number of factors such as the reliance on foreign expertise, i.e. companies choose to cross-list to locations where the most talented and experienced analysis of a given sector is present (see, e.g., Blass and Yafeh, 2001). It is quite straightforward to see that this might partly explain the large number of high-tech companies, usually having a SIC code beginning with 4 or 7, listing to the Nasdaq at the beginning of this millennium.

Table 6 shows the financial performance of cross-listers prior to cross-listings, as well as the financial performance of the control sample for the year 2007. These figures are interesting as they might shed light on the decision of some companies to cross-list in the first place. However, disappointingly there are quite small differences between the two groups. They seem to be of roughly equal size when looking at the average figures, however, median figures indicate that the companies in the control sample are substantially larger, no matter if we look at market based size measures, i.e. market capitalization and enterprise value (EV), or total assets. It should be noted here, however, that as all the figures are nominal values, cross-listers are at a size disadvantage, as their cross-listing has in the vast majority of the cases occurred prior to 2008. There does not seem to be large differences in the relative indebtedness or the sales growth of the cross-listers and control group companies in contrast to the findings of Pagano et al. (2002), who concluded that companies seem to cross-list after a high growth period, which left them highly leveraged.

What is notable, however, is that the return on assets (ROA) is substantially worse for the cross-lister group, indicating that one motivation for cross-listing could be to strengthen the company's ROA. Theory suggests that by cross-listing, the company can lower also the cost of its debt capital, hence, improving ROA. The most striking difference between the groups is, however, the one in research and development costs. Whereas the median value of R&D

Table 6: Financial performance of the cross-listers and control sample

Panel A of this table shows the financial performance of a sample of 281 European companies that have been cross-listed in the U.S. during 1.1.1980-31.12.2008. Financial performance is shown prior to the cross-listing, i.e. according to the last financial year before the year of cross-listing. Europe is defined as the original EU-15 countries and Norway and UK. The table shows the number of observations (N), average, median and standard deviation (Std.) of a number of financial variables. Panel B reports the same characteristics at end of year 2007 for the control sample, which includes those companies from the Dow Jones STOXX Total Market Index for Europe (December 2008 version) that are not cross-listed. Both the cross-lister sample and the control sample exclude financial companies (first digit of SIC code 6) due to the differences in their financial reporting. All financials are from Thomson Financial Worldscope database. Market cap is the value of the company's common stock. Net debt is defined as short-term debt and long-term debt less cash and cash equivalents. Enterprise value (EV) is defined as market capitalization + net debt. Sales growth is annualized three-year growth rate. Return on assets (ROA) is net income / total assets. Interest coverage ratio is defined as interest expenses on debt / EBITDA. Quick ratio is current assets less inventories / current liabilities. Price-to-book (P/B) is market cap / book value of equity and price-to-earnings (P/E) is price per share / earnings per share.

Panel A:Cross-lister sample

Financial	N	Median	Average	Std.
Market capitalization ($m)	123	1,976	7,897	20,181
EV ($m)	106	3,403	10,885	23,873
Total assets ($m)	215	1,720	10,052	28,677
Net debt-to-EV	106	13.1%	18.8%	31.1%
3-year sales growth	101	11.2%	16.1%	34.3%
ROA	214	4.2%	0.1%	23.3%
R&D expenses/ sales	116	3.6%	22.4%	99.4%
Quick ratio	212	97.0%	140.3%	180.8%
Cash ratio	179	12.2%	37.3%	102.4%
Interest coverage ratio	205	6.53	7.52	31.82
P/B	122	2.56	6.27	10.54
P/E	122	14.36	21.05	24.46

Panel B: Control sample

Financial	N	Median	Average	Std.
Market capitalization ($m)	586	3,161	6,976	14,756
EV ($m)	576	4,145	9,372	19,197
Total assets ($m)	668	3,401	10,898	27,633
Net debt-to-EV	576	14.1%	17.6%	22.4%
3-year sales growth	653	10.0%	18.8%	80.0%
ROA	667	6.0%	7.1%	11.5%
R&D expenses/ sales	325	1.5%	4.5%	16.1%
Quick ratio	660	93.4%	113.3%	88.7%
Cash ratio	656	15.6%	28.0%	47.0%
Interest coverage ratio	663	9.90	19.22	26.99
P/B	586	2.77	4.58	7.56
P/E	585	16.04	19.64	17.74

costs to sales was 3.6% for the cross-listers, the control group invested less than half of this to research. Looking at the averages, the difference is even greater (22.4% vs. 4.5%). This is in

line with the view that more technology oriented firms choose to cross-list to the U.S. possible due to the proximity of most skillful analysts to cover them (Blass and Yafeh, 2001).

5.1.7 Descriptive statistics of Sample 1 – M&A deals by cross-listers and control group

Table 7 below shows the distribution of number of deals and value of the deals in Sample 1. It can be clearly seen that there is indeed a time trend in acquisitions: they tend to occur in so called merger waves. The first merger wave in my sample occurred during the 2000 - 2001 dot-com bubble, and the second wave during 2006 - 2007. As is evident, the first merger wave was associated with higher M&A deal volume than the latter one. This supports the common view according to which the wave at the turn of the millennium peaked higher than the most recent boom.

Table 7: Number of deals and value of deals by year

The table shows the annual number of deals and value of deals in $millions carried out by a sample of 281 European companies while being cross-listed in the U.S. between 1.1.1996 and 31.12.2008, excluding those companies that cross-listed prior to 1980. The table also shows the acquisitions carried out by the control sample, which includes those companies from the Dow Jones STOXX Total Market Index for Europe (December 2008 version) that are not cross-listed at the time of the acquisition. Both the cross-lister sample and the control sample exclude financial companies (first digit of SIC code 6) due to differences in their financial reporting. Europe is defined as the original EU-15 countries and Norway and UK. Shown is also the annual distribution of number of deals, percentage of deals, value of deals, and percentage of the value of deals for the total sample including both cross-listed and non-cross-listed acquirers.

	Cross-listed acquirer		**Non-cross-listed acquirer**		**Total sample**			
Year	N	$m	N	$m	N	Percent	$m	Percent
1996	13	7,729	56	12,676	69	4.9%	20,405	2.7%
1997	23	6,231	63	12,615	86	6.1%	18,846	2.5%
1998	43	37,719	74	18,936	117	8.3%	56,654	7.6%
1999	55	28,166	85	96,746	140	10.0%	124,912	16.8%
2000	70	79,258	110	71,014	180	12.8%	150,272	20.2%
2001	32	19,858	66	32,094	98	7.0%	51,953	7.0%
2002	29	5,065	58	13,027	87	6.2%	18,091	2.4%
2003	23	4,020	55	8,290	78	5.6%	12,311	1.7%
2004	28	9,478	61	7,348	89	6.3%	16,825	2.3%
2005	32	18,243	64	23,910	96	6.8%	42,153	5.7%
2006	37	51,227	91	22,929	128	9.1%	74,156	10.0%
2007	46	64,250	95	68,786	141	10.1%	133,037	17.9%
2008	20	4,811	73	19,567	93	6.6%	24,377	3.3%
Total	**451**	**336,056**	**951**	**407,937**	**1402**	**100.0%**	**743,992**	**100.0%**

As Table 8 shows, UK, France and Germany are, unsurprisingly, most well represented in the acquirer sample. However, what is more important, is that although companies from UK hold only 29.3% of the cross-lister and control firm samples, these companies account for 44.5% of the acquisitions carried out. This is likely to be due to the cultural proximity of UK and

Table 8: The cross-lister and control sample transactions by bidder country of origin and by target industry

This table shows the distribution of acquisitions by a sample of 281 European companies that were cross-listed in the U.S. at the time of the acquisition, i.e. between 1.1.1996 and 31.12.2008, excluding those companies that cross-listed prior to 1980. The table also shows the distribution of acquisitions by the control sample during the same time period. The control sample includes those companies from the Dow Jones STOXX Total Market Index for Europe (December 2008 version) that are not cross-listed at the time of the acquisition. Both the cross-lister sample and the control sample exclude financial companies (first digit of SIC code 6) due to the differences in their financial reporting. Europe is defined as the original EU-15 countries and Norway and UK. Panel A shows the distribution of the transactions by bidder country of origin as in the Thomson Financial Worldscope database (Worldscope), and Panel B shows the distribution by target industry, determined by the SIC code as in the SDC Mergers and Acquisitions database.

Panel A: Transactions by bidder country of origin

	Cross-listed acquirer		**Non-cross-listed acquirer**		**Total sample**	
Country of origin	N	Percent	N	Percent	N	Percent
Austria	0	0.0%	7	0.7%	7	0.5%
Belgium	11	2.4%	17	1.8%	28	2.0%
Denmark	1	0.2%	16	1.7%	17	1.2%
Finland	17	3.8%	23	2.4%	40	2.9%
France	93	20.6%	72	7.6%	165	11.8%
Germany	53	11.8%	82	8.6%	135	9.6%
Greece	0	0.0%	4	0.4%	4	0.3%
Italy	5	1.1%	13	1.4%	18	1.3%
Ireland	41	9.1%	33	3.5%	74	5.3%
Luxembourg	0	0.0%	3	0.3%	3	0.2%
Netherlands	54	12.0%	39	4.1%	93	6.6%
Norway	7	1.6%	11	1.2%	18	1.3%
Portugal	1	0.2%	0	0.0%	1	0.1%
Spain	2	0.4%	18	1.9%	20	1.4%
Sweden	13	2.9%	56	5.9%	69	4.9%
Switzerland	25	5.5%	61	6.4%	86	6.1%
United Kingdom	128	28.4%	496	52.2%	624	44.5%
Total	**451**	**100.0%**	**951**	**100.0%**	**1402**	**100.0%**

Panel B: Transactions by target industry

	Cross-listed acquirer		**Non-cross-listed acquirer**		**Total sample**	
Industry	N	Percent	N	Percent	N	Percent
Mining and construction (SIC 1)	22	4.9%	52	5.5%	74	5.3%
Manufacturing: foods, textiles etc. (SIC 2)	99	22.0%	166	17.5%	265	18.9%
Manufacturing: plastics, metals etc. (SIC 3)	118	26.2%	334	35.1%	452	32.2%
Transportation and communications (SIC 4)	36	8.0%	80	8.4%	116	8.3%
Wholesale and retail trade (SIC 5)	30	6.7%	80	8.4%	110	7.8%
Finance, insurance, and real estate (SIC 6)	27	6.0%	64	6.7%	91	6.5%
Personal and business services (SIC 7)	88	19.5%	115	12.1%	203	14.5%
Health, legal, educational services (SIC 8)	29	6.4%	59	6.2%	88	6.3%
Public administration (SIC 9)	2	0.4%	1	0.1%	3	0.2%
Total	**451**	**100.0%**	**951**	**100.0%**	**1402**	**100.0%**

U.S.. Besides UK, the acquisitions are geographically dispersed quite similarly than the companies in the underlying company samples. Panel B of Table 8 shows the distribution of the sample acquisitions by the industry of the target. The data provides no real surprises as there are no large differences between the target industries of cross-listed and non-cross-listed acquirers, except that cross-listed acquirers seem to be acquiring substantially more personal and business services companies and substantially less plastic and metals manufacturing companies than the control group. As companies tend to bid for firms that are from the same industry than themselves, this result is explained by the fact that cross-listers themselves tend to come more from SIC 7 and less from SIC 3, as they are more often or not technology oriented companies.

Table 9 reports a number of key characteristics of the M&A transactions in Sample 1. It can be clearly seen that the cross-listers have made larger acquisitions in absolute dollar terms than the non-cross-listed acquirers during the sample period. The median value of a transaction where cross-lister is the acquirer is $115.0m, 119% above the median value of a transaction by the control group. The size effect is also robust to the usage of simple average ($745.1m vs. $429.0m). This is somewhat different to that shown by Tolmunen and Torstila (2005), who in fact document that the acquirer's in their control sample seem to be making slightly larger transaction than the acquirer's in the cross-lister group. Actually, a similar pattern is also visible in my data, if one looks at the relative size of the acquisitions, i.e. deal value to market capitalization of the acquirer. Utilizing this more informative approach to size measurement, it seems that the control group has made relatively somewhat larger transactions than the cross-lister group.

What is more striking than this small difference in relative deal size is, however, the large differences in payment methods between the cross-listers and the control group, as the average equity-financing in the acquisitions by the cross-listers is 16.4% compared to meager 4.9% for the control group. This finding is well in line with the hypothesis that cross-listing enables the usage of equity as an acquisitions currency and, hence, cross-listers engage in larger and more equity-financed transaction than their domestically listed peers. This can be even more clearly seen in the percentage of transactions completely equity-financed: 12.1% for cross-listers and 2.5% for the control group. Also the total volume of transaction financed with equity is 26.6% for the cross-listers, compared to 23.0% for the control group.

Table 9: Descriptive statistics of the transactions of the cross-lister and control sample

Panel A of this table shows a number of deal characteristics for 451 M&A transaction carried out by a sample of 281 European companies while being cross-listed in the U.S. during 1.1.1996-31.12.2008, excluding those companies that cross-listed prior to 1980. Panel B of the table shows the same deal characteristics for a sample of 915 acquisitions carried out by the control sample, which includes those companies from the Dow Jones STOXX Total Market Index for Europe (December 2008 version) that are not cross-listed at the time of the acquisition. Both the cross-lister sample and the control sample exclude financial companies (first digit of SIC code 6) due to differences in their financial reporting. Europe is defined as the original EU-15 countries and Norway and UK. N refers to the number of M&A transactions, where the characteristics in question can be determined. Transaction value is the deal value from the Thomson Financial SDC database (SDC), % of shares acquired and resulting ownership % is from SDC, Market capitalization (Mcap) of the acquirer is from Worldscope database 21 trading days prior to deal announcement, % of equity financing, percent of volume equity financed and percent 100% equity financed is from SDC. A target is defined as a non-public target if SDC categorizes it as either a private target of subsidiary of a public target.

Panel A: Cross-listed acquirers

	N	Median	Average	Std. deviation	Percent
Transaction value ($m)	451	115.0	745.1	2,146.9	
% of shares acquired	451	100.0%	95.7%	14.9%	
Resulting ownership %	451	100.0%	98.8%	7.0%	
Transaction value / Mcap of the acquirer	451	1.3%	7.3%	21.5%	
% of equity financing	290	0.0%	16.4%	34.9%	
Percent of volume equity-financed	290				26.6%
Percent 100% equity-financed	290				12.1%
Percent non-public target	451				75.6%

Panel B: Non-cross-listed acquirers

	N	Median	Average	Std. deviation	Percent
Transaction value	951	52.4	429.0	2,325.0	
% of shares acquired	951	100.0%	97.0%	13.3%	
Resulting ownership %	951	100.0%	99.0%	6.2%	
Transaction value / Mcap of the acquirer	951	1.6%	8.2%	35.3%	
% of equity financing	595	0.0%	4.9%	19.5%	
Percent of volume equity-financed					23.0%
Percent 100% equity-financed	595				2.5%
Percent non-public target	951				81.4%

The smaller difference in this measure indicates that cross-listers tend to use equity as a payment method for smaller transactions than the control group, who seems to use equity only for the largest acquisitions. This is likely to be associated with the fact that foreign equity is regarded as an inferior acquisition currency in the U.S. and, thus, the control group chooses to use it only in the most sizable transactions. It also seems that the cross-listers acquire somewhat more public entities than the non-cross-listed acquirers. This is how one would expect, as the higher amount of deals financed with equity is likely to be at least partly a results of more acquisitions of public targets.

5.1.8 Descriptive statistics of Sample 2 – M&A deals by cross-listers before cross-listing, during cross-listing, and after cross-delisting

In addition to comparing the acquisition performance of the cross-listers and the control group, my Hypotheses 6, 7, and 9 relate to the acquisition behavior of cross-listers at different times of the cross-listing cycle, i.e. before cross-listing, during cross-listing, and after cross-delisting. Having looked at the descriptive statistics of Sample 1, I now move on to discuss the properties of Sample 2.

Table 10 on the next page, shows various characteristics of the transactions in Sample 2. When one compares Panel A, showing the characteristics of acquisitions before cross-listing, and Panel B, showing acquisitions during cross-listing, there does not seem to be any dramatic differences. It, however, seems that the transactions made by the cross-listers prior to cross-listing are somewhat larger than those made while being cross-listed. It also seems that the sample companies used equity more frequently as a payment method, and more often purchased public companies before their cross-listing. The results are somewhat puzzling as Tolmunen and Torstila (2005) found the opposite to hold for cross-listers, as their results indicated that mean transaction size and percentage of equity financing increase dramatically after a company cross-lists. It might be that the behavior of cross-listing companies has changed somewhat during this decade, and the companies that eventually choose to cross-list, have been making large equity-financed transaction in the U.S. already before cross-listing. Supporting this notion, Tolmunen and Torstila show that the companies that eventually choose to cross-list in the U.S. have been quite acquisitive in the U.S. already before the cross-listing. It might be the case that as obstacles of holding and trading foreign equity have grown smaller during this decade, the role of cross-listed stock as an acquisition currency is perhaps not as important as it used to be.

Most interesting aspect in Table 10, however, is the comparison of acquisitions during cross-listing, in Panel B, to acquisitions after cross-delisting, in Panel C. What can be instantly seen, is the fact that after a company cross-delists, the median deals size nearly halves ($115.0m vs. $53.0m), the average percentage of equity-financing plummets from 16.4% to 2.5%, the volume of deals financed with equity drops from 26.6% to 0.2%, and the amount of entirely equity-financed deals drops from 12.1% to zero. It seems that, as Hypothesis 7 suggest, cross-delisting marks the end of a U.S. acquisition spree, as evidenced by smaller and cash-financed deals being the new norm. As there are no extant studies on the effect of cross-delisting to

Table 10: Descriptive statistics of the transactions of the cross-lister sample

This table shows a number of deal characteristics for 628 M&A transaction carried out during 1.1.1996-31.12.2008 by a sample of 281 European companies that have been cross-listed in the U.S. during 1.1.1980-31.12.2008. Financial companies are excluded (first digit of SIC code 6). Europe is defined as the original EU-15 countries and Norway and UK. Panel A shows the deal characteristics for the 105 acquisitions by sample companies prior to cross-listing. Panel B shows the same characteristics for 451 acquisitions carried out by the sample companies while being cross-listed in the U.S.. Panel C shows the same characteristics for 72 acquisitions performed by the sample companies after they have cross-delisted their shares from the U.S. stock exchanges. N refers to the number of M&A transactions, where the characteristics in question can be determined. Transaction value is the deal value from the Thomson Financial SDC database (SDC), % of shares acquired and resulting ownership % is from SDC, Market capitalization (Mcap) of the acquirer is from Worldscope database 21 trading days prior to deal announcement, % of equity financing, percent of volume equity financed and percent 100% equity financed is from SDC. A target is defined as a non-public target if SDC categorizes it as either a private target of subsidiary of a public target.

Panel A: Before cross-listing

	N	Median	Average	Std. deviation	Percent
Transaction value	105	130.0	1,190.0	5,959.9	
% of shares acquired	105	100.0%	96.7%	13.8%	
Resulting ownership %	105	100.0%	98.8%	6.9%	
Transaction value / Mcap of the acquirer	105	1.6%	15.8%	39.3%	
% of equity financing	64	0.0%	19.8%	38.0%	
Percent of volume equity-financed	64				57.0%
Percent 100% equity-financed	64				9.5%
Percent non-public target	105				67.6%

Panel B: During cross-listing

	N	Median	Average	Std. deviation	Percent
Transaction value	451	115.0	745.1	2,146.9	
% of shares acquired	451	100.0%	95.7%	14.9%	
Resulting ownership %	451	100.0%	98.8%	7.0%	
Transaction value / Mcap of the acquirer	451	1.3%	7.3%	21.5%	
% of equity financing	290	0.0%	16.4%	34.9%	
Percent of volume equity-financed	290				26.6%
Percent 100% equity-financed	290				12.1%
Percent non-public target	451				75.6%

Panel C: After cross-delisting

	N	Median	Average	Std. deviation	Percent
Transaction value	72	53.0	374.2	797.0	
% of shares acquired	72	100.0%	96.7%	13.3%	
Resulting ownership %	72	100.0%	98.0%	8.8%	
Transaction value / Mcap of the acquirer	72	0.9%	2.9%	5.5%	
% of equity financing	53	0.0%	2.5%	12.9%	
Percent of volume equity-financed	53				0.2%
Percent 100% equity-financed	53				0.0%
Percent non-public target	72				73.6%

M&A activity, it will be interesting to see, whether these smaller and less equity-financed deals in fact translate into better acquisition performance after cross-delisting, as one would easily assume given the prior literature on the superiority of small and cash financed deals in acquirer value creation.

5.2 Methodology

In this section, I briefly present the methodology which I use in the empirical section of this thesis to test the nine hypotheses laid down in the previous chapter. First, I introduce event study methodology, then regressions, and conclude by presenting my regression variables.

5.2.1 Event study methodology

This paper uses an event study approach in measuring the shareholder wealth effects of transatlantic M&A transactions. Both percentage cumulative abnormal returns (CARs) as well as dollar cumulative abnormal returns ($CARs) are calculated over three short-term event windows, i.e. [-1;+1], [-3;+3], and [-5;+5]. The reason for calculating both percentage and dollar CARs is that, as discussed in section 3.2.1, percentage abnormal returns do not always effectively capture the change in the wealth of bidder's shareholders due to differences in the market values of the sample companies (see, e.g., Malatesta, 1983). For example Moeller et al. (2004) showed that although percentage cumulative abnormal returns for bidders would be positive, dollar cumulative abnormal returns might very well be heavily negative due to the fact that larger deals seem to be worse. Hence, it is important to study both percentage and dollar cumulative abnormal returns to better understand the underlying phenomenon.

Event study methodology has its roots in the studies of Fama, Fisher, Jensen, and Roll (1969), and the methodology is quite thoroughly covered in for example Brown and Warner (1985). To calculate CARs, I first estimate a market model for each acquirer in the sample transactions. I do this by regressing the daily excess returns of the acquirer on the daily excess returns of the local stock market over a clean 200 day period starting 220 days prior to the announcement date. It should be noted here that the used market indices are the Morgan Stanley Capital Investment (MSCI) country price indices for each country, and country specific money market rates are used as the risk-free rate. Performing the above mentioned

regressions allows me to determine the market model parameters alfa ($\hat{\alpha}_i$) and beta ($\hat{\beta}_i$) for each of the acquirers. Equation 1 below shows the market model in question.

$$(r_{it} - r_{ft}) = \hat{\alpha}_i + \hat{\beta}_i(r_{mt} - r_{ft}) \,, \tag{1}$$

where

r_{it} = Logarithmic rate of return for firm i on day t

r_{mt} = Logarithmic rate of return for the relevant market index m on day t

r_{ft} = Logarithmic daily money market rate for the relevant money market f on day t

Having obtained estimates for alfa and beta from the market model (Equation 1), the next step is to calculate the expected daily returns, $E(r_{it} - r_{ft})$, around the announcement date for each acquirer i using Equation 2:

$$E(r_{it} - r_{ft}) = \hat{\alpha}_i + \hat{\beta}_i(r_{mt} - r_{ft}) \tag{2}$$

Then, abnormal returns (AR_{it}) for each firm i are calculated (Equation 3), and further averaged over the sample acquirers (Equation 4), sample size being denoted by n.

$$AR_{it} = (r_{it} - r_{ft}) - \left[\hat{\alpha}_i + \hat{\beta}_i(r_{mt} - r_{ft})\right] \tag{3}$$

$$\overline{AR_t} = \frac{1}{n}\sum_{i=1}^{n} AR_{it} \tag{4}$$

The abnormal return is, hence, the actual return less that predicted by the model in the case that no event would have taken place (Equation 2). This allows me to isolate the wealth effect of the announcement of the acquisition from general market movement. In order to correct for the effect of leaking investor information as well as for slow price adjustment, it is common practice in event studies to cumulate the abnormal return over a window of time around the event date. Thus, I calculate average CARs over a time window $[d_{1i}; d_{2i}]$ as:

$$\overline{CAR} = \sum_{t=d_{1i}}^{d_{2i}} \overline{AR_t} \tag{5}$$

In addition to merely calculating the CARs, I also test for their significance in order to determine whether the observed CARs are more likely to be a result of chance or of actual tendency found in the population. In order to do this, I need the standard deviation of the CARs. Hence, I first calculate the average abnormal return over the relevant event window (Equation 6), then using this, the standard deviation ($S(\overline{AR})$) of the abnormal returns (Equation 7), and finally, I am able to calculate the standard deviation of the CARs over a the relevant time window, the length of which is L days (Equation 8).

$$\overline{\overline{AR}} = \frac{1}{200} \sum_{t=-220}^{t=-21} \overline{AR_t} \tag{6}$$

$$S(\overline{AR}) = \sqrt{\frac{1}{199} \sum_{t=-220}^{t=-21} (\overline{AR_t} - \overline{\overline{AR}})^2} \tag{7}$$

$$S(\overline{CAR}) = \sum_{t=d_1}^{t=d_2} S(\overline{AR}) = \sqrt{L}\, S(\overline{AR}) \tag{8}$$

Having obtained $\overline{CAR}$ from Equation 5 and $S(\overline{CAR})$ from Equation 8, I can now calculate the t-statistic in order to test a null hypothesis stating zero CARs over the event window. By observing the t-statistics, I can make conclusions on the statistical significance of the acquirer CARs. The test statistic is calculated as follows:

$$t - statistic = \frac{\overline{CAR}}{S(\overline{CAR})} \tag{9}$$

The above derivation concerns the calculation of percentage cumulative abnormal returns (CARs). Consequently, I also need to use a specific method to calculate the dollar cumulative abnormal returns ($CARs). Fortunately, there is a straightforward formula, which relates percentage abnormal returns to dollar abnormal returns, namely:

$$\$\mathrm{CAR_i} = \mathrm{CAR_i} * \mathrm{MV_{it_{d_1-1}}} \quad (10)$$

where

$\mathrm{MV_{it_{d_1-1}}}$ = Market value of the common stock of company i one day prior to the start of the event period

5.2.2 Regressions

The effect of cross-listing and cross-delisting to CARs will be studied with ordinary least squares (OLS) regression models. The regression variables of the models will be explained in detail in the next section, 5.2.3. However, before OLS can be run, self-selection of the cross-listers in Sample 1 and self-selection of the cross-delisters in Sample 2 has to be taken into account. This is due to the fact that companies that choose to cross-list or cross-delist are not random draws from the population, but they rather choose to list or delist. This complicates the analysis so that one cannot directly estimate an OLS model for CARs with cross-listing or cross-delisting dummies, as the listing and delisting decisions might be related to CARs and, hence, the dummies and error terms would be correlated, possible leading to biased results.

In order to take into account the self selection in Sample 1, I use the Heckman (1979) two-step estimation method, i.e. I first estimate a self selection model, whose results I then use in the final OLS regressions to control for the bias. I follow Torstila and Tolmunen (2005) and employ a probit[4] model of cross-listing likelihood as a self selection model. I present here a short summary of the probit model, for a more thorough overview see, e.g., Green (1993). In the probit model there is an unobserved latent variable $CROSS_i^*$ and observed variable $CROSS_i$. In studying the company's decision to cross-list, the observed dependent variable, $CROSS_i$ receives a value of 0 if the company is not cross-listed at the time of the acquisition, and a value of 1 if the company is cross-listed at the time of the acquisition. The regression relation is defined in terms of the latent variable as:

$$CROSS_i^* = \gamma' c_i + e_i \,, \quad (11)$$

where

$CROSS_i = 1$ if $CROSS_i^* > 0$
$CROSS_i = 0$ if $CROSS_i^* \leq 0$

c_i = Set of variables affecting the likelihood of company i to cross-list

e_i = error term

This relation gives the probability function:

$$\begin{aligned} \text{Prob}(\text{CROSS}_i^* = 1) &= \text{Prob}(e_i > -\gamma' c_i) \\ &= 1 - F(-\gamma' c_i) \end{aligned} \tag{12}$$

where F is the cumulative distribution function for the error term, e_i. Hence, the functional form of F depends on the assumptions made by the e_i. In probit, it is assumed that the e_i is normally distributed. The likelihood function to be estimated is then:

$$L = \prod_{CL_i=0} F(-\gamma' c_i) \prod_{CL_i=1} [1 - F(-\gamma' c_i)] \tag{13}$$

As the first stage of Heckman (1979), I estimate the model in Equation 11 and obtain an estimate for γ'. Next, I calculate for each firm i the inverse Mills ratio, $\hat{\lambda}_i$ defined as:

$$\hat{\lambda}_i = \frac{ø(\gamma' c_i)}{\Phi(\gamma' c_i)} \tag{14}$$

where ø refers to the standard normal density distribution and Φ to cumulative distribution function. Then at the second stage of Heckman, I estimate an OLS model employing $\hat{\lambda}_i$ as an additional explanatory variable for the CARs.

The variables c_i, which I use to estimate the probability of cross-listing are derived from extant literature on cross-listings. The variables, which I employ, relate to both individual firms specific variables and to variables specific for the country of origin of the firm, as suggested by e.g. Doidge, Karolyi, and Stultz (2004).

The probit model of cross-listing likelihood follows the specification in Tolmunen and Torstila (2005). The firm level variables used are logarithm of assets at the last full year balance sheet date prior to an acquisition by a sample company, three-year average sales growth, three-year average P/E ratio, three-year average P/B ratio, and industry dummies based on the major industry class of the SIC code. The country level variables in my model are dummy variables for legal origin, accounting standards, and judicial efficiency as defined

in La Porta, Lopez-de-Silanes, Schleifer, and Vishny (1998). Following Doidge et al. (2004) as well as Tolmunen and Torstila (2005), I further include two additional variables, i.e. market liquidity, measured as the dollar value of shares traded in a given market divided by the average market capitalization of the market in the year 1997, and the logarithm of the country's per capita GNP in dollars for the same year.

Also cross-delisting is a conscious choice made by the sample companies and, hence, there might be same kind of self-selection issues in Sample 2 as in Sample 1. Thus, I also run OLS regressions separately for a subsample of Sample 2, containing only the acquisitions by companies during cross-listing and after cross-delisting. This allows me to employ the Heckman two-stage procedure to control for the effect of self-selection. I use as the first stage of Heckman a probit model of cross-delisting likelihood. This allows me to also enhance the knowledge on cross-delistings, as the matter has been previously studied by only two authors: Witmer (2005) and more recently after the change in SEC deregistering requirements Doidge et al. (2008).

The used probit model for cross-delisting is quite similar to the model for cross-listing, but the explanatory variables and the independent variable are different. Namely, in the probit model there is an unobserved latent variable $AFTER_i^*$ and observed variable $AFTER_i$. While studying the company's decision to cross-delist, the observed dependent variable, $AFTER_i$ receives a value of 0 if the company is still cross-listed at the time of the acquisition, and a value of 1 if the company has cross-delisted at the time of the acquisition. The regression relation is defined in terms of the latent variable in the same fashion as shown above for cross-listing.

The variables, which I use to estimate the probability of cross-delisting relate to both individual firms specific variables and to variables specific for the country of origin of the firm, as suggested by e.g. Doidge et al. (2008). The firm specific variables in my model are the leverage of the company defined as total debt divided by total assets, logarithm of assets, and three-year average sales growth. In addition to the sales growth, I also use global industry median Tobin's q for the year prior to the acquisitions to proxy for the growth opportunities of the company. Tobin's q is defined in the usual manner as book value of total assets less book value of equity plus market value of equity, all divided by the book value of total assets. The industry is defined according to the first two digits of the SIC code. I also include in the

model a measure of the company's shares held by insiders of the company. I proxy for this variable by the Worldscope data item closely held shares, which includes, but is not limited to, shares held by officers, directors, and their immediate families, shares held in trust, shares held by other corporations, by pension plans, and by individuals who hold 5% or more of the company's outstanding shares. In addition, I also add a dummy variable, which takes a value of 1 if the acquisition is made after the relaxation of deregistering requirements, i.e. post March 21, 2007, when SEC adopted Exchange Act Rule 12h-6, and zero otherwise.

Following Doidge et al. (2008), I obtain my country level variables from La Porta et al. (1998) and from Djankov, La Porta, Lopez-de-Silanes, and Schleifer (2008). I include a legal index, which is obtained by multiplying the anti-director rights variable from Djankov et al. by the rule of law index from La Porta et al.. Furthermore, I include stock market capitalization divided by GDP and the logarithm of GDP per capita in $. These two variables are calculated for the year prior to the deal, with the exception that year 2007 figures are used for 2008 as figures for this year were not yet available from the World Bank WDI database.

5.2.3 Regressions variables of the CAR models

The independent variables in the OLS models, where CAR is the dependent variable, include certain key acquirer financial ratios at the beginning of the year of the transaction, logarithm of the market capitalization of the acquirer 21 days prior to the acquisitions, and dummy variables reflecting quantitative and qualitative deal, target, and bidder characteristics. None of these variables should adversely affect the variance of the error term, and, hence, it can be assumed to be constant. This would imply that my regression is free from heteroscedasticity. However, the regressions could still be affected by multicollinearity, if there is a high correlation between some of the explanatory variables. To check this, I calculate the correlation between the regressors in my models (see Appendix A). As is evident, none of the regressors, excluding the inverse Mills ratios, are severely correlated with each other and, thus, the regressions should be free from multicollinearity. Next, I present each of variables used to explain wealth creation.

CROSS: A dummy variable to account for the effect of cross-listing. Takes a value of one if the acquirer is cross-listed in the U.S. at the time of the acquisition, and zero otherwise.

BEFORE: A dummy variable to take into account the effect of cross-listing. Receives a value of one if the acquirer has not yet been cross-listed in the U.S. at the time of the acquisition, and zero otherwise.

AFTER: A dummy variable to take into account the effect of cross-delisting. Receives a value of one if the acquirer has cross-delisted from the U.S. at the time of the acquisition, and zero otherwise. Dummies BEFORE and AFTER together categorize the acquisitions of Sample 2 in three classes: acquisitions made before, during, and after cross-listing.

% EQUITY: Percentage of the purchase price paid with equity.

TOEHOLD: A dummy variable to account for the effect of toehold. Receives a value of one if the bidder had ownership in the target prior to announcement of the deal according to SDC, zero otherwise.

DIVERSIFY: A dummy variable to take into account the effect of diversifying deals. Receives a value of one if the bidder and target are from different major industries as defined by the first two digits of the SIC code as in Worldscope, zero otherwise.

LANGUAGE: A dummy variable to account for cultural proximity of the target and the bidder. Takes a value of one if the official language of the acquirer's home country is English, and zero otherwise.

RER: A variable reflecting the differences in relative exchange rates between the target and the bidder home currencies. Following Harris and Ravenscraft (1991), I define *RER* as

$$RER_{it} = \frac{\overline{ER_\iota} - ER_{it}}{\overline{ER_\iota}}\,, \tag{15}$$

where $\overline{ER_\iota}$ is the average exchange rate between the currencies of the target and the bidder during 1996 - 2008 and ER_{it} is the exchange rate at the beginning of the acquisition year. I express exchange rates as US$1 equals of the number of foreign currency units, i.e. positive RER_{it} reflects a strong currency relative to the U.S. dollar.

LOG MCAP: Proxy variable for the size of the acquiring company. Defined as the logarithm of the market cap of the acquirer 21 days prior to the announcement of the deal in log $m.

EBIT MARGIN: A financial ratio reflecting the profitability of the acquirer prior to the transaction. Defined as the ratio of the acquirer's operating income to sales.

CASH RATIO: A financial ratio reflecting the size of the acquirer's cash reserves prior to the deal. Defined as the ratio of the acquirer's cash and short-term investments to its total assets.

LEVERAGE: A financial ratio reflecting the leverage of the acquiring company before the transaction. Defined as the ratio of total debt to market capitalization of the acquirer 21 days prior to the announcement of the deal.

NON-PUBLIC: A dummy variable to account for the effect of target being a non-public entity. Takes a value of one if the target is defined as a private company or a subsidiary of a public company in SDC, zero otherwise.

DEAL SIZE: The logarithm of the value of the transaction as shown in SDC in $m.

PUBLICATION Gives the number of times the name of the company was mentioned in the headline of Business Week, Financial Times, or Wall Street Journal during a one-year period ending 10 days after the announcement on an M&A transaction by the sample company as in LexisNexis database.

$\hat{\lambda}_1$: The inverse Mills ratio, estimated as the first stage of the Heckman (1979) two-stage model for Sample 1. Included in the model to overcome self-selection bias as cross-listed companies are not random draws from a population, but self-select.

$\hat{\lambda}_2$: The inverse Mills ratio, estimated as the first stage of the Heckman (1979) two-stage model for Sample 2. Included in the model to overcome self-selection bias as cross-delisted companies are not random draws from a population, but self-select.

INDUSTRY: Dummy variables to account for industry disturbance. There are seven industry dummies defined by the first digit of the SIC code. SIC 6, Finance, insurance, and real estate, is omitted and SIC 1, Mining and construction, acts as the base group.

YEAR: Dummy variables to account for merger waves. There are 12 year dummies for years 1997 - 2008 and year 1996 is the base case.

COUNTRY: Dummy variables to account for the effect of the home country of the acquirer. There are 16 dummy variables and Germany acts as the base group.

6 Empirical results

In this chapter, I present the empirical findings of my thesis. First, I discuss the visibility of the sample companies in prestigious publications to illustrate managerial hubris. Second, I go over the results on acquirer wealth effects to shed light on the absolute and relative value creation. Finally, I conclude the chapter by presenting the results of my regression analysis.

6.1 Visibility of the sample companies in prestigious publications

In this section, I elaborate on the visibility of my sample companies in three prestigious business publications, namely Business Week, Financial Times, and Wall Street Journal. It is interesting to see how prevalent the sample companies have been during a one-year period leading to an M&A transaction, as more publication hits act as a proxy for managerial hubris.

Table 11 shows the number of times the sample companies have appeared in the above mentioned publications on a one-year period ending ten days after the announcement of an M&A transaction by the sample company. As is evident, the cross-listed companies seem to be substantially more prevalent in these publications than their non-cross-listed peers, the average number of hits being 30.6 for the cross-listers and 12.8 for the control-group. However, it seems that the distribution of hits is somewhat more skewed for the non-cross-listed companies. Consequently, the difference in median is even relatively larger: median for cross-listed companies is 16, while it is a meager 5 for the control group. The differences in both average and median are highly significant, indicating that cross-listers tend to appear substantially more in these publications. Hence, there is strong support for Hypothesis 1.

As shown earlier by e.g. Pagano et al. (2002), cross-listed companies tend to be larger than non-cross-listed firms, and quite intuitively, the size of a company also increases its prominence in prestigious business publications. Hence, the results obtained above might be driven by the fact that the cross-listers are simply larger than the non-cross-listers. This can be checked with a robustness check where the publication hits are regressed over the size of the company as well as over a cross-listing dummy. Appendix B reports the results of this regression. The regression shows that cross-listing does indeed increase publication hits by an average of 11.4, even after we control for the effect of company size. The coefficient for the cross-listing dummy is statistically significant at the 1% level.

Table 11: Publication hits during a one-year period leading to an M&A transaction

The table shows the number of times when the companies in the sample have appeared in the headline of Wall Street Journal, Financial Times or Business week on a period of one year ending 10 days after the announcement of an M&A transaction by the sample company. The table also reports the t-statistic for the differences in the averages of the subsamples and z-statistic of the Wilcoxon rank sum test for the differences in the medians. Companies that hold 5% or more of the total hit volume of a subsample are removed from the analysis. The publication hits are obtained through LexisNexis keyword searches. Sample 1 includes 1,382 M&A transaction carried out by a sample of 281 European companies while being cross-listed in the U.S. during 1.1.1996-31.12.2008, excluding those companies that cross-listed prior to 1980, or by the control sample, which includes those companies from the Dow Jones STOXX Total Market Index for Europe (December 2008 version) that are not cross-listed at the time of the acquisition. The subsamples are labeled C-listed and Control group, respectively. Sample 2 includes 608 acquisitions by the sample of 281 cross-listers at different stages of the cross-listing cycle, i.e. before cross-listing, during cross-listing, and after cross-delisting. During cross-listing is the same subsample as C-listed, before cross-listing is labeled as Before c-listing and after cross-delisting is labeled as After c-listing. Both samples exclude financial companies (first digit of SIC code 6) due to differences in their financial reporting. Europe is defined as the original EU-15 countries and Norway and UK. Both acquisition samples are retrieved from the Thomson Financial SDC database, and include only completed acquisitions that result in majority ownership of the target by the bidder, and deal size is at minimum $1m.

	Sample 1			**Sample 2**			
	C-listed	Control croup	C-listed – control	Before c-listing	C-listed – before	After c-listing	After – during
Average	30.6	12.8	17.8***	33.0	-2.3	6.8	-23.9***
T-statistic			[11.08]		[-0.62]		[-4.38]
Median	16.0	5.0	11.0***	18.0	-2.0	4.0	-10.0
Z-statistics			[-9.88]		[-1.64]		[-0.93]
N	405	951		105		52	

***, **, and * denote two-tailed statistical significance at the 1%, 5%, and 10% level, respectively.

Let's consider a naïve example based on the regression analysis. A hypothetical European company with a market cap of $100 million appears in the headline of Business Week, Financial Times, and Wall Street Journal on average 11 times in the one year-period leading to an M&A transaction by the company. However, if the company cross-listed its shares to the U.S., it would appear on average 22 times. The same result could also by achieved by merely increasing the size of the company. However, to achieve the same number of hits than with cross-listing would require the company's market cap to grow to $40 billion!

However, the figures for Sample 2 on Table 11 do not support the view according to which cross-listing increases the visibility of a company in prestigious business publications. There is quite little difference in the publication hits before and during cross-listing, although both average and median number of hits are somewhat higher before cross-listing. This would indicate that the companies that choose to eventually cross-list are already prominent in the media prior to the cross-listing. This result supports a view, according to which the behavior of a company is quite similar prior and during cross-listing. This would entail that cross-

listing is likely to be only a symptom of larger managerial and hubris issues within the company, which are visible in the extensive publicity gotten by them.

It seems that companies get substantially less publicity around their M&A transactions after they have cross-delisted, as the average number of hits drops to 6.8 and median number of hits is only 4. The difference in the average number of hits during cross-listing and after cross-delisting is highly significant with a t-value of 4.38, supporting Hypothesis 8, i.e. indicating that the publicity gotten after cross-delisting is indeed much lower than during cross-listing. Hence, it also seems that cross-delisting is an indicator of a change in the company, witnessed by better acquisition performance and less search for publicity. It should be noted, however, that the difference in median number of hits is statistically insignificant.

6.2 Wealth effects to acquirer shareholders

This section presents the results of tests on wealth creation to acquirer shareholders. This section is divided into four subsections, two for both of my samples. I assess absolute value creation and, in addition, I test for the difference in value creation between my various subsamples.

6.2.1 Cumulative abnormal returns Sample 1 – M&A transactions by cross-listers and control group

Table 12 presents the cumulative abnormal returns for the cross-listers and the control group. As can be seen, it seems that the acquisitions by the cross-listers are roughly break-even transactions to the shareholders of the acquiring company as the average CAR for the clean 3-day period is 0.19%. The average CAR for the cross-listers is not statistically significantly different from zero in any of the event periods, further indicating value neutral transactions. Looking at the mid-point of the range of CARs, it seems that the cross-listers are doing even somewhat worse than the average suggests, as the median CAR for the 3-day event window is -0.10%. Hence, the distribution of wealth effects seems to be somewhat skewed.

When one looks at the dollar weighted abnormal returns, it actually appears that M&A activity by cross-listed companies is shareholder value destroying. It seems that the cross-listers are destroying on average $93.8m of wealth per transaction, and also the median value destruction is $1.5m. This is in line with the idea presented by Moeller et al. (2004): deals by

Table 12: Cumulative abnormal returns to cross-lister and control group acquirers

This table presents the average and median acquirer percentage cumulative abnormal returns (CARs) and dollar cumulative abnormal returns ($CAR) for a sample of 451 M&A transaction carried out by 281 European companies while being cross-listed in the U.S. during 1.1.1996-31.12.2008, excluding those companies that cross-listed prior to 1980. The table also shows the CARs and $CARs for a sample of 951 acquisitions carried out by the control sample, which includes those companies from the Dow Jones STOXX Total Market Index for Europe (December 2008 version) that are not cross-listed at the time of the acquisition. Acquirers in the cross-lister sample and the control sample exclude financial companies (first digit of SIC code 6) due to differences in their financial reporting. Europe is defined here as the original EU-15 countries and Norway and UK. The samples are retrieved from Thomson Financial SDC database, and include only completed acquisitions that result in majority ownership of the target by the bidder, and deal size is at minimum $1m. The $CARs are reported in $millions. The returns are reported over three short-term event windows and the t-statistic is reported in parenthesis below the average CARs. Positive refers to percentage of the sample acquisitions, which are value creative to the acquirer in the respective event period. The table also reports the difference in CARs and $CARs between cross-listed and control group acquirers. For the difference in median CARs and $CARs, the table also reports the z-statistic of the Wilcoxon rank sum test.

	Cross-listed acquirers	Control group acquirers	Difference
Percentage returns			
[-5;+5]			
Average CAR	-0.27%	0.56%***	-0.83%*
T-statistic	[-0.72]	[2.59]	[-1.90]
Median CAR	0.13%	0.55%	-0.41%
Z-statistic			[-1.44]
Positive	51.00%	55.63%	55.52%
[-3;+3]			
Average CAR	0.03%	0.65%***	-0.63%*
T-statistic	[0.09]	[3.78]	[-1.80]
Median CAR	0.20%	0.50%	-0.30%**
Z-statistic			[-1.99]
Positive	51.00%	54.36%	54.26%
[-1;+1]			
Average CAR	0.19%	0.55%***	-0.36%
T-statistic	[0.96]	[4.87]	[-1.58]
Median CAR	-0.10%	0.32%	-0.42%**
Z-statistic			[-1.98]
Positive	48.56%	55.63%	55.52%
Dollar returns ($m)			
[-5;+5]			
Average $CAR	-264.46	-33.64	-230.83**
T-statistic			[-2.26]
Median $CAR	3.11	12.06	-8.96
Z-statistic			[-0.70]
[-3;+3]			
Average $CAR	-215.56	-3.05	-212.50**
T-statistic			[-2.59]
Median $CAR	2.65	9.83	-7.18
Z-statistic			[-0.72]
[-1;+1]			
Average $CAR	-93.79	0.88	-94.67
T-statistic			[-1.44]
Median $CAR	-1.51	8.23	-9.74
Z-statistic			[-1.60]

***, **, and * denote two-tailed statistical significance at the 1%, 5%, and 10% level, respectively.

large firms seem to be worse. The results on $CARs give some support to Hypothesis 5, which states that M&A transactions by cross-listed companies are wealth destroying. However, when one looks at the percentage CARs, it must be concluded that acquisitions seems to be roughly break-even corporate events for cross-listed companies.

It is of interest to compare the acquisition performance of the cross-listers to the control group to see how cross-listers fare relatively in their M&A activity. Contrary to the cross-listers, it actually seems that the control group is reaping significant returns from their M&A activity, as the average CAR for the 3-day event period is 0.55%, which is statistically significantly different from zero at the 1% level. Furthermore, the difference in the average returns between the cross-listers and the control group is statistically significant for the 11-day and 7-day time periods and almost statistically significant in the 3-day event window (t-value of -1.58). Also the difference in median values seems to indicate that cross-listers make worse M&A transactions than the control group, and the difference is statistically significant at the 5% level for the 7-day and 3-day event windows.

When one looks at the $CARs, the difference is even somewhat more obvious than in the case of CARs. Whereas cross-listers average $CAR was a loss of $93.8m for the 3-day event window, the control group roughly broke even with a $CAR of $0.9m. However, the difference is only statistically significant for the somewhat more noisy 7-day and 11-day event periods. Also median $CAR figures suggests that the control group creates more value in its acquisitions than the cross-listers, as control group's median $CAR is $8.2m, which is $9.7m more than for the cross-lister group. However, the difference in medians is not statistically significant in any of the used event periods.

Figure 4 on the next page shows the development of the 7-day CAR for both cross-listers and the control group. The curve for the control group shows the usual shape of the CAR curve, i.e. there is small evidence of insider information leaking prior to the event date, but most of the CAR is attributable to the event date, while also the first and second day after the event provide some abnormal returns, indicating slow adjustment to information. The figure for the cross-listers is somewhat more peculiar. It seems that there is substantial leakage of insider information as days -1 and -2 contribute -0.171% and -0.036% to the CAR, respectively, while the abnormal return on the event date is -0.049%. What is even more peculiar, is the fact that after the initial negative return, days +1 and +2 provide substantial positive returns

and, hence, the whole event is deemed as slightly value creative. It might be that as the deals by the cross-lister group are substantially larger than those of the control sample, they are likely to be more complex and, hence, harder to value and keep secret until the event date. Furthermore, as the M&A transactions by the cross-listers are more frequently paid for with equity, this further complicates their valuation. Hence, the complicated nature of the cross-lister deals is likely to contribute to the short-term undervaluation, which is then reversed.

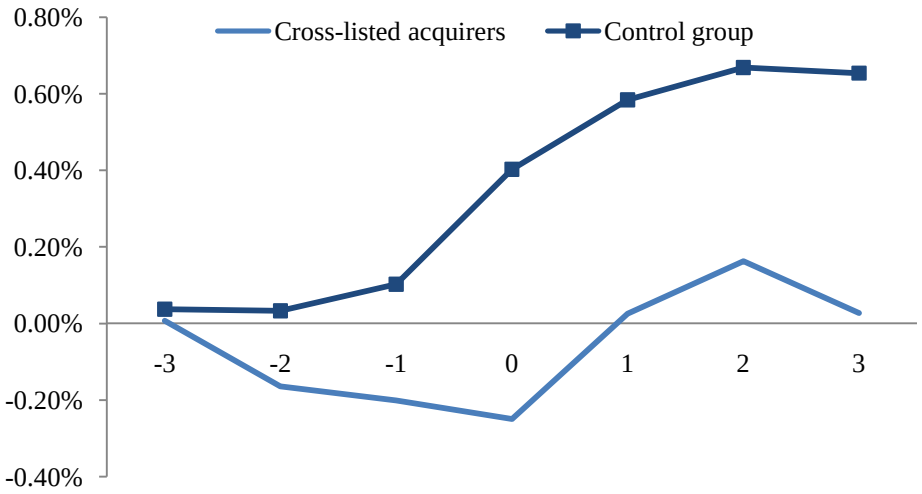

Figure 4: The average 7-day CAR for cross-lister and control group acquirers This figure shows the development of the average cumulative abnormal return to acquirer shareholders over a 7-day event window, [-3;+3], for a sample 451 takeovers carried out during 1996-2008 by 281 European companies cross-listed in the U.S. at the time of the acquisition, and for 951 acquisitions performed during the same time period by the control group, which includes companies from Dow Jones STOXX Total Market Index for Europe excluding the cross-listers. The stock price, index, and risk-free rate data are from Thomson Financial Datastream database.

Figure 5 shows the distribution of the 3-day CAR for the cross-lister acquisitions. As is evident, the distribution is quite far from normal with really fat tails. What is quite interesting, is the fact that roughly 20% of the transactions lead to value creation or destruction in excess of 5%, indicating that there is both substantial value created and destroyed within the sample companies. In fact, only some 30% of the acquisitions have an event return between -1% and 1%, although the average return in the sample is 0.19%. The implication is straight forward: the transactions of the cross-listers in general seem to lead to large wealth changes, although on average the valuation effects seem to even out. This is in line with the findings of Hazelkorn et al. (2004), as in their sample 78% of the bidders lost or gained more than 2.0% of their market value at the event date, although the average CAR was -0.4%.

As it seems in the light of pure CARs and $CARs that cross-lister acquisitions are somewhat less value creative than those of the control group, it is interesting to see what kind of results

does the regression analysis provide when we control for a number of deal characteristics related to wealth creation. It is also interesting to see how the self-selection model affects these results, as it might be that the cross-listing decision is driven by the intent to ease acquisitions and, hence, employment of the self-selection model might render the regression results insignificant.

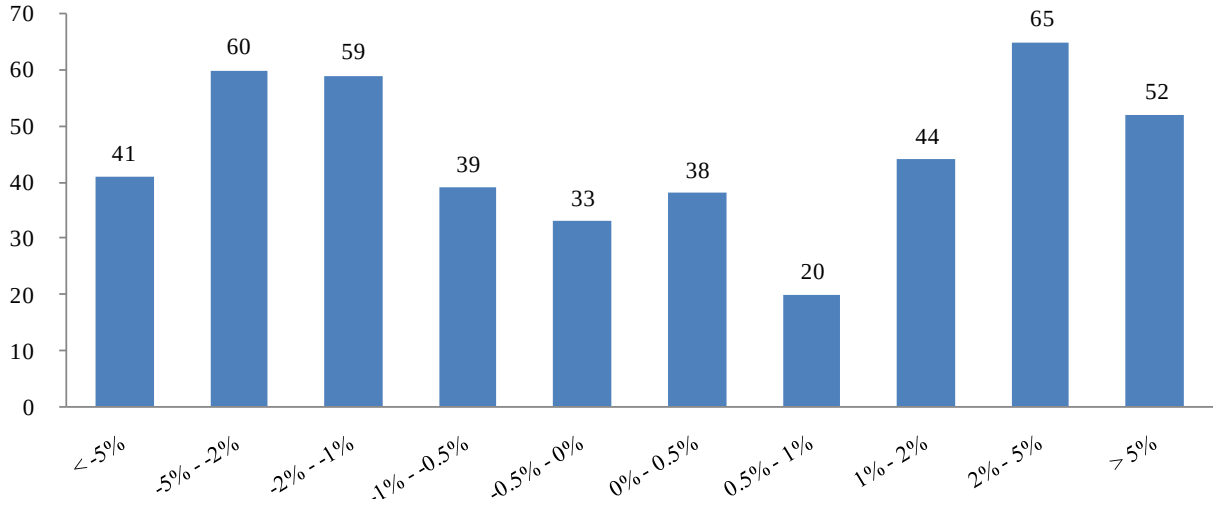

Figure 5: The distribution of 3-day CARs to the cross-listed acquirers The figure presents the distribution of average cumulative abnormal return to acquirer shareholders over a 3-day event window, [-1;+1], for a sample of 451 takeovers carried out during 1996-2008 by 281 European companies cross-listed in the U.S. at the time of the acquisition. The stock price, index, and risk-free rate data are from Thomson Financial Datastream database.

6.2.2 Cumulative abnormal returns Sample 2 – M&A transactions by cross-listers before cross-listing, during cross-listing, and after cross-delisting

Table 13 compares the value creation of the cross-listers before cross-listing, during cross-listing, and after cross-delisting. As can be seen from the table, it actually seems that, contrary to what Hypothesis 6 suggests, the acquisitions made before cross-listings seem to be worse than those made during cross-listing: the 3-day average CARs is 0.03% prior to cross-listing and 0.19% during cross-listing. Although the average CAR is smaller for the 3-day and 7-day event windows before cross-listing than during cross-listing, the contrary holds for median CARs; it seems that the midpoint transaction is better before cross-listing than during, suggesting a more skewed distribution for the CARs before cross-listing. It should be noted here, however, that the differences are quite small and not statistically significant in any of the used event windows. Hence, the results mildly imply that Hypothesis 6 is likely to be rejected, however, no conclusions should be made based on the descriptive statistics. An interesting

Table 13: Cumulative abnormal percentage returns to cross-listed acquirers before cross-listing, during cross-listing, and after cross-delisting

The table reports the average and median acquirer percentage cumulative abnormal returns (CARs) and dollar cumulative abnormal returns ($CAR) for a sample of M&A transaction carried out during 1.1.1996-31.12.2008 by a sample of 281 European companies that have been cross-listed in the U.S. during 1.1.1980-31.12.2008. Financial companies are excluded (first digit of SIC code 6). Europe is defined as the original EU-15 countries and Norway and UK. The samples are retrieved from Thomson Financial SDC database, and include only completed acquisitions that result in majority ownership of the target by the bidder, and deal size is at minimum $1m. The column labeled before c-listing shows the characteristics for a sample of 105 acquisitions by sample companies prior to cross-listing. The column labeled during c-listing shows the same characteristics for 451 acquisitions carried out by the sample companies while being cross-listed in the U.S., and the column labeled after c-listing shows the same characteristics for 72 acquisitions performed by the sample companies after they have cross-delisted their shares from the U.S. stock exchanges. The returns are reported over three short-term event windows and the t-statistic is reported in parenthesis below the average CAR. Positive refers to percentage of the sample acquisitions, which are value creative to the acquirer in the respective event period. The table also reports the difference of CARs and $CARs between acquisitions carried out by the sample companies before and during cross-listing (During –before), and those acquisitions carried out after cross-delisting and during cross-listing (After-during). For the difference in median CARs and $CARs, the table also reports the z-statistic of the Wilcoxon rank sum test.

	Before c-listing	During c-listing	During – before	After c-listing	After – during
Percentage returns					
[-5;+5]					
Average CAR	0.16%	-0.27%	-0.43%	0.75%	1.02%
T-statistic	[0.01]	<[0.01]	[0.01]	[0.01]	[0.01]
Median CAR	-0.08%	0.13%	0.21%	0.77%	0.64%
Z-statistic			[-0.44]		[-1.06]
Positive	49.52%	51.00%		54.17%	
[-3;+3]					
Average CAR	-0.09%	0.03%	0.12%	1.16%**	1.14%*
T-statistic	[-0.20]	[0.09]	[0.22]	[2.14]	[1.87]
Median CAR	0.29%	0.20%	-0.09%	1.06%	0.86%*
Z-statistic			[-0.18]		[-1.65]
Positive	52.38%	51.00%		59.72%	
[-1;+1]					
Average CAR	0.03%	0.19%	0.16%	0.72%**	0.53%
T-statistic	[0.10]	[0.96]	[0.46]	[2.02]	[1.33]
Median CAR	0.31%	-0.10%	-0.41%	0.46%	0.56%
Z-statistic			[-0.51]		[-1.16]
Positive	57.14%	48.56%		58.33%	
Dollar returns ($m)					
[-5;+5]					
Average $CAR	29.87	-264.46	-294.33	-160.57	103.89
T-statistic			[-0.97]		[0.47]
Median $CAR	-2.84	3.11	5.94	8.63	5.53
Z-statistic			[-0.90]		[-0.34]
[-3;+3]					
Average $CAR	70.89	-215.56	-286.44	-80.62	134.94
T-statistic			[-1.18]		[0.83]
Median $CAR	4.75	2.65	-2.10	22.50	19.84
Z-statistic			[-0.83]		[-0.36]
[-1;+1]					
Average $CAR	-1.65	-93.79	-92.14	-49.27	50.53
T-statistic			[-0.52]		[0.33]
Median $CAR	14.20	-1.51	-15.71	26.53	28.04
Z-statistic			[-1.07]		[-0.95]

***, **, and * denote two-tailed statistical significance at the 1%, 5%, and 10% level, respectively.

observation is that percentage of value creative seems to be substantially higher before cross-listing than during, being 57.1% before and 48.6% during in the 3-day event window, further indicating more skewed distribution for the transactions made before cross-listing.

When one looks at the $CARs before cross-listing and during cross-listing, it seems that the average M&A transaction made during cross-listing is a lot worse than that carried out before cross-listing. For example, the average value destruction during the 3-day event period before cross-listing is $1.7, whereas during cross-listing a substantially larger amount of value, specifically $93.8m, is destroyed. However, the difference is not statistically significant in any of the event periods. Similar results are also reported for the median figures, but again, the difference is not statistically significant and is, in fact, the other way around for the 11-day event period. Although not statistically significant, the fact that the difference in $CARs anyway seems to somewhat favor transactions prior to cross-listing, whereas it was the other way around for CARs, suggest that large companies fare relatively worse in their M&A activity after having cross-listed.

The statistics for the transactions made after cross-delisting provide very interesting information: it seems that the deals are significantly value creative (t-value 2.02) with a CAR of 0.72% for the 3-day event window. Furthermore, the results also indicate that the difference in the average value creation between transactions made during cross-listing and after cross-delisting is statistically different from zero during the 7-day event period, i.e. the transactions made after cross-delisting are better, supporting Hypothesis 7. The sign of the difference is also robust for the usage of median and different time windows, however, the difference is statistically significant only in the 7-day period. Hence, it must be concluded that only some weak support for Hypothesis 7 is found. Furthermore, the results must still be controlled in the usual manner for a number of other variables related to value creation, most notably deal size and method of payment.

Same pattern of returns is also visible in the $CARs; the average 3-day $CAR after cross-delisting is -$49.3, which is substantially more than that of the transactions made during cross-listing, i.e. -$93.8m. In fact, it seems that the median transaction made after cross-delisting is somewhat value creative with a $CAR of $26.5m in the 3-day event window. Hence, the average acquirer seems to be creating value before cross-listing and after cross-delisting, but shareholder value is destroyed during cross-listing. This is likely to be

associated with the fact that the managers of a company are on an irrational empire building journey while being cross-listed, and the market acknowledges this with negative returns. It should be noted, however, that the differences in the average or median $CARs during cross-listing and after cross-delisting are not statistically significant in any of the event periods, suggesting that there are no real differences in the returns.

In sum, it seems that Hypothesis 6 is unlikely to be verified in the multivariate analysis part of this thesis, as the descriptive statistics indicated that transactions made before cross-listing are actually worse than those made during cross-listing on average, although the difference is not statistically significant in any of the event periods. This result might be associated with the fact that companies that eventually choose to cross-list in the U.S. have already been quite acquisitive in the U.S. before the cross-listing (Tolmunen and Torstila, 2005) and to the fact that cross-listers actually make larger and more equity financed transactions prior to cross-listing compared to during cross-listing, as shown in section 5.1.7. Although Hypothesis 6 is likely to be rejected, interesting results might be obtained with regards of Hypothesis 7, as it seems that the transactions made after cross-delisting are somewhat better than those made during cross-listing, however, the difference is not consistently statistically significant.

6.2.3 Two-sampled paired t-tests – Sample 1

In this subsection, I evaluate the difference in the CARs of the cross-listers and the control group based on a two-sampled paired t-tests. The matching used in these tests should alleviate the problem of comparing apples and oranges, i.e. they should make the transactions more comparable. A number of earlier studies have highlighted the importance of method of payment and acquirer size to the profitability of M&A transactions (see, e.g., Hazerkorn et al., 2004; Moeller et al., 2004), hence, I match the transactions with these two characteristics. Furthermore, I also control for acquirer industry.

As can be seen in table 14, the transactions of the cross-listers seem to be less value creative than those of the control group in all of the time periods. However, the difference is not statistically significant in any of the event windows. Hence, it seems that after we control for deal and acquirer characteristics, the transactions made by the cross-listers are not significantly worse than those made by the control group.

Table 14: Two-sampled paired t-tests for the difference between average acquirer percentage CAR's of cross-listed and control sample acquirers

The table shows the average cumulative abnormal percentage returns (CARs) to the acquirer's shareholders as measured by the market model in three event windows. The sample includes 224 paired M&A transaction by a sample of 281 European companies while being cross-listed in the U.S. during 1.1.1996-31.12.2008, excluding those companies that cross-listed prior to 1980, paired with transactions of the control sample, which includes those companies from the Dow Jones STOXX Total Market Index for Europe (December 2008 version) that are not cross-listed at the time of the acquisition. Both acquirer samples exclude financial companies (first digit of SIC code 6) due to differences in their financial reporting. Europe is defined as the original EU-15 countries and Norway and UK. The samples are retrieved from Thomson Financial SDC database, and include only completed acquisitions that result in majority ownership of the target by the bidder, and deal size is at minimum $1m. In addition, method of payment must be known. The companies are matched by method of payment (pure cash deal, hybrid deal, or pure stock deal), industry groups according to the first two digits of the SIC code, and acquirer size (as close as possible, but at minimum the control pair must be within 50-200% of the market cap of the cross-lister). T-statistic is reported in parenthesis below the difference in average CARs.

	Cross-listed acquirers	**Control group acquirers**	**Difference**
[-5;+5]	-0.64%	0.31%	-0.95%
T-statistic			[-1.43]
[-3;+3]	0.14%	0.49%	-0.35%
T-statistic			[-0.70]
[-1;+1]	0.39%	0.44%	-0.05%
T-statistic			[-0.13]

***, **, and * denote two-tailed statistical significance at the 1%, 5%, and 10% level, respectively.

Interestingly, when one compares the returns of the cross-listers and the control group in Table 14 to Table 12, one sees that the CARs in Table 14 are higher for the cross-listers and lower for the control group. This is exactly what one would expect to find after we make the transactions more comparable: the difference in the returns grows smaller. In the light of this evidence, it is quite interesting to see whether there are any significant results obtainable from the multivariate statistics. It might still be the case that results can be obtained, as only a quite small number of value creation variables are controlled here.

6.2.4 Two-sampled paired t-tests before – Sample 2

In this subsection, I study the difference in the CARs of the subsamples of Sample 2, i.e. I compare prior cross-listing to during cross-listing and during cross-listing to after cross-delisting, using two-sampled paired t-tests. It should be noted here, however, that the sampling is subject to a number of caveats, most importantly the small number of observations before cross-listing and after cross-delisting. Hence, the results as such are only meant to provide another reference point into the matter, and no real conclusions can be

Table 15: Two-sampled paired t-tests for the difference between average percentage CARs of cross-listed acquirers before cross-listing, during cross-listing, and after cross-delisting

The table reports the average cumulative abnormal percentage returns (CARs) to the acquirer's shareholders as measured by the market model in three event windows. The first sample includes 69 paired M&A transaction by European acquirers before and during cross-listing to the U.S. stock exchanges. The second sample includes 32 paired takeovers of U.S. targets by European bidders during cross-listing and after cross-delisting from the U.S.. The matching is done by companies, i.e. the pairs are transactions performed by the same company at different stages of the cross-listing cycle. The acquisition are performed by 281 European companies that have been being cross-listed in the U.S. during 1.1.1996-31.12.2008, excluding those companies that cross-listed prior to 1980, and excluding financial companies (first digit of SIC code 6) due to differences in their financial reporting. Europe is defined as the original EU-15 countries and Norway and UK.. The transaction samples are retrieved from Thomson Financial SDC database, and include only completed acquisitions that result in majority ownership of the target by the bidder, and deal size is at minimum $1m. T-statistic is reported in parenthesis below the difference in average CARs.

	Pairs 1: Before c-listing and during c-listing			**Pairs 2: During c-listing and after c-listing**		
	Before c-listing	During c-listing	During – before	During c-listing	After c-listing	After – during
[-5;+5]	0.51%	0.48%	0.03%	2.47%	-0.89%	-3.36%**
T-statistic			[0.03]			[-2.29]
[-3;+3]	0.25%	0.28%	-0.03%	1.31%	0.56%	-0.75%
T-statistic			[-0.41]			[-0.63]
[-1;+1]	0.32%	-0.27%	0.58%	1.48%	-0.25%	-1.73%**
T-statistic			[0.89]			[-2.48]

***, **, and * denote two-tailed statistical significance at the 1%, 5%, and 10% level, respectively.

drawn. The transactions are matched so that transactions made by the same company at different stages in the cross-listing cycle form pairs.

Table 15 provides interesting, yet somewhat disappointing results. It seems that the M&A transactions made before cross-listing are more value creative than those carried out during cross-listing in the 11 and 3-day event periods, whereas in the 7-day event period it is the opposite. However, none of the differences are statistically significant, indicating that the differences are negligible.

As can be seen in Table 15, it seems that the transactions made during cross-listing are more value creative than those made after cross-delisting, and the difference is statistically significant for the 11 and 3-day even windows. This is contrary to Hypothesis 7, and very likely to be attributed to the extremely small number of transactions after cross-delisting, which makes the pairing somewhat handicapped. All and all, the results obtained in this subsection should be evaluated with skeptism, and the most intuitive conclusion drawn is that the matter needs further studying my employing multivariate models.

6.3 Determinants of acquirer gains

In this section, I study the importance of cross-listing and cross-delisting to acquirer gains with multivariate regression analysis. Although my descriptive statistics provided some evidence indicating that cross-listers seem to be making worse acquisitions than the control group, and that cross-delisting improves acquisition performance, it might be that the differences are driven by other deal characteristics, such as the size of the deal, method of payment, and company status of the target. Hence, I must control for the effect of a number of variables to be able to determine if there is truly a relation between returns from M&A and cross-listing and cross-delisting.

6.3.1 Regression analysis – Sample 1

As suggested by Tolmunen and Torstila (2005) and Burns et al. (2007), cross-listing is a conscious choice made by the cross-listing company and, hence, this self-selection must be taken into account in interpreting the results of the CAR regressions. Therefore, in this section, I first introduce my cross-listing model, which acts as a self-selection model for Sample 1. Then, I show the general results of the regression analysis, where I seek to determine whether there is a relation between cross-listing and value creation. Finally, I report regression results for different time period to grasp an idea of the relative importance of different deal characteristics at different times, mainly prior and after the introduction of Sarbanes-Oxley.

First stage of Heckman – cross-listing likelihood

Table 16 show the results of the cross-listing likelihood model. One can easily see that the size of the acquirer as well as the average sales growth seem to contribute substantially to the decision to cross-list: bigger companies and companies that are growing more rapidly are more likely to cross-list their shares. This is in line with the idea that cross-listing is more attractive to larger companies as the costs of compliance with reporting requirements are relatively larger for smaller companies (see, e.g., Zingales, 2007) as well as with the idea that companies who have grown rapidly seek new markets by cross-listing (Pagano et al., 2002). The coefficients for Log assets and Sales growth are statistically significant at the 1% level in all the models. Similar coefficients are reported by for example and Tolmunen and Torstila (2005).

Table 16: Determinants of cross-listing likelihood

The table shows the results of probit regressions, where the dependent variable takes a value of one if the company is cross-listed, zero otherwise, and the observations are deal years for 1,392 M&A transaction carried out by a sample of 281 European companies while being cross-listed in the U.S. during 1.1.1996-31.12.2008, excluding those companies that cross-listed prior to 1980, or by the control sample, which includes those companies from the Dow Jones STOXX Total Market Index for Europe (December 2008 version) that are not cross-listed at the time of the acquisition. Financial companies are excluded (first digit of SIC code 6) due to differences in their financial reporting. Europe is defined as the original EU-15 countries and Norway and UK. The sample is retrieved from Thomson Financial SDC database, and includes only completed acquisitions that result in majority ownership of the target by the bidder, and deal size is at minimum $1m. All accounting and market value variables are retrieved from Thomson Financial Worldscope database, and are from the last full year financial statement filed prior to the deal. Log assets is logarithm of assets in $m. Sales growth is three-year annualized sales growth. P/E is price per share / earnings per share, and P/B is market value of equity / book value of equity, both defined as three-year averages. Country-level variables in the model are from La Porta et al. (1998) and Doidge et al. (2004). Model 6 is used as the first stage of the Heckman process and, hence, only includes the transactions, of which all second stage variables are known. The models also includes industry dummies that are not shown here. Chi squared-statistics are reported in parenthesis below the coefficient. Third last row of the table shows the sample size, second last row gives the log likelihood, and last row reports the pseudo-R^2goodness of fit measure.

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	-2.50***	-3.63***	-3.59***	-2.80***	-7.16	-7.85
	[-8.77]	[-10.86]	[-10.55]	[-2.68]	[-1.61]	[-1.56]
Log assets	0.46***	0.68***	0.62***	0.61***	0.62***	0.47***
	[8.38]	[10.79]	[9.29]	[9.22]	[9.23]	[6.37]
Sales growth		0.62***	0.56***	0.55***	0.54***	0.46***
		[4.29]	[3.80]	[3.67]	[3.62]	[2.81]
P/E		0.01***	0.01***	0.01***	0.01***	0.01***
		[4.44]	[3.86]	[3.77]	[3.68]	[3.03]
P/B		0.02	0.02**	0.02**	0.02**	0.03**
		[1.61]	[2.02]	[2.28]	[2.35]	[2.50]
French law			0.52***	0.41**	0.19	0.19
			[5.41]	[2.28]	[0.69]	[0.59]
German law			0.06	0.02	-0.37	-0.29
			[0.45]	[0.11]	[-0.76]	[-0.52]
Scandinavian law			0.15	0.23	0.06	-0.05
			[0.16]	[1.54]	[0.27]	[-0.20]
Accounting standards				<0.00	<0.00	<0.00
				[0.02]	[-0.36]	[-0.05]
Judicial efficiency				-0.08	-0.12	-0.16*
				[-1.49]	[-1.61]	[-1.77]
Liquidity					0.10	0.18
					[0.33]	[0.51]
Log GNP					1.17	1.36
					[1.07]	[1.11]
Industry dummies	√	√	√	√	√	√
N	1392	1242	1242	1242	1242	833
LogL	-827.05	-706.62	-691.21	-690.10	-689.49	-541.98
Pseudo-R^2	0.056	0.102	0.122	0.123	0.124	0.105

***, **, and * denote two-tailed statistical significance at the 1%, 5%, and 10% level, respectively.

In addition to the size of the company and its historical growth rate, also the valuation level of the firm seems to contribute somewhat to the decision to cross-list; the coefficients for P/E and P/B are statistically significant at the 5% or 1% level for all but one of the specifications shown in Table 16. The dummies for legal origin and accounting standards report relatively modest and insignificant coefficients, whereas the coefficient of Judicial efficiency is statistically significant in Model 6. The coefficients for Liquidity and Log GNP are insignificant.

CAR regressions

Table 17 shows the results of the OLS regressions, where the 3-day CAR of the cross-lister and control group acquirers is regressed on a number of quantitative and qualitative deal, acquirer, and target characteristics. The table shows 12 separate OLS models. Models are shown so that the next model always introduces one or several new explanatory variables to the model. Models 9 and 10 relate specifically to the studying of the effect of publication hits to acquirer gains, and Models 11 and 12 are the self-selection equivalents of Models 7 and 8.

Model 1 includes only the intercept and the dummy Cross, which takes a value of one, if the company is cross-listed at the time of the acquisition. With this specification, the effect of cross-listing is quite small, -0.4%, and has an insignificant t-value of -1.46. When we add percentage of equity financing as an explanatory variable in the next model, the cross-listing dummy becomes substantially more influential with a coefficient of -0.7%, which is statistically significant at the 10% level. Hence, it seems that when we take into account method of payment, the acquisitions made by the cross-listed companies seem to be even worse. As the coefficient of % Equity is negative, although not statistically significant, in all of the specifications (Models 2-12) my results are in line with the general view that stock as a method of payment has a decreasing effect on the returns from M&A (see, e.g., Hazelkorn et al., 2004).

Model 3 introduces the dummies Toehold and Diversify into the regression. Contrary to expectations, the sign of Toehold is positive and that of Diversify is negative throughout all the used specifications. However, the results are statistically insignificant and, hence, there is no evidence of a relation between returns from acquisitions and either toehold or the fact that the deal is a diversifying one. The magnitude and statistical significance of the Cross dummy is not materially affected by the introduction of the variables Toehold and Diversify.

Model 4 introduces a dummy variable Language to account for cultural proximity of the target and the bidder as well as variable Rer to account for the effect of fluctuation in exchange rates. The language dummy seems to actually take negative values in all the models, and the same holds for Rer. This is contrary to what expected, but it has to be noted that neither of the coefficients is significant in any of the models and, hence, no reliable conclusions can be drawn. The introduction of Language as well as Rer both decrease the significance of the Cross coefficient slightly, but the magnitude and sign remain intact.

Introduction of the variables Log mcap, EBIT margin, Cash ratio and Leverage through Model 5, on the other hand, decreases the coefficient of Cross somewhat to -0.6% and makes it statistically insignificant with a t-value of -1.26. Hence, it seem that the size of the acquirer and its financial position explain some of the poor performance of the cross-listers. Most importantly, cross-listers seem to make worse acquisitions, because they are larger than the control group, which is in line with a view, according to which deals by larger companies tend to be worse (see Moeller et al., 2004).

The coefficient of Log mcap is negative and statistically significant in all of the models, supporting the above mentioned proposition that large companies fare relatively worse in their acquisitions. EBIT margin has a negative, yet insignificant, coefficient in all of the models, perhaps hinting that well performing companies fare relatively worse in their acquisitions, which might reflect the fact that these companies have a free cash flow problem (Jensen ,1986). However, the size of the cash reserves seem to increase returns from M&A, which is in contrast to what was expected, but might relate to the fact that having large cash reserves, the company can more easily pay with cash as it does not have to raise debt in order for the transaction to go through. It is, nevertheless, important to note that the coefficient of Cash ratio is not statistically significant at the conventional levels. Leverage seems to be associated with negative returns, however, the variable has a very small coefficient, which is statistically insignificant in all of the specifications.

Model 6 introduces in the analysis a dummy variable Non-public. The introduction of this variable increases the t-value of the Cross dummy to -1.36. This result lends support to the earlier findings regarding the company status of the target firm (Fuller et al., 2002; Hazelkorn et al., 2004; Moeller et al., 2004) as the coefficient of Non-public is positive and statistically

Table 17: Determinants of acquirer wealth creation for European cross-listers

This table shows the results of twelve OLS regressions, where the dependent variable is the three day, [-1;+1], cumulative abnormal percentage return to the acquirer shareholders as measured by the market model. The sample includes 1,402 M&A transaction carried out by a sample of 281 European companies while being cross-listed in the U.S. during 1.1.1996-31.12.2008, excluding those companies that cross-listed prior to 1980, or by the control sample, which includes those companies from the Dow Jones STOXX Total Market Index for Europe (December 2008 version) that are not cross-listed at the time of the acquisition. Financial companies are excluded (first digit of SIC code 6) due to differences in their financial reporting. Europe is defined as the original EU-15 countries and Norway and UK. The sample acquisitions are retrieved from the Thomson Financial SDC database (SDC), and include only completed acquisitions that result in majority ownership of the target by the bidder, and deal size is at minimum $1m. Cross is a dummy variable, which takes a value of one if the acquirer is cross-listed in the U.S. at the time of the acquisition. % Equity is the percentage of the purchase price paid with equity as in SDC. Toehold is a dummy variable, which takes a value of one, if the acquirer has ownership in the target prior to the announcement of the deal according to SDC. Diversify is a dummy variable, which takes a value of one if the bidder and target are from different major industries as defined by the first two digits of the SIC code as in Thomson Financial Worldscope database (Worldscope). Language is a dummy variable, which takes a value of one if the official language of the acquirer's home country is English. Relative exchange rate, Rer, measures the deviation from the average exchange rate of local currency against U.S. dollar during the sample period. Log mcap is the logarithm of the market cap of the acquirer 21 trading day prior to announcement of the deal in $m as in Thomson Financial Datastream database. All accounting variables are retrieved from Worldscope and are from the last full year financial statement filed prior to the deal and refer to acquirer characteristics. EBIT margin is the ratio of operating income to sales. Cash ratio is the ratio of the cash and short-term investments to total assets. Leverage is the ratio of total debt to market cap. Non-public is a dummy variable, which takes a value of one if the target is defined as a private company or a subsidiary of a public company in SDC. Deal size is the logarithm of the value of the transaction as shown in SDC in $m. Log mcap*Cross is an interaction term. Publication is the number of times the name of the company was mentioned in the headline of Business Week, Financial Times or Wall Street Journal during a one-year period ending 10 days after the announcement on an M&A transaction by the sample company as in LexisNexis database. Publication*Cross is an interaction term. $\hat{\lambda}_1$ is the inverse Mills ratio, estimated as the first stage of the Heckman (1979) two-stage model. The regressions also include year, industry, and country dummies, but they are not reported. T-statistics are reported in parenthesis below the coefficient. Second last row of the table shows the sample size and last row reports the R^2goodness of fit measure.

											Treatment effects	
Variable	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**
Intercept	0.008	0.011	0.009	0.010	0.040**	0.026	0.018	0.025	0.007	0.006	0.068	0.074
	[0.81]	[0.69]	[0.59]	[0.62]	[1.98]	[1.25]	[0.87]	[1.09]	[0.31]	[0.26]	[1.49]	[1.61]
Cross	-0.004	-0.007*	-0.007*	-0.007	-0.006	-0.006	-0.006	-0.024	-0.004	-0.001	-0.006	-0.026
	[-1.46]	[-1.71]	[-1.67]	[-1.62]	[-1.26]	[-1.36]	[-1.43]	[-0.98]	[-0.88]	[-0.22]	[-1.17]	[-0.95]
% Equity		-0.006	-0.005	-0.005	-0.005	-0.005	-0.007	-0.007	-0.008	-0.007	-0.009	-0.009
		[-0.76]	[-0.75]	[-0.75]	[-0.69]	[-0.66]	[-0.90]	[-0.91]	[-1.02]	[-0.96]	[-1.08]	[-1.10]
Toehold			-0.001	-0.001	-0.002	-0.001	-0.001	-0.0004	-0.002	-0.003	-0.001	-0.001
			[-0.12]	[-0.14]	[-0.29]	[-0.13]	[-0.10]	[-0.05]	[-0.31]	[-0.35]	[-0.11]	[-0.07]
Diversify			0.003	0.004	0.003	0.002	0.003	0.003	0.004	0.004	0.001	0.001
			[0.92]	[0.95]	[0.81]	[0.57]	[0.87]	[0.89]	[0.96]	[0.95]	[0.32]	[0.32]

Table 17: Determinants of acquirer wealth creation for European cross-listers (continued)

											Treatment effects	
Variable	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**
Language				-0.0004	-0.006	-0.008	-0.008	-0.006	-0.011	-0.012	-0.011	-0.008
				[-0.04]	[-0.51]	[-0.72]	[-0.74]	[-0.54]	[-1.01]	[-1.06]	[-0.92]	[-0.66]
Rer				-0.046	-0.056	-0.055	-0.051	-0.050	-0.042	-0.040	-0.048	-0.048
				[-0.98]	[-1.17]	[-1.16]	[-1.07]	[-1.05]	[-0.87]	[-0.83]	[-0.90]	[-0.90]
Log mcap					-0.009***	-0.007**	-0.009***	-0.011**	-0.006	-0.006	-0.015**	-0.017**
					[-2.61]	[-2.06]	[-2.63]	[-2.54]	[-1.55]	[-1.62]	[-2.51]	[-2.56]
EBIT margin					-0.008	-0.008	-0.010	-0.011	-0.011	-0.009	-0.008	-0.009
					[-0.58]	[-0.59]	[-0.69]	[-0.76]	[-0.73]	[-0.66]	[-0.56]	[-0.62]
Cash ratio					0.016	0.017	0.019	0.020	0.022	0.022	0.018	0.019
					[1.10]	[1.14]	[1.27]	[1.32]	[1.46]	[1.43]	[1.13]	[1.19]
Leverage					-0.001	-0.001	-0.001	-0.001	-0.0002	-0.0001	-0.002	-0.002
					[-0.30]	[-0.18]	[-0.20]	[-0.27]	[-0.07]	[-0.04]	[-0.47]	[-0.54]
Non-public						0.011**	0.015***	0.015***	0.017***	0.018***	0.018***	0.018***
						[2.55]	[3.23]	[3.21]	[3.62]	[3.69]	[3.55]	[3.55]
Deal size							0.006**	0.006**	0.007***	0.007***	0.007**	0.007**
							[2.21]	[2.23]	[2.60]	[2.58]	[2.31]	[2.35]
Log mcap*Cross								0.005				0.005
								[0.74]				[0.76]
Publication									-0.0002*	-0.0001		
									[-1.92]	[-0.41]		
Publication*Cross										-0.0001		
										[-0.95]		
$\hat{\lambda}_1$											-0.018	-0.018
											[-1.34]	[-1.33]
Year dummies	√	√	√	√	√	√	√	√	√	√	√	√
Industry dummies	√	√	√	√	√	√	√	√	√	√	√	√
Country dummies	√	√	√	√	√	√	√	√	√	√	√	√
N	1402	885	885	885	869	869	869	869	849	849	833	833
R^2	0.030	0.035	0.036	0.038	0.054	0.061	0.066	0.067	0.075	0.076	0.065	0.065

***, **, and * denote two-tailed statistical significance at the 1%, 5%, and 10% level, respectively.

significant in all of the specifications. The results indicate that by purchasing a private target or a subsidiary of a public company, the bidder reaps 1.1 - 1.8% higher initial return than by acquiring a public company.

In Model 7, I further control for the effect of deal size on the acquisition performance. Quite puzzlingly, it seems that the higher the value of the transaction, the higher the returns. This is in contrast to the findings of Moeller et al. (2004), but might be related to the view according to which it is not so much the absolute size of the deal, but the size relative to the acquiring company, which is key to the profitability of the transaction (see, e.g., Asquith et al., 1983; Scanlon, Trifts, and Pettway, 1989). Furthermore, Asquith et al. actually empirically show that the larger the target relative to the bidder, the higher the returns. As my sample companies are relatively large, this idea would explain the significantly positive coefficient of the Deal size variable.

Model 8 introduces the interaction term Log mcap*Cross, which is used to determine whether the effect of cross-listing to acquirer returns is different for large and small companies. Contrary to Hypothesis 4, it actually seems that the effect of cross-listing is somewhat less negative to larger companies This result might be attributable to the fact that as larger companies seem to benefit more from cross-listing due to relatively smaller costs (see, e.g., Zingales, 2007), small companies that choose to cross-list do it for somewhat dubious reasons. The company might be just following a cross-listing fad, indicating that its management is overall more prone to hubris and, hence, could be expected to have poorer acquisition performance. However, the coefficient for the interaction term is far from being statistically significant.

Interestingly, the introduction of Publication in Model 9 decreases the coefficient of Cross to -0.4% and makes it quite insignificant with a t-value of -0.88. The coefficient of Publication, on the other hand, is -0.02%, and statistically significant at the 10% level. This supports Hypothesis 2, according to which prominence in business publication is a sign of hubris and, hence, decreases returns from acquisitions. The coefficient for Publication seems rather small, but already 10 extra hits in the prestigious business publications will mean that the takeover creates on average 0.2% less value, which is already a rather sizeable decrease given the fact that acquisitions tend to be roughly break-even corporate transactions for the acquirers. Hence, a seemingly small increase in visibility of the company in the prestigious business

publications entails that the company is likely to make losses in its acquisitions. It, therefore, seems that prominence in these publications may be a rather strong proxy for managerial hubris. Model 10 introduces the interaction term Publication*Cross. Disappointingly, however, its coefficient is statistically insignificant.

All and all, the regression models 1 - 10 seem to hint that there is indeed a negative relation between cross-listing and the returns from M&A. However, the relation is only weakly statistically significant in some of the models and not statistically significant even at the 10% level in most of the specifications. Hence, it should be concluded that there is only very weak evidence supporting Hypothesis 3.

When we take into account the effect of self-selection in Model 11, the size of the coefficient of Cross does not materially change, but it becomes insignificant. Hence, it seems that although cross-listing has a somewhat negative effect to the bidder M&A returns, this effect might be caused by the self-selection in the sample, i.e. the companies that cross-listed in the first place tend to be those that make worse acquisitions than the companies that choose to remain only domestically listed. This is in line with the view that although cross-listing is driven partly by rational reasons, it is also a fad. A number of companies have cross-listed because they have seen others opting for this route and they do not want to be left behind. These are likely to be the companies with greater hubris issues and, consequently, poor M&A performance. It should be noted, however, that as the coefficient for the inverse Mills ratio is not statistically significant, there is no evidence of a self-selection issue. The introduction of the self-selection model's inverse Mills ratio to Model 8 produces Model 12. However, this introduction seems to have very little effect to any other coefficient than that of Cross as the size and significance of rest of the coefficients in Model 12 are very similar to Model 8.

Having now covered the general results of the regression analysis, I present Model 7 and Model 11 for three distinctive time periods, namely 1996 - 06/2002, 07/2002 - 2004 and 2005 - 2008 This allows me to investigate whether cross-listings effect to value creations has changed overtime, most importantly I compare the difference before and after the introduction of Sarbanes-Oxley. Furthermore, I separate the last M&A boom, 2005 - 2008, to see if this time period seems to be any different than prior time periods.

Table 18 reports the coefficients of regression Models 7 and 11 for the three above mentioned time periods. The results provide some interesting insights. First of all, it seems that the effect

Table 18: Determinants of acquirer wealth creation during different time periods

This table shows the results of two OLS regressions, where the dependent variable is the three day, [-1;+1], cumulative abnormal percentage return to the acquirer shareholders as measured by the market model, in three time windows. Sample includes 869 M&A transaction carried out by a sample of 281 European companies while being cross-listed in the U.S. during 1.1.1996-31.12.2008, excluding those companies that cross-listed prior to 1980, or by the control sample, which includes those companies from the Dow Jones STOXX Total Market Index for Europe (December 2008 version) that are not cross-listed at the time of the acquisition. Financial companies (first digit of SIC code 6) are excluded due to differences in their financial reporting. Europe is defined as the original EU-15 countries and Norway and UK. The sample acquisitions are retrieved from the Thomson Financial SDC database (SDC), and include only completed acquisitions that result in majority ownership of the target by the bidder, and deal size is at minimum $1m. In addition, the method of payment must be known. Cross is a dummy variable, which takes a value of one if the acquirer is cross-listed in the U.S. at the time of the acquisition. % Equity is the percentage of the purchase price paid with equity as in SDC. Toehold is a dummy variable, which takes a value of one, if the acquirer has ownership in the target prior to the announcement of the deal according to SDC. Diversify is a dummy variable, which takes a value of one if the bidder and target are from different major industries as defined by the first two digits of the SIC code as in Thomson Financial Worldscope database (Worldscope). Language is a dummy variable, which takes a value of one if the official language of the acquirer's home country is English. Relative exchange rate, Rer, measures the deviation from the average exchange rate of local currency against U.S. dollar during the sample period. Log mcap is the logarithm of the market cap of the acquirer 21 trading day prior to announcement of the deal in $m as in Thomson Financial Datastream database. All accounting variables are retrieved from Worldscope and are from the last full year financial statement filed prior to the deal and refer to acquirer characteristics. EBIT margin is the ratio of operating income to sales. Cash ratio is the ratio of the cash and short-term investments to total assets. Leverage is the ratio of total debt to market cap. Non-public is a dummy variable, which takes a value of one if the target is defined as a private company or a subsidiary of a public company in SDC. Deal size is the logarithm of the value of the transaction as shown in SDC in $m. $\hat{\lambda}_1$ is the inverse Mills ratio, estimated as the first stage of the Heckman (1979) two-stage model. The regressions also include year, industry, and country dummies, but they are not reported. T-statistics are reported in parenthesis below the coefficient. Second last row of the table gives the sample size and the last row reports the R^2goodness of fit measure.

	1996-06/2002		07/2002-2004		2005-2008	
Variable	**Model 7**	**Model 11**	**Model 7**	**Model 11**	**Model 7**	**Model 11**
Intercept	0.006	0.000	-0.005	0.144	0.060	0.138
	[0.18]	[0.00]	[-0.09]	[1.58]	[1.59]	[1.64]
Cross	-0.013*	-0.011	0.003	0.001	-0.007	-0.011
	[-1.87]	[-1.52]	[0.28]	[0.10]	[-1.17]	[-1.50]
% equity	-0.003	-0.004	-0.028*	-0.028	-0.003	-0.002
	[-0.30]	[-0.37]	[-1.66]	[-1.62]	[-0.18]	[-0.12]
Toehold	0.013	0.011	-0.013	-0.014	-0.017	-0.020
	[0.96]	[0.80]	[-0.88]	[-0.96]	[-1.49]	[-1.58]
Diversify	0.005	0.003	0.001	0.000	-0.001	-0.003
	[0.77]	[0.46]	[0.16]	[0.04]	[-0.09]	[-0.42]
Language	-0.002	-0.007	0.016	0.024	-0.005	-0.004
	[-0.20]	[-0.47]	[0.78]	[1.07]	[-0.51]	[-0.33]
Rer	-0.031	-0.040	0.060	0.065	-0.024	0.092
	[-0.49]	[-0.58]	[0.38]	[0.41]	[-0.19]	[0.59]
Log mcap	-0.010*	-0.009	-0.004	-0.019*	-0.015***	-0.020**
	[-1.88]	[-1.01]	[-0.47]	[-1.73]	[-2.84]	[-2.22]
EBIT margin	-0.009	-0.008	-0.070	-0.076	-0.022	-0.015
	[-0.43]	[-0.38]	[-1.39]	[-1.52]	[-0.73]	[-0.48]
Cash ratio	0.020	0.023	-0.113***	-0.115***	0.050**	0.050**
	[0.73]	[0.79]	[-3.55]	[-3.59]	[2.36]	[2.17]

Table 18: Determinants of acquirer wealth creation during different time periods (continued)

	1996-06/2002		07/2002-2004		2005-2008	
Variable	**Model 7**	**Model 11**	**Model 7**	**Model 11**	**Model 7**	**Model 11**
Leverage	-0.0001	-0.0003	-0.009	-0.014	-0.007	-0.006
	[-0.02]	[-0.05]	[-0.48]	[-0.77]	[-1.08]	[-0.80]
Non-public	0.022***	0.025***	0.020*	0.023*	0.002	0.002
	[3.04]	[3.14]	[1.70]	[1.90]	[0.29]	[0.26]
Deal size	0.010**	0.011**	0.001	0.001	0.005	0.003
	[2.34]	[2.33]	[0.09]	[0.19]	[1.18]	[0.72]
$\hat{\lambda}_1$		0.003		-0.057**		-0.025
		[0.18]		[-2.05]		[-1.12]
Year dummies	√	√	√	√	√	√
Industry dummies	√	√	√	√	√	√
Country dummies	√	√	√	√	√	√
N	455	438	124	120	290	275
R^2	0.080	0.078	0.149	0.391	0.140	0.141

***, **, and * denote two-tailed statistical significance at the 1%, 5%, and 10% level, respectively.

of cross-listing to returns from M&A has been the highest during the period 1996-06/2002, i.e. prior to the introduction of Sarbanes Oxley. During this time period, cross-listing seems to have decreased returns from M&A by a substantial 1.1% even after controlling for the effect of self-selection. During the period 07/2002 - 2004, which was characterised by stagnant stock price performance in general, the effect of cross-listing to returns from M&A seems to be actually slightly positive, yet, statistically very insignificant, perhaps reflecting the fact that cross-listed companies were more reluctant to strike deals when the market had gone sour.

When the markets started recovering in the last time period, it actually seems that the negative effect of cross-listing resurfaced, although being somewhat smaller and less statistically significant than prior to the introduction of Sarbanes Oxley. This decreasing time trend in cross-listing's effect to returns from M&A is likely to be attributable to the fact that more companies suffering from hubris cross-listed in the U.S. prior to the introduction of Sarbanes-Oxley and subsequently made poor acquisitions. After the introduction of Sarbanes-Oxley, cross-listing is likely to be sought for more rational reasons and, hence, also the acquisition performance of these companies is not materially affected by the cross-listing status.

Also the other deal characteristics seem to be somewhat different during different time periods. For example, the effect of toehold seems to have been positive prior to the introduction on Sarbanes-Oxley, and has only since turned negative. One explanation for this might be that, as Ravid and Spiegel (1999) suggest, toeholds are most useful when there are rival bidders, and as those deals where there is competition tend to be worse for the bidder,

the negative coefficient of toehold might be attributable to the fact that toehold indicates that there is likely to be more than one bidder in the deal. Consequently, if it is the case that there were more competition in takeovers during the latter periods of my sample, it would make sense that toehold would have a negative coefficient in those time periods. However, the coefficient of toehold is not statistically significant in any of the reported time periods.

It is also worth noting that the coefficient and significance of the variable Non-public has decreased dramatically during the sample period, being only an insignificant 0.2% in the last time period. This is likely to be caused by the fact that the sophistication of sellers and the utilization of advisors, such as investment banks, have grown and there is less bargain deals available, as also non-public companies are sold for a price, which is close to their intrinsic value. It also seems that the effect of industrial diversification has turned negative in the last time period, supporting the common view, according to which industrial diversification has continued to lose its attractiveness. It is worth noting, however, that the coefficient for Diversify is statistically very insignificant in all the time periods reported in Table 18.

6.3.2 Regression analysis – Sample 2

In this section, I present my regression results for Sample 2. Similar to Sample 1, also Sample 2 is affected by self-selection and, hence, I first show the results of my self-selection model, which is a probit model for cross-delisting likelihood. Then, I go on presenting the results of my CAR regressions, where I seek to establish whether there is a relation between gains from acquisitions and the cross-listing status of the company.

First stage of Heckman – cross-delisting likelihood

The results of the first stage of Heckman (1979) process for Sample 2 are quite interesting not only because they allow me to control for the issue of self-selection, but because the general knowledge of cross-delisting is quite limited. As the topic of cross-delisting has been empirically studied by only Witmer (2005) and Doidge et al. (2008), I am able to deepen the knowledge on cross-delistings and, hence, I present the results of the cross-delisting likelihood model more thoroughly than those of the cross-listing model presented earlier.

Table 19 shows the results of the cross-delisting probit regressions. Model 1 includes only intercept and a dummy variable Post SEC act, which takes a value of one if the M&A deal

Table 19: Determinants of cross-delisting likelihood

The table shows the results of probit regressions, where the dependent variable takes a value of one if the company has cross-delisted, zero otherwise, and the observations are deal years for 523 M&A transaction carried out by a sample of 281 European companies while being cross-listed in the U.S. during 1.1.1996-31.12.2008 or after cross-delisting. Those companies that have cross-listed prior to 1980 are excluded. Also financial companies are excluded (first digit of SIC code 6) due to differences in their financial reporting. Europe is defined as the original EU-15 countries and Norway and UK.. The sample is retrieved from Thomson Financial SDC database, and includes only completed acquisitions that result in majority ownership of the target by the bidder, and deal size is at minimum $1m. All accounting and market value variables are retrieved from Thomson Financial Worldscope database (Worldscope), and are from the last full year financial statement filed prior to the deal. Post SEC act is a dummy variable, which takes a value of 1, if the acquisition was announced post March 21, 2007. Log assets is logarithm of assets in $m. Leverage is total debt divided by total assets. Sales growth is three-year annualized sales growth. Global industry q is the median Tobin's q of the industry of the acquirer as defined by the first two digits of the SIC code.Tobin's q is defined as the book value of total assets less book value of equity plus market value of equity, all divided by the book value of total assets. Ownership is the Worldscope data item closely held shares. Country-level variables in the model are from La Porta et al. (1998) and Djankov et al. (2008). Model 7 is used as the first stage of the Heckman process and, hence, only includes the transactions, of which all second stage variables are known. Chi squared-statistics are reported in parenthesis below the coefficient. The third last row of the tables shows the sample size, second last row gives the log likelihood and last row reports the pseudo-R^2goodness of fit measure.

Variable	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**
Intercept	-1.31***	-0.97***	-0.45	1.01	-3.11***	-6.21**	-7.92**
	[-15.70]	[-2.55]	[-0.85]	[1.54]	[-2.79]	[-2.39]	[-2.38]
Post SEC act	0.90***	0.92***	1.00***	1.16***	1.25***	1.10***	1.27***
	[5.66]	[5.66]	[5.89]	[5.60]	[5.53]	[4.01]	[3.75]
Log assets		-0.08	-0.25**	-0.75***	-0.55***	-0.55***	-0.77***
		[-0.84]	[-2.26]	[-4.98]	[-3.11]	[-3.08]	[-3.25]
Leverage		-0.51	-0.32	0.56	0.29	0.33	-0.13
		[-1.41]	[-0.83]	[1.19]	[0.56]	[0.62]	[-0.20]
Sales growth			-2.01***	-1.88***	-1.41**	-1.55***	-1.12
			[-3.86]	[-3.21]	[-2.45]	[-2.60]	[-1.55]
Global industry q			0.17	0.23	0.28	0.33	0.03
			[1.01]	[1.18]	[1.35]	[1.51]	[0.12]
Ownership				-0.19	0.97	1.02*	0.97
				[-0.36]	[1.60]	[1.67]	[1.20]
Legal index					0.08***	0.09***	0.13***
					[4.88]	[4.79]	[4.35]
Stock market cap/GDP						-0.16	-0.24
						[-0.65]	[-0.59]
Log GDP						0.63	0.89
						[1.27]	[1.51]
N	523	522	504	423	423	423	396
LogL	-193.91	-191.72	-179.17	-120.43	-105.66	-104.43	-65.85
Pseudo-R^2	0.075	0.085	0.133	0.195	0.294	0.302	0.399

***, **, and * denote two-tailed statistical significance at the 1%, 5%, and 10% level, respectively.

was announced after the enactment of SEC Exchange Act 12-6h, i.e. post March 21, 2007. As is evident, with this specification the coefficient for Post SEC act is statistically significant at the 1% level (t-value 5.66). The coefficient actually remains statistically significant at the 1% level in all the models in the table, i.e. even when we control for a number of firm and country

level variables which are hypothesized as contributing to the decision to cross-delist. This implies that the new exchange act has substantially increased cross-delisting activity, which is in line with the notions of Dobbs and Goedhart (2008) and Doidge et al. (2008) and consistent with the pattern visible in the cross-delisting data presented in section 5.1.6.

Model 2 introduces to the regression the size of the company measured by the logarithm of assets and the leverage of the company, defined as total debt over total assets. Supporting the findings of Doidge et al. (2008), the size of the company seems to be negatively related to the likelihood of cross-delisting. The coefficient for Log assets in Model 2 is not statistically significant at the conventional levels, however, after we control for growth opportunities in Model 3, the coefficient turns significant at the 5% level and remains statistically significant throughout Models 3-7. This suggest that the larger the company, less likely it is to cross-delist. This is what one would expect based on the fact that the burdensome reporting requirements prevalent in the U.S. pose relatively more costs on smaller companies and, consequently, these companies are most likely to delist in order to save on the costs. The coefficient of Leverage is not consistently positive or negative, perhaps indicating that leverage plays no real role in the decisions to cross-delist.

Three-year average sales growth and global industry Tobin's q ratio are used to control for growth options of the sample companies in Models 3-7. As is evident from the table, sales growth seems to be negatively related with the likelihood of cross-delisting and the coefficient is statistically significant in Models 3-6, whereas it falls somewhat short of conventional statistical significance in Model 7. Global industry q, on the other hand, seems to be positively related with the likelihood of cross-delisting, however, its coefficient is not statistically significant in any of the Models. Similar results are obtained by Doidge et al. (2008), who conclude that companies tend to cross-list to obtain financing for growth opportunities at the lowest possible cost, and when these growth opportunities disappear, the cross-listing becomes less valuable and the companies are likely to cross-delist.

Model 4 introduces the variable Ownership, which is the Worldscope data item 'Closely held shares'. Contrary to the findings of Doidge et al. (2008), the coefficient for Ownership is positive in all the Models except in Model 4. However, the coefficient is insignificant in most of the models and, thus, there is no evidence that insider ownership plays a role in the decision to cross-delist.

Model 5 adds a new variable, Legal index, which is a proxy for anti-director rights and for the strength of the rule of law in the acquirer's country of domicile. Contrary to the results obtained by Doige et al. (2008), Legal index seems to be positively related with cross-delisting and the coefficient is highly statistically significant in all the models, indicating that companies from countries with better shareholder protection are more likely to cross-delist. This might be attributable to the fact that these companies do not need to submit themselves to the stringent regulation of the U.S. stock market as also the regulation in their home country is adequate to protect shareholders. The inconsistency with the findings of Doidge et al. is somewhat puzzling, however, it should be noted that the results obtained by Doidge et al. were not statistically significant and the authors did not control for the effect of the change in the deregistering requirements.

Finally, Model 6 introduces the variables Stock market cap / GDP and Log GDP, giving the full model for cross-delisting likelihood. Consistent with the findings of Doige et al. (2008), the coefficient for Stock market cap / GDP is negative, while the coefficient for Log GDP is positive. However, neither of the variables are statistically significant and, hence, they do not seem to contribute to the cross-delisting decision. The specification of Model 7 is identical to that of Model 6, but as it is the one used as the first stage of the Heckman (1979) two-stage process, it only includes those transactions for which all the second stage variables are known. The pseudo-R^2 of the final model is an adequate 0.399. In sum, It seems that smaller companies, who have poorer growth prospects and who come from countries with high shareholder protection are most likely to cross-delist, while the effect of other firm or country level variables are negligible. However, also SEC exchange Act Rule 12h-6 seems to contribute heavily to the decision to cross-delist, as one would expect based on the huge surge in cross-delistings after the enactment of the rule.

CAR regressions

Table 20 shows the results of CAR regressions for Sample 2. Similarly than with Sample 1, I again present 12 models, of which Models 11 and 12 are the self-selection models, and only include the transactions which are made during cross-listing or after cross-delisting, i.e. transactions made prior to cross-listing are excluded. In going through the results in Table 20, I concentrate on the dummy variables Before and After as well as on Log mcap*After, and comment on the additional variables only when they are materially different from those reported in connection with Sample 1.

Table 20: Determinants of acquirer wealth creation for cross-listers before, during, and after cross-listing

This table shows the results of four OLS regressions, where the dependent variable is the three day, [-1;+1], cumulative abnormal percentage return to the acquirer shareholders as measured by the market model. Sample includes 628 M&A transaction carried out by a sample of 281 European companies that have been cross-listed in the U.S. during 1.1.1996-31.12.2008, excluding those companies that cross-listed prior to 1980. Financial companies (first digit of SIC code 6) are excluded due to differences in their financial reporting. Europe is defined as the original EU-15 countries and Norway and UK. The sample acquisitions are retrieved from the Thomson Financial SDC database (SDC), and include only completed acquisitions that result in majority ownership of the target by the bidder, and deal size is at minimum $1m. Models 11 and 12 only include exclude transactions made before cross-listing. $\hat{\lambda}_2$ is the inverse Mills ratio, estimated as the first stage of the Heckman (1979) two-stage model. Before is a dummy variable, which receives a value of one if the acquirer has not yet been cross-listed in the U.S. at the time of the acquisition. After is a dummy variable, which takes a value of one if the acquirer has cross-delisted from the U.S. at the time of the acquisition. % Equity is the percentage of the purchase price paid with equity as in SDC. Toehold is a dummy variable, which takes a value of one, if the acquirer has ownership in the target prior to the announcement of the deal according to SDC. Diversify is a dummy variable, which takes a value of one if the bidder and target are from different major industries as defined by the first two digits of the SIC code as in Thomson Financial Worldscope database (Worldscope). Language is a dummy variable, which takes a value of one if the official language of the acquirer's home country is English. Relative exchange rate, Rer, measures the deviation from the average exchange rate of local currency against U.S. dollar during the sample period. Log mcap is the logarithm of the market cap of the acquirer 21 trading day prior to announcement of the deal in $m as in Thomson Financial Datastream database. All accounting variables are retrieved from Worldscope and are from the last full year financial statement filed prior to the deal and refer to acquirer characteristics. EBIT margin is the ratio of operating income to sales. Cash ratio is the ratio of the cash and short-term investments to total assets. Leverage is the ratio of total debt to market cap. Non-public is a dummy variable, which takes a value of one if the target is defined as a private company or a subsidiary of a public company in SDC. Deal size is the logarithm of the value of the transaction as shown in SDC in $m. Log mcap*After is an interaction term. Publication is the number of times the name of the company was mentioned in the headline of Business Week, Financial Times or Wall Street Journal during a one-year period ending 10 days after the announcement on an M&A transaction by the sample company as in LexisNexis database. Publication*After is an interaction term. $\hat{\lambda}_2$ is the inverse Mills ratio, estimated as the first stage of the Heckman (1979) two-stage model. The regressions also include year, industry, and country dummies, but they are not reported. T-statistics are reported in parenthesis below the coefficient. Second last row of the table shows the sample size and last row reports the R^2goodness of fit measure.

											Treatment effects	
Variable	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**
Intercept	-0.011	-0.024	-0.023	-0.024	0.028	0.014	0.011	0.004	-0.014	-0.013	0.032	0.034
	[-0.57]	[-0.76]	[-0.75]	[-0.75]	[0.69]	[0.32]	[0.25]	[0.09]	[-0.30]	[-0.29]	[0.46]	[0.49]
Before	-0.005	-0.007	-0.008	-0.008	-0.010	-0.007	-0.007	-0.007	-0.006	-0.006		
	[-0.74]	[-0.67]	[-0.84]	[-0.80]	[-0.95]	[-0.66]	[-0.68]	[-0.68]	[-0.61]	[-0.61]		
After	0.012	0.011	0.009	0.007	0.012	0.013	0.013	0.074	0.012	-0.018	0.010	0.232*
	[1.52]	[1.02]	[0.79]	[0.65]	[1.03]	[1.07]	[1.11]	[1.07]	[0.85]	[-1.24]	[0.58]	[1.66]
% Equity		-0.009	-0.010	-0.011	-0.011	-0.008	-0.009	-0.010	-0.011	-0.011	-0.014	-0.014
		[-0.86]	[-1.01]	[-1.05]	[-1.01]	[-0.77]	[-0.82]	[-0.89]	[-1.01]	[-0.99]	[-1.00]	[-0.96]
Toehold			-0.029**	-0.028**	-0.024*	-0.018	-0.017	-0.018	-0.018	-0.018	-0.017	-0.017
			[-2.30]	[-2.17]	[-1.77]	[-1.31]	[-1.26]	[-1.30]	[-1.27]	[-1.24]	[-1.00]	[-1.03]

Table 20: Determinants of acquirer wealth creation for cross-listers before, during, and after cross-listing (continued)

											Treatment effects	
Variable	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**
Diversify			0.001	0.002	0.002	0.001	0.001	0.001	0.002	0.003	0.004	0.005
			[0.22]	[0.25]	[0.34]	[0.10]	[0.19]	[0.16]	[0.33]	[0.36]	[0.41]	[0.53]
Language				0.003	-0.006	-0.006	-0.007	-0.007	-0.016	-0.015	-0.032	-0.042
				[0.29]	[-0.45]	[-0.51]	[-0.52]	[-0.56]	[-0.97]	[-0.91]	[-0.72]	[-0.95]
Rer				0.097	0.070	0.070	0.069	0.066	0.092	0.097	0.089	0.064
				[1.09]	[0.76]	[0.77]	[0.75]	[0.72]	[0.99]	[1.03]	[0.68]	[0.49]
Log mcap					-0.011**	-0.010*	-0.011*	-0.010	-0.006	-0.006	-0.011	-0.008
					[-2.04]	[-1.83]	[-1.86]	[-1.63]	[-0.83]	[-0.86]	[-0.88]	[-0.62]
EBIT margin					0.009	0.008	0.008	0.005	0.005	0.004	0.068*	0.062*
					[0.47]	[0.43]	[0.38]	[0.26]	[0.25]	[0.22]	[1.56]	[1.43]
Cash ratio					0.0004	-0.002	-0.001	-0.003	0.004	0.005	0.010	0.005
					[0.02]	[-0.06]	[-0.05]	[-0.12]	[0.16]	[0.19]	[0.27]	[0.14]
Leverage					-0.011	-0.012	-0.012	-0.012	-0.011	-0.011	-0.003	-0.001
					[-1.09]	[-1.13]	[-1.11]	[-1.11]	[-1.06]	[-1.07]	[-0.16]	[-0.05]
Non-public						0.013*	0.014*	0.014*	0.019**	0.019**	0.029***	0.031***
						[1.66]	[1.69]	[1.66]	[2.16]	[2.15]	[2.60]	[2.74]
Deal size							0.002	0.003	0.005	-0.005	0.010	0.011
							[0.42]	[0.53]	[0.93]	[-0.23]	[1.41]	[1.54]
Log mcap*After								-0.016				-0.065
								[-0.89]				[-1.60]
Publication									-0.0002*	-0.0002*		
									[-1.85]	[-1.81]		
Publication*After										0.001		
										[0.57]		
$\hat{\lambda}_2$											-0.009	-0.013
											[-0.60]	[-0.84]
Year dummies	√	√	√	√	√	√	√	√	√	√	√	√
Industry dummies	√	√	√	√	√	√	√	√	√	√	√	√
Country dummies	√	√	√	√	√	√	√	√	√	√	√	√
N	628	407	407	407	397	397	397	397	377	377	396	396
R^2	0.056	0.064	0.078	0.081	0.097	0.104	0.104	0.106	0.119	0.120	0.169	0.169

***, **, and * denote two-tailed statistical significance at the 1%, 5%, and 10% level, respectively.

Model 1 includes only intercept and the dummies Before and After. As is evident, the coefficient for Before is negative, contrary to the suggestion of Hypothesis 6, but in line with the descriptive statistics in section 6.2.2. In fact, the coefficient for Before remains negative, yet statistically insignificant, throughout all the models reported in Table 20. Hence, it seems that there are no notable differences in the profitability of transactions made prior to cross-listing and after cross-delisting. This is consistent with the view that the companies that choose to eventually cross-list are active acquirers already prior to the actual cross-listing (Tolmunen and Torstila, 2005). Consequently, Hypothesis 6 is outright rejected.

The coefficient of After is almost statistically significant at the 10% level in Model 1 with a t-value of 1.52. Cross-delisting seems to contribute an additional return amounting to 1.2% in this model. Disappointingly, after we control for the effect of method of payment, the coefficient decreases and becomes even less statistically significant. Also the introduction of variables Toehold, Diversify, Language and Rer in Models 3-4 further decrease the statistical significance of the coefficient of After. On the other hand, when we introduce variables Log mcap, EBIT margin, Cash ratio, Leverage, Non-public and Deal size, the coefficient of After grows to 1.3% in Model 7, indicating that M&A transactions by cross-delisted companies create substantially more value than the deals by cross-listed companies. However, the t-value of the After coefficient is only 1.11 in Model 7 and, hence, not statistically significant.

Model 8 introduces the interaction term Log mcap*After to account for the difference in the effect of cross-delisting between firms of different size. As could have been expected based on the regression analysis of Sample 1, also the effect of cross-delisting to returns from M&A is more intense for smaller companies, however, the coefficient is statistically insignificant. The negative sign on the coefficient of Log mcap*After is likely to be related to the idea presented earlier, i.e that small firms that choose to cross-list do so for dubious hubris reasons and, hence, the decision to cross-delist is likely to be optimal from the viewpoint of the firm, and it implies better judgment by the management of the company. This better judgment is then also visible in better M&A performance. Consequently, Hypothesis 9 is rejected.

Introduction of the variables Publication in Model 9 and Publication*After in Model 10 do not materially affect the sign or significance of the before and after dummies. The coefficient for publication is negative and statistically significant at the 10% level, further supporting Hypothesis 2. The coefficient for Publication*After is, disappointingly, insignificant.

When we take into account self-selection in Model 11, the coefficient of After is not materially affected. However, Model 12, which is the self-selection equivalent of Model 7, indicates that when we account for self-selection and the interaction between firm size and cross-delisting, the variables After and Log mcap*After become closer to statistical significance with t-values of 1.66 and 1.60, respectively. This would hint that the self-selection of cross-delisting companies is likely to affect the results. However, the coefficient for the inverse Mills ratio is insignificant. Thus, there is no evidence of self-selection.

Although not statistically significant, the results imply that small companies benefit from cross-delisting, whereas the effect of cross-delisting decreases as the size of the company grows. Interpreting the regression literally, it seems that cross-delisting has a favorable effect on the acquisition performance of companies which have a market cap below $3.7 billion, whereas larger companies' M&A performance deteriorates on average when they cross-delist.

There are only some very minor differences in the coefficients of the control variables between Samples 1 and 2. Rer is positively related to value creation in Sample 2, as one would expect, but contrary to Sample 1. However, Rer is not statistically significant in neither of the samples. Also EBIT margin and Cash ratio report coefficients with differing signs to regressions for Sample 1, but again, the results are statistically insignificant. Hence, there are no significant differences in the coefficients of the control variables between Samples 1 and 2.

6.3.3 Robustness check – CAR in various subsamples

I also run a robustness check, where I examine the bidder CARs, both samples divided into nine subsamples based on four deal characteristics which prior literature has shown to relate to acquirer value creation, i.e. method of payment, company status of the target, deal size, and acquirer size. This analysis provides no surprises as it indicates that stock deals are worse than cash deals, takeovers of non-public targets are more value creative than takeovers of public firms, and that generally larger deals and deals by larger firms are worse. There are, however, two notable exceptions. The positive coefficient of the Deal size variable in the regressions for Sample 1 seems to relate to the fact that the control group's deals are better when they are larger, whereas cross-listers fare better in their smaller deals. Also consistent with the regression results, large cross-listers seem to make better deals than small cross-listers, further supporting the idea, according to which small cross-listers are affected by hubris.

7 Summary and conclusions

This thesis examines the relation between cross-listing and cross-delisting, and acquirer wealth creation in transatlantic M&A. The study was inspired by the findings of Tolmunen and Torstila (2005), who show that European companies cross-listed in the U.S. are substantially more active in acquiring U.S. based targets than their non-cross-listed peers. More importantly, the authors showed that the acquisitions by cross-listers are larger and more equity-financed. This raises the obvious question: are the acquisitions by cross-listed companies wealth creative, given the fact that poor returns from acquisitions are generally associated with both larger (Moeller et al., 2004) and more equity financed transactions (see, e.g., Travlos, 1987; Amihud et al., 1990; Andrade et al., 2001).

In addition to the pressing need to determine whether acquisitions by cross-listed companies are significantly wealth destroying as hinted by the evidence of Tolmunen and Torstila (2005), this thesis was also motivated by the non-existence of empirical studies on the relation between cross-delisting and M&A. Already the knowledge on cross-delisting is limited to two academic research papers (Witmer, 2005; Doidge et al., 2008), but there is not a single study on the association between cross-delisting and M&A. Furthermore, deregistering requirements were alleviated on March 21, 2007, when the SEC adopted Exchange Act Rule 12h-6, after which a large number of companies have cross-delisted and subsequently made acquisitions. Consequently, it is now possible to examine the relation between cross-delisting and M&A with a meaningful dataset.

The company sample used in the study consists of 281 European companies that have been cross-listed in the U.S. between 1.1.1980 and 31.12.2008, and of 668 non-cross-listed control group companies from the Dow Jones STOXX total market index for Europe. M&A transactions in the U.S. by these companies are gathered from SDC. The first acquisition sample consists of 451 takeovers by the cross-listed companies and 951 by the control group. The second M&A sample consist of the same 451 takeovers by the cross-listed companies, as well as 105 acquisitions by these companies prior to cross-listing, and 72 acquisitions after cross-delisting. In order to evaluate managerial hubris, I gather a unique database of publication hits through LexisNexis. I also gather stock price, index price, and money market rate data from Datastream for the calculation of the acquirer CARs. Furthermore, I gather financial statement data from Worldscope, and exchange rate data from Datastream.

7.1 Overview of the empirical results

Table 21 below summarizes the main findings of the thesis. Consistent with the idea that cross-listed companies more frequently suffer from managerial issues and hubris, it seems that the cross-listing status substantially increases the firm's visibility in prestigious business publications. My results indicate that cross-listed companies appear on the headline of Business Week, Financial Times, and Wall Street Journal on average 30.6 times during a one-year time period leading to a takeover, while the non-cross-listers appear only 12.8 times. Furthermore, the results remain robust even after controlling for the size of the company, and the difference seems to be even larger when we look at the median figures, those being 16 for the cross-listers and 5 for the non-cross-listers. It seems that the management of cross-listed companies like seeing their company in the headlines and, consequently, they engage in

Table 21: Summary of findings

This table summarizes the key findings of the thesis.

Hypothesis	**Evidence**
H_1: Cross-listed companies are more visible in prestigious business publications than their non-cross-listed peers around takeover announcements	Strong evidence found. The average number of hits in Business Week, Financial Times, and Wall Street Journal is 30.6 for the cross-listers and 12.8 for the control group. The differences in both average and median figures are significant at the 1% level.
H_2: The higher the visibility of the acquirer in prestigious business publications, the lower the returns from M&A	Support found. The coefficient for Publication hits is -0.02%, which is statistically significant at the 1% level.
H_3: Cross-border acquisitions by cross-listed acquirers are less value creative than cross-border acquisitions by non-cross-listed companies	Only weak evidence found. The average control group CAR is 0.55% whereas the average CAR for cross-listers is 0.19%. The difference, however, is not consistently statistically significant. The regression coefficient for Cross-dummy is also insignificant.
H_4: The difference in acquirer gains between cross-listed and non-cross-listed companies is higher for larger companies	No support found.
H_5: Acquisitions by cross-listed acquirers are wealth destroying	Some evidence found in support of H_5. Although the average CAR of 0.19% suggests that cross-listers roughly break even, the average $CAR is -93.8$m indicates substantial value destruction.
H_6: Gains from acquisitions decrease after company cross-lists	No evidence in support of H_6 found.
H_7: Gains from acquisitions increase after company cross-delists	Some evidence found. The average CAR rises after cross-delisting from 0.19% to 0.72%. The difference, however, is not consistently significant. Also after controlling for other deal characteristics in the regression analysis, the difference is statistically insignificant potentially due to the small sample size.
H_8: Visibility in prestigious publications is smaller for cross-delisted companies than for cross-listed companies	Strong evidence in support of H_8. The average number of publication hits drops to 6.8 after cross-delisting, which is statistically different from the cross-listers' figure at the 1% level.
H_9: The effect of cross-delisting to acquirer returns is more intense for larger companies	No support found.

flashy corporate transactions that are more likely to boost their own egos than the company's share price. Consistent with this remark, the regression analysis shows that there is a negative relation between the number of hits in the above mentioned publications and gains from acquisitions. The regression analysis implies that for every extra 10 hits in these publications, the CAR of the takeover goes down by 0.2%, which is a substantial drop, given the fact that acquisitions tend to be roughly break-even corporate transactions for the acquirer.

Contradicting with the idea that cross-listers are heavily affected by managerial issues, Doidge, Karolyi, Lins, Miller, and Stulz (2009) show that the companies which have large private benefits available for controlling shareholders or are controlled by the management of the company, are less likely to cross-list in the U.S. due to constraints on the consumption of private benefits resulting from the listing. However, the difference in the strictness of reporting and corporate governance legislation between Europe and the U.S. is not substantial and, hence, it might be that subjecting oneself to the U.S. regulations does not diminish possibilities for managerialism materially for European companies. Furthermore, although managerial issues would be somewhat relieved by cross-listing, the management of cross-listers could still be suffering from hubris and, hence, make worse acquisitions than the control group due to over-optimism in picking and valuing acquisition targets.

The descriptive statistics indicate that the deals made by the cross-listers are roughly break-even corporate events for the acquirers with an average CAR of 0.19% during the 3-day event window. The average CAR for the control group is somewhat higher; 0.55%, however, the difference between the CARs of the cross-listers and the control group is not consistently statistically significant. Interesting results are also obtained by observing the dollar weighted abnormal returns, as the average $CAR is a substantial loss of -$93.8m for the cross-listers and a slightly value creating $0.9m for the control group. This in line with the findings of Moeller et al. (2004), who show that $CARs tend to be substantially more frequently negative than CARs, indicating that acquisitions by larger companies are usually worse.

The regression analysis provides similar results than the descriptive statistics, as cross-listing seems to have a decreasing effect on the returns from M&A, but the coefficient for cross-listing dummy is not consistently significant. Furthermore, when we take into account the effect of self-selection by cross-listed companies, the significance of the coefficient decreases to very low levels. In sum, there is some weak evidence that cross-listers make worse

acquisitions than non-cross-listers even after controlling for a number of deal characteristics, however, the negative relation between cross-listing and returns from M&A is weak at best.

Evidence regarding firm size and cross-listings effect to acquisition performance hints that the effect of cross-listing to returns from M&A might be more intense for smaller companies, even though the opposite was expected. Although being statistically insignificant, this result might relate to the fact that smaller companies benefit less from cross-listing due to relatively higher costs (see, e.g., Zingales, 2007). Consequently, those small companies that nevertheless choose to cross-list, do so for dubious reasons, such as following a fad or seeking to increase the management's prestige. This would indicate that the managers of these companies are more prone to hubris, which is then visible in poor acquisition performance.

Interesting results are obtained with regards of publication hits in prestigious business publications before cross-listing, during cross-listing, and after cross-delisting. It seems that the publicity gotten by the sample companies does not change substantially as they cross-list, but the publicity collapses after cross-delisting.

In line with the publication hits results, there does not seem to be any significant differences between the acquisition performance of companies prior and during cross-listing. This is likely to relate to the fact that companies which ultimately choose to cross-list have been shown to be active acquirers in the U.S. already prior to cross-listing (Tolmunen and Torstila, 2005), indicating that cross-listing does not change the acquisition behavior of a company and, hence, returns from M&A are unaffected by cross-listing.

The descriptive statistics on acquisition performance after cross-delisting show that these transactions are substantially more value creative than those made while being cross-listed, as the average CAR jumps from 0.19% to 0.72%, the latter being statistically different from zero. However, the difference in the CARs is only statistically significant in the somewhat noisy 7-day event period. Similar pattern is also visible in the $CARs, as the 3-day $CAR after cross-delisting is -$49.3 and, hence, substantially higher than -$93.8 during cross-listing. The difference in the $CARs, however, is not statistically significant either.

As there were only 53 transactions after cross-delisting with known method of payment, also the regression results regarding cross-delisting's effect to value creation are insignificant, although the sign is as expected. Furthermore, contrary to what was hypothesized, the effect

of cross-delisting seems to be more intense for smaller companies, although also this result is statistically insignificant. This might be associated with the fact that small companies choose to cross-list for irrational reasons and, hence, the decision to cross-delist is evidence of better judgment by the management, which is then likely to lead to better M&A performance.

Both the publication hits and acquisition performance results support a view, according to which cross-listing in itself does not change the behavior of a company, but it is a symptom of larger hubris and agency cost issues prevalent in the firm. Furthermore, cross-delisting is likely to be a sign of a change in the company to a better direction, as it seems that the cross-delisted companies concentrate more on creating shareholder value as opposed to irrational empire building, which then leads to better M&As and diminished search for publicity.

7.2 Potential biases in the study

My results include a number of potential biases inherent in the methods used. First, event study as a method to investigate wealth effects has been criticized as it leans on short-term market reactions, which might be impossible to separate from the noise present in the market. Furthermore, even in the absence of noise, M&A transactions are often complicated deals, which even experienced corporate finance professionals have hard time valuing. Therefore, the market is quite likely to misinterpret the value created in these transactions. As the measurement of long-term returns from M&A suffers from even larger caveats, short-term market model is, nevertheless, the prevailing method of assessing the value creation in M&A.

Second potential source of bias emanates from inadequate sample size. The sample size is sufficient for cross-lister and control group acquisitions, but the poor availability of observations of M&A deals by the cross-listers prior to cross-listing and after cross-delisting makes it problematic to generalize the results. The problem is most obvious with cross-delisted companies, as there were only 72 transactions announced after cross-delisting.

Third, the multivariate analysis is likely to suffer from omitted variable bias. Although I employ 11 control variables in addition to industry, year, and country dummies, the coefficient of determination of my final model is at times unsatisfactory. Obviously there are a number of additional aspects, which might relate to value creation, but are generally not measurable. Also some measurable aspects, such as managerial and government ownership of the acquiring firm, had to be left out due to the scarce availability of data.

7.3 Suggestions for future research

As the present study is the third stand-alone piece of academic research to date to study the relation between cross-listing and M&A transactions, there is a wide avenue for possible future research. The most obvious extension of this study would be to examine the acquirer wealth creation with a broader geographical scope. On one hand, one could include all the companies that are cross-listed in the U.S. to determine whether the relation between acquirer returns from M&A and cross-listing is similar with also other companies than European ones. On the other hand, one could take the analysis a step further and study the relation on another market of cross-listing. One could for example turn the research problem upside down and study the transatlantic acquisitions performance of U.S. companies cross-listed in Europe. It would be interesting to see whether this would have a material impact on the results.

As this study only addresses the value creation to the shareholders of the bidder, another obvious topic for further research could be target and combined gains in acquisitions. This would make it possible to investigate further the difference between the returns in M&A between cross-listed and non-cross-listed companies. Specifically, it would be interesting to see whether the deals made by the cross-listers are wealth destroying as a whole, or if the suboptimal performance of the cross-listers relates to the fact that cross-listers overpay in acquisitions and, hence, the target reaps most of the returns.

Perhaps the most promising avenue for further research is the relation between cross-delisting and M&A, as this thesis is the first academic research paper to investigate the matter. The most obvious extension of this study with regards of cross-delisting would be to employ a larger dataset to be able to get more meaningful results as my findings hinted the existence of a relation between cross-delisting and returns from M&A, yet, the very small sample size rendered the multivariate results insignificant. By allowing more time to pass by, a larger number of companies are likely to deregister from the U.S. exchanges and, furthermore, the large number of companies that already cross-delisted during 2007 are likely to keep acquiring U.S. companies. One interesting avenue for further research in the realms of cross-delisting would be to build on the work by Tolmunen and Torstila (2005) to formally check whether the acquisition behavior of a company changes after it cross-delists. This is certainly indicated by the descriptive statistics on method of payment and transaction size in the present study.

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Appendices

Appendix A – Correlation matrices

Table 22: Correlation matrix for the explanatory variables in Sample 1 regression models

The table reports the pearson correlation coefficients between a number of variables that are used to explain acquirer wealth effects. Cross is a dummy variable, which takes a value of one if the acquirer is cross-listed in the U.S. at the time of the acquisition. Log $\hat{\lambda}_1$is the inverse Mills ratios, estimated as the first stage of the Heckman (1979) two-stage model. % Equity is the percentage of the purchase price paid with equity according to Thomson Financial SCD database (SDC). Toehold is a dummy variable, which takes a value of one, if the acquirer has ownership in the target prior to the announcement of the deal according to SDC. Diversify is a dummy variable, which takes a value of one if the bidder and target are from different major industries as defined by the first two digits of the SIC code as in Thomson Financial Worldscope database (Worldscope). Language is a dummy variable, which takes a value of one if the official language of the acquirer's home country is English. Relative exchange rate, Rer, measures the deviation from the average exchange rate of local currency against U.S. dollar during the sample period. Log mcap is the logarithm of the market cap of the acquirer 21 trading day prior to announcement of the deal in $m as in Thomson Financial Datastream database. All accounting variables are retrieved from Worldscope and are from the last full year financial statement filed prior to the deal and refer to acquirer characteristics. EBIT margin is the ratio of operating income to sales. Cash ratio is the ratio of the cash and short-term investments to total assets. Leverage is the ratio of total debt to market cap. Non-public is a dummy variable, which takes a value of one if the target is defined as a private company or a subsidiary of a public company in SDC. Deal size is the logarithm of the value of the transaction as shown in SDC in $m. Publication is the number of times the name of the company was mentioned in the headline of Business Week, Financial Times or Wall Street Journal during a one-year period ending 10 days after the announcement on an M&A transaction by the sample company as in LexisNexis database.

	Cross	$\hat{\lambda}_1$	**% Equity**	**Toehold**	**Diversify**	**Language**	**RER**	**Log mcap**	**EBIT margin**	**Cash ratio**	**Leverage**	**Non-public**	**Deal size**	**Publication**
Cross	1.000	-0.332	0.208	0.061	-0.038	-0.170	0.073	0.298	-0.046	0.105	-0.052	-0.067	0.155	0.286
$\hat{\lambda}_1$		1.000	-0.217	-0.052	0.058	0.519	-0.009	-0.593	0.109	-0.028	-0.101	0.256	-0.389	n/a
% Equity			1.000	0.009	-0.044	-0.154	0.160	0.011	-0.153	0.143	0.028	-0.051	0.106	0.108
Toehold				1.000	0.031	0.033	-0.012	0.068	-0.010	0.008	0.001	-0.034	0.026	0.043
Diversify					1.000	0.012	-0.021	0.005	-0.048	-0.035	0.046	0.050	-0.098	0.047
Language						1.000	-0.052	-0.248	0.145	-0.004	-0.128	0.180	-0.232	-0.048
Rer							1.000	-0.098	-0.063	-0.075	0.035	-0.026	-0.033	0.118
Log mcap								1.000	0.077	-0.081	-0.144	-0.223	0.395	0.505
EBIT margin									1.000	0.032	-0.082	0.022	0.036	-0.029
Cash ratio										1.000	-0.154	-0.035	-0.005	-0.015
Leverage											1.000	-0.007	-0.017	-0.016
Non-public												1.000	-0.460	-0.143
Deal size													1.000	0.232
Publication														1.000

Table 23: Correlation matrix for the explanatory variables in Sample 2 regression models

The table reports the pearson correlation coefficients between a number of variables that are used to explain acquirer wealth effects. Before is a dummy variable, which receives a value of one if the acquirer has not yet been cross-listed in the U.S. at the time of the acquisition. After is a dummy variable, which takes a value of one if the acquirer has cross-delisted from the U.S. at the time of the acquisition. $\hat{\lambda}_2$ is the inverse Mills ratio, estimated as the first stage of the Heckman (1979) two-stage model. % Equity is the percentage of the purchase price paid with equity according to Thomson Financial SCD database (SDC). Toehold is a dummy variable, which takes a value of one, if the acquirer has ownership in the target prior to the announcement of the deal according to SDC. Diversify is a dummy variable, which takes a value of one if the bidder and target are from different major industries as defined by the first two digits of the SIC code as in Thomson Financial Worldscope database (Worldscope). Language is a dummy variable, which takes a value of one if the official language of the acquirer's home country is English. Relative exchange rate, Rer, measures the deviation from the average exchange rate of local currency against U.S. dollar during the sample period. Log mcap is the logarithm of the market cap of the acquirer 21 trading day prior to announcement of the deal in $m as in Thomson Financial Datastream database. All accounting variables are retrieved from Worldscope and are from the last full year financial statement filed prior to the deal and refer to acquirer characteristics. EBIT margin is the ratio of operating income to sales. Cash ratio is the ratio of the cash and short-term investments to total assets. Leverage is the ratio of total debt to market cap. Non-public is a dummy variable, which takes a value of one if the target is defined as a private company or a subsidiary of a public company in SDC. Deal size is the logarithm of the value of the transaction as shown in SDC in $m. Publication is the number of times the name of the company was mentioned in the headline of Business Week, Financial Times or Wall Street Journal during a one-year period ending 10 days after the announcement on an M&A transaction by the sample company as in LexisNexis database.

	Before	**After**	$\hat{\lambda}_2$	**% Equity**	**Toe hold**	**Diversify**	**Language**	**RER**	**Log mcap**	**EBIT margin**	**Cash ratio**	**Leverage**	**Non-public**	**Deal size**	**Publication**
Before	1.000	-0.161	n/a	0.059	-0.047	-0.014	0.196	0.028	-0.032	0.003	0.01	-0.003	-0.066	0.045	0.049
After		1.000	-0.443	-0.145	-0.053	0.122	0.064	-0.201	-0.069	0.038	0.009	-0.068	-0.004	-0.087	-0.183
$\hat{\lambda}_2$			1.000	0.184	0.205	-0.038	-0.689	0.239	0.561	-0.251	-0.232	0.18	-0.208	0.398	n/a
% Equity				1.000	-0.051	-0.045	-0.112	0.231	-0.105	-0.217	0.112	-0.106	-0.122	0.113	0.028
Toehold					1.000	-0.099	-0.126	-0.011	0.136	0.031	-0.019	0.098	-0.292	0.085	0.064
Diversify						1.000	-0.064	-0.016	0.076	-0.042	-0.062	-0.009	0.087	-0.129	0.073
Language							1.000	-0.093	-0.299	0.125	0.038	0.065	0.144	-0.202	-0.104
Rer								1.000	-0.064	-0.082	-0.116	0.027	-0.022	0.02	0.147
Log mcap									1.000	0.151	-0.24	-0.103	-0.156	0.356	0.520
EBIT margin										1.000	0.045	-0.011	0.039	0.074	0.017
Cash ratio											1.000	-0.177	0.023	-0.053	-0.132
Leverage												1.000	0.032	-0.079	-0.001
Non-public													1.000	-0.477	-0.132
Deal size														1.000	0.231
Publication															1.000

Appendix B – Publication hits

Table 24: Publication hits regression

The table presents the results of an OLS regression, where the dependent variable is the number of times when a sample company has appeared in the headline of Wall Street Journal, Financial Times or Business week on a period of one year ending 10 days after the announcement of an M&A transaction by the sample company. The publication hits are obtained through LexisNexis keyword searches. Log mcap is the logarithm of the market cap of the acquirer 21 trading days prior to the announcement of the transaction in $m as in Thomson Financial Datastream Database. Cross is a dummy variable which takes a value of one if the company is cross-listed at the time of the acquisition. The acquisition sample includes 1,382 M&A transaction carried out by a sample of 281 European companies while being cross-listed in the U.S. during 1.1.1996-31.12.2008, excluding those companies that cross-listed prior to 1980, or by the control sample, which includes those companies from the Dow Jones STOXX Total Market Index for Europe (December 2008 version) that are not cross-listed at the time of the acquisition. The sample excludes financial companies (first digit of SIC code 6) due to differences in their financial reporting. Europe is defined as the original EU-15 countries and Norway and UK. Both acquisition samples are retrieved from the Thomson Financial SDC database, and include only completed acquisitions that result in majority ownership of the target by the bidder, and deal size is at minimum $1m. Companies that hold 5% or more of the total hit volume of a subsample are removed from the analysis. T-values are shown in parenthesis below the coefficient. The last row of the table reports the R^2 goodness of fit measure.

Variable	OLS
Intercept	2.23
	[0.34]
Log mcap	4.37***
	[2.51]
Cross	11.4***
	[4.66]
N	1382
R^2	0.154

***, **, and * denote two-tailed statistical significance at the 1%, 5%, and 10% level, respectively.