The Revaluation Effect Following M&A Withdrawals

Evidence from Europe between 1997 - 2019

Master's Thesis in Accounting and Finance

Supervisor: Reda M. Moursli

Authors: Gomez, Anton | Hedin, Jonathan

Abstract

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Authors: Anton Gomez, Jonathan Hedin

Advisor: Reda M. Moursli

Five keywords: Withdrawn bids, Cancelled bids, Event study, Target revaluation, Cumulative abnormal return

Purpose: The main purpose of this study is to examine the revaluation effect on European target firms following a withdrawn bid. Thereto, investigate if different deal characteristics including method of payment, company status, cross-border versus domestic, and industry relatedness cause any variation in the revaluation effect on target firm wealth.

Methodology: This thesis employs a quantitative research approach by estimating the net cumulative abnormal return (CAR) effect through an event study methodology. The results from the event study are translated into dependent variables and thereafter incorporated in regressions along with four explanatory variables and six control variables.

Theoretical perspectives: The following theories are applied: the information hypothesis, the synergy hypothesis, and the new information hypothesis (NIH). Previous research is also used as theoretical lenses.

Empirical foundation: The study is based on 107 withdrawn deals on the European market between the years of 1997 and 2019.

Conclusions: The main finding from this thesis conveys that there is a statistically significant positive short-term revaluation effect on target shareholder wealth following bid withdrawals in Europe. The difference in average net cumulative abnormal return (CAR) between the categories in each of the four deal characteristics is, however, not statistically significant.

Acknowledgments

29th May 2020

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Anton Gomez   Jonathan Hedin

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1. Introduction

This section includes a background to the research area, a problem discussion where the research problem is addressed from both a theoretical- and practical point of view, a purpose and research questions, contributions of the research, limitations with the study, and finally a disposition overview.

1.1 Background

Prior to the subprime crisis in 2008, global merger and acquisition (M&A) activity measured by value reached an all-time high of approximately $4.360 trillion (Moschieri and Campa, 2009). Historically, a significant portion of that M&A activity has been dominated by the US and the UK, presumably explaining why a lot of academic attention has been confined to those markets in particular. However, in the aftermath of the Euro debut in 1999, privatization and deregulation of the European market, improved integration, and the promotion of technological development, M&A activity across the whole of Europe has gained traction and in 2007 even reached levels equal to those observed in the US takeover market (Moschieri and Campa, 2009). This development aligns with the predictions of Weston et al. (1990), whose research suggests that there is a positive relationship between takeover activity and deregulation. In light of Europe's increased involvement in global M&A activity, to our knowledge few studies have dedicated sufficient effort to empirically address revaluation effects on target shareholder wealth due to M&A withdrawals in European countries, which is why this paper seeks to contribute with such a perspective.[1]

A popular theme in the existing body of research is the measurement of both acquiring- and target firm wealth effects when M&A deals are announced (Andrade et al., 2001; Bruner, 2002; Cornett et al., 2011; Fuller et al., 2002; Jarrell and Poulsen, 1989; Moeller et al., 2005; Walker, 2000). However, fewer studies attempt to empirically address the wealth revaluation effects on targets in the event of deal cancellation, despite the increasing occurrence of

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[1] Western Europe as defined in the Zephyr database ministered by Bureau van Dijk. Our final sample includes deals from Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

unsuccessful deals during the last decade (Liu, 2019).[2] According to Jandik and Makhija (2005), nearly 2000 acquisitions worldwide were labeled as unsuccessful in the Securities Data Company (SDC) Worldwide M&A Database between 1985-1995. Yet, this only illustrates a snapshot of the history of withdrawn deals. A considerable amount of $192 billion was cancelled by April 2015, in absolute terms the largest recorded withdrawn deal value measured over the same period since the subprime crisis in 2008 (Liu, 2019). To give more perspective, about 10% of all deals with a value larger than €1 billion are withdrawn annually (McKinsey, 2019).[3]

In contrast to the commonly denoted finding that targets seem to earn significant abnormal returns upon the announcement of M&A bids, announcements of cancelled bids alone seem to have a negative monetary effect on target shareholder wealth although recent evidence shows that the net effect from bid- and withdrawal announcements is positive (Andrade et al., 2001; Bruner, 2002; Davidson et al., 1989; Fuller et al., 2002; Jandik and Makhija, 2005; Lai et al., 2006; Liu, 2019). Scholars have developed frameworks to explain the rationale behind this revaluation phenomenon. The most well-established theories highlighted in the literature originates from the conventional notion that deal premiums can be explained by either new information or synergistic effects. The first theory concerns information and builds on the idea that bidding managers hold an informational edge regarding the real value of the firm being targeted, which reflects the bid premium (Bradley et al., 1983). The initial bid announcement effect on target shareholder wealth is thus generated by the market as a response to correct for the assumed information gap, independent of the completion of the deal. The other common hypothesis concerns synergy and relates to the idea that deal premiums are a reflection of the excess value that is projected to be created through synergistic effects after a transfer of control between two entities (Bradley et al., 1983). Although both of these fundamental theory propositions share the prediction that target shareholders experience a positive wealth impact following a completed bid, they predict different wealth outcomes following a withdrawn bid. This is why we, later on, will evaluate

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[2] Throughout the study, we make no distinction between mergers, acquisitions, and takeovers. Neither do we treat cancelled, withdrawn, terminated, failed, or unsuccessful deals as separate events.

[3] The following markets were included in the study: Asia, Europe, Latin America, North America, Middle East.

these theories with regard to their respective efficacy in explaining the empirical results of our study.

1.2 Problem Discussion

M&A activity is often labeled as a phenomenon that takes place within so called waves (Gaughan, 2017, p.42). These waves are believed to be caused by a number of factors including regulatory, economic, and technological shocks (Jensen, 1993). As predicted by neoclassical efficiency theory, managers will most likely be tempted to participate in M&A activity when these shocks allow them to capitalize on growth opportunities and conversely do the opposite when such opportunities disappear (Rau and Stouraitis, 2011). As the global economy evolves, M&A waves will continue to emerge at regular intervals and thereupon stimulate deal activity in various regions and industries. Likewise, when waves revert and managers become more disagreeing in their attitudes toward valuations of companies, a noteworthy fraction of deals will presumably be cancelled.[4] Yet, a majority of studies allocate a disproportionate amount of attention to both acquiring- and target firm wealth effects when M&A bids are announced while relatively few consider the net wealth effects on target shareholders in the event of bid withdrawals. The importance of extending the knowledge for the implications of withdrawn bids is high, not only to improve our understanding of the history of M&As but to help academics and practitioners to more accurately predict how forthcoming cancelled bids across Europe affect target shareholder wealth in the short-term.

Many studies have a tendency to geographically confine their studies to the US and the UK, consequently failing to provide an alternate more focused perspective that may or may not demonstrate differing evidence concerning the revaluation effects on target firms following failed M&A attempts. A selection of European countries, defined as Western Europe by the Zephyr database, is especially interesting to study due to its soaring takeover activity during the two last decade which presumably has been facilitated through the European Union's various measures to harmonize regulation (Moschieri and Campa, 2009).

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[4] Luo (2005) provides further evidence for the markets role in the withdrawal of bids by showing that bidding managers have an increased tendency to cancel a deal if the post-announcement abnormal return is small, indirectly suggesting that the market has an impact on managerial learning and thus the risk of bid withdrawal.

There is also a consensus in the research that deal characteristics cause observable fluctuation in abnormal returns. For instance, research has found that deal characteristics such as payment method, company status, cross-border versus domestic deals, bid premium, market capitalization, industry relatedness, and hostile versus friendly deals, among others indeed are guilty of producing abnormality in post-bid returns (Andrade et al., 2001; Bruner, 2002; Davidson and Cheng, 1997; Fuller et al., 2002; Goergen and Renneboog, 2004; Loughran and Vijh, 1997; Travlos, 1987; Yook, 2003). The degree to which specific deal characteristics cause fluctuation in returns following a withdrawn bid is, however, less extensively researched. Thus, we also aim to investigate whether different deal characteristics cause any variation in the revaluation of target shareholder wealth.

By researching M&A withdrawals revaluation effect on target shareholder wealth in a selection of European countries between 1997-2019, we aspire to share evidence with both theoretical- and practical implications. The results of the study are not solely limited to produce useful insights to private investors or institutions who actively track revaluation effects on European targets following bid withdrawals but are also expected to be valuable for managers who professionally engage in M&A activity on both ends of deals.

1.3 Purpose and Research Question

The aim of this study is to explore the revaluation effect on target firms following a withdrawn bid. Using an event study methodology, we explore if target firms in Europe from 1997 to 2019 realize any net gains (net CARs measured from pre-announcement and post-withdrawal) following their bids being cancelled. We also investigate if different deal characteristics including method of payment, company status, cross-border versus domestic, and industry relatedness have any ability to cause observable variation in the revaluation effect on target shareholder wealth.

The following research questions were formulated to address the study's research purpose:

Research Question 1: What is the revaluation effect on European targets following a withdrawn bid? Through which theoretical lense can the results best be interpreted?

Research Question 2: Do deal characteristics including method of payment, company status, cross-border versus domestic, and industry relatedness have any significant impact on the revaluation of targets following a withdrawn bid?

1.4 Our Contribution

The main finding from this study conveys that there is a statistically significant positive short-term revaluation effect on target shareholder wealth following bid withdrawals in Europe. However, the difference in average net cumulative abnormal return (CAR) between the categories in method of payment, company status, cross-border versus domestic, and industry relatedness is shown to be statistically insignificant. This study contributes to the existing literature in three ways; by focusing on target revaluation rather than post-bid M&A performance solely, bringing traditional determinants of M&A performance into a relatively new context, and investigating revaluation effects from a European perspective.

1.5 Limitations

When discussing the wealth impact following a withdrawn bid we explicitly refer to the monetary return that target shareholders receive. We do not address the wealth effect on any stakeholders beyond shareholders such as employees or other external actors given the difficulty in quantifying such effects.

Since we investigate the short term revaluation effect on target firms, the start- and end points of the event windows must be set relatively close in time to both the bid announcement and the cancellation announcement. Although deliberately planned, this methodology ultimately prevents us to measure target abnormal returns over a longer time frame. Even if that had

been the main scope, the inescapable reality that a majority of targets in the sample at a later stage either were delisted or acquired would have ruled out the possibility of pursuing such an ambition to a sufficient extent. Although this limitation prevents the study from identifying long-term wealth effects, it increases the probability of isolating the exclusive revaluation effect of the withdrawal event. Thereby reducing the likelihood that abnormality in returns is caused by other unrelated phenomena which might be the case in long-term measurements. Malmendier et al. (2016) stress the difficulty in making precise assessments of long-term cumulative abnormal returns due to the risk of capturing undesired noise.

1.5 Disposition

The remainder of the study is structured as follows. In section 2, we present the generic process of M&As along with common reasons for withdrawn bids. Further, we outline theoretical lenses through which the empirical results can be interpreted followed by a remark on drivers for deal outcomes. In section 3, we provide an overview of previous literature. In section 4, we outline the hypotheses that are being tested for and their respective connections to theoretical- and empirical outputs. In section 5, we present the research approach, the event study methodology, the regression, and the criteria by which the quality of the study is evaluated. In section 6, we elaborate on the systematic approach to data collection, outline the included exclusion criteria, and discuss characteristics of our final sample. Moreover, we present and define the regression variables. In section 7, we demonstrate empirical findings from both the event study and the regression, followed by analyzes. Last but not least, in section 8, we conclude the study, discuss our main findings, address contributions to research, and provide suggestions for future research.

2. Theory

This section outlines the generic process behind M&As and the theory that facilitates the interpretation of revaluation effects following terminated bids. The theoretical framework includes the information hypothesis, the synergy hypothesis, and the new information hypothesis and serves to explain our empirical findings. A concluding remark on drivers for deal outcomes is also presented.

2.1 The Generic Process of M&As

Managers' intention to expand the business can be achieved through either organic growth or M&As. Unlike organic growth which is generated internally, acquired growth can be an attractive path for firms that wish to maintain growth in saturated industries characterized by low demand (Gaughan, 2017). Other motives to pursue growth through M&As includes expansions to new geographic markets or unexplored business areas. Strategic bidding firms tend to look for takeover candidates that bring operational synergistic gains in the long term whereas financial bidders are more driven by the financial incentive of identifying undervalued companies with high cash flow outlooks (Gorbenko and Malenko, 2014). The process of a takeover attempt contains a sequence of different events. Broadly speaking, those include the execution of a tender offer, the first public announcement, the official acquisition announcement, the legal finalization of a deal, and possibly a deal withdrawal (Liu, 2019).

The potential outcome of a deal cancellation has many explanations. Typical reasons as to why bids are cancelled on the initiative of the target firm include management- or shareholder rejections whereas deal withdrawals on behalf of the acquirer may occur after unexpected due diligence disclosures, financing problems, or after an unanticipated release of news concerning the target company (Malmendier et al., 2016). Other reasons for withdrawals include regulatory interventions, scenarios in which both parties fail to settle on specific terms (e.g. agreeing on the appointment of a CEO), market or industry dilemmas, and instances where the target firm is acquired by another company (Malmendier et al., 2016).

2.2 Theoretical Background

The information hypothesis, new information hypothesis (NIH), alongside the synergy hypothesis are in previous M&A literature on cancelled bids prevalent in explaining why some target firms experience a positive revaluation following a withdrawn bid while others experience a net loss (Bradley et al., 1983; Croci, 2006; Dodd and Ruback, 1977). Besides the new information hypothesis, extensions to these theories are scarce in the context of bid withdrawals.

2.2.1 The Information Hypothesis

The information hypothesis, originally referred to as the internal hypothesis, suggests that the revaluation effect on target shareholder stocks is driven by the behaviour of the market in response to fresh information (Bradley et al., 1983; Dodd and Ruback, 1977). In other words, the market assumes that new information concerning the real value of the targeted firm is priced in the deal premium which, independent of the completion of the deal, should be accounted for in target shares, resulting in a positive revaluation of target wealth following a withdrawn bid. As Bradley et al. (1983) further suggest, this hypothesis is heavily dependent on the idea that bidding managers enjoy the ability to contribute with better information about the real value of targeted firms than the average participant in the market. This assumption might contradict the ideas of Malmendier and Tate (2008), who highlight the possibility of bidding managers being distracted by overconfidence which, in turn, presumably could question their superior ability to better assess the quality of a deal.

Bradley et al. (1983) argue that the market's tendency to revalue a formerly undervalued target firm upon the release of new information is only one variant of the so called information hypothesis. The other variant suggests that the unveiling of new information prompts the target management to pursue a better operating strategy. Bradley et al. (1983), Dodd and Ruback (1977), and Liu (2019) does however mention the possibility that the positive revaluation effect following a bid withdrawal perhaps also can be explained by target shareholders anticipation of future lucrative offers. If this holds true, target shareholders should presumably experience a negative price development in their shares if those future offers fail to unfold. According to Bradley et al. (1983), the information hypothesis would,

however, oppose such a price correction as information that initially was contained in the first bid should persist, regardless of future bids.

The information hypothesis holds that, following the unveiling of new information, the market is urged to revalue formerly undervalued target firms regardless of bid withdrawals. A positive revaluation can thus be achieved in the absence of a transfer of target resources (Bradley et al., 1983). It might be helpful to think of this new information as a public good with a quiet extensive expiration date.

2.2.2 The Synergy Hypothesis

The synergy hypothesis states that the takeover activities of bidding firms are driven by an urge to acquire resources or control (Bradley et al., 1983). This urge is further motivated by the acquiring firms' expectations of realizing synergies. In the scenario of a potential takeover, the bidder has presumably identified an opportunity to revise a targets operating strategy through various value-enhancing measures such as operating improvements, etc. Fundamentally, the synergy hypothesis states that there is a positive relationship between synergy expectations and the size of the premium (Antoniou et al., 2007; Bradley et al., 1983; Diaz et al., 2009; Slusky and Caves, 1991).

While a positive revaluation of target shareholder wealth would align with the predictions of the information hypothesis, it would be inconsistent with the predictions of the synergy hypothesis. Unlike the information hypothesis, the synergy hypothesis is not reliant on the assumption that bidding firms possess superior knowledge of the targeted firms' real value. The synergy hypothesis suggests that a positive effect on target shareholder wealth can only be accomplished if a transfer of control is achieved, i.e. through a completed deal. Likewise, if a transfer of control can not be followed through due to a bid cancellation, a positive revaluation of target shareholder wealth should be impossible. All in all, the synergy hypothesis holds that the initial wealth gain on target shares resulting from a bid-announcement should be offset by an equally large wealth loss following a bid withdrawal as no transfer of control occurs. (Bradley et al., 1983)

2.2.3 The New Information Hypothesis (NIH)

Although Croci (2006) acknowledges the efficacy of the information and synergy hypothesis in explaining different target revaluation outcomes following a withdrawn bid, he argues that they do not account for the possibility that new information is released between the initial bid announcement and the cancellation announcement. The information hypothesis highlighted by Bradley et al. (1983) only considers new information that was communicated through the initial M&A bid. In light of this observation, Croci (2006) developed the new information hypothesis (NIH) which anticipates that the total revaluation effect on target wealth presumably will vary depending on the information issued after the first bid announcement. Indirectly, suggesting that abnormal returns on the cancellation day only accounts for a part of the total wealth effect.

Both the information hypothesis and synergy hypothesis fail to explain the potential outcome that target firm share prices plunge below the pre-bid level after a bid withdrawal. The new information hypothesis (NIH), on the other hand, can explain such a price development with the release of new information between the initial bid announcement and the cancellation announcement (Croci, 2006).

2.3 Drivers of Deal-outcomes: Managerial Learning, Hubris, or Informational Edge?

There is also the aspect of how previous research theorizes about possible drivers for bid-outcomes and especially motives for bid withdrawals. The reasons for a withdrawn bid are presumably many. One of the more recent explanations highlighted in the literature concerns managerial learning. The first attempt to test the relationship between managerial learning and bid-outcome was conducted by Jennings and Mazzeo (1991). In their study, they investigate whether firms' stock return following M&A announcements is able to serve as a proxy for the latter bid-outcome. In failing to find any supporting evidence for such a relationship, they argue that it could either be explained by managers informational edge over investors or managerial hubris. In the case of managerial hubris, they argue that the arrogance of managers is so extreme that it restricts their ability to learn from the market, i.e. to

entertain the idea of withdrawing from a deal if the post-bid announcement return is too small. Luo (2005) and Liu (2019), on the other hand, find empirical evidence for managerial learning. By showing a negative correlation between bidding firm withdrawal returns and M&A announcement returns, they ultimately manage to present significant evidence for bidding managers tendency to cancel a bid in the absence of sufficient market endorsement.

What conclusions can be drawn from these concepts? Returning to the ideas of Jennings and Mazzeo (1991), in weighing possible reasons behind bid-outcomes it seems to be a question of whether managers are prone to learn from the market, are overwhelmed by hubris, or occupies an informational edge over investors. Everything else being held equal, if M&A announcement returns to bidders are perceived to be too low, a cancelled bid would imply that managerial learning holds true and a non-cancelled bid would suggest that managers are overwhelmed by hubris or occupies an informational edge in estimating the value of the target. Another closely related concept that presumably could compete with the hubris hypothesis is the managerialism hypothesis (Roll, 1986; Seth et al., 2000). While hubris is assumed to be of unintentional nature, managerialism is instead considered to explain the intentional actions of managers. Put in a similar context, managerialism thus implies that bidding managers despite low M&A announcement returns would intentionally choose to not cancel the deal (not learn). The notion that managers are assumed by the market to occupy an informational edge concerning the real value of targets is especially interesting and somewhat related to Bradley et al. (1983) information hypothesis and Dodd and Ruback's (1977) internal efficiency hypothesis (Jennings and Mazzeo, 1991).

3. Literature Review

The following section presents an overview of previous literature in the format of identified themes. First, we present evidence on target revaluation in unsuccessful bids. Second, we outline certain determinants of M&A performance.

3.1 Evidence on Target Revaluation in Unsuccessful Bids

Research has produced varying evidence concerning the revaluation effects on target firms following terminated bids. Moreover, only a handful of researchers have studied this particular phenomenon. Dodd and Ruback (1977) were one of the first to provide an empirical investigation of the market reaction following failed takeover attempts. In their assessment, they found that target firms subjected to unsuccessful bids earn positive abnormal returns of 18.96 % during the same month of the offer-announcement. This effect was argued to be permanent and in line with the findings of Liu (2019). A few years later, Bradley (1980) and Bradley et al. (1983) presented evidence for a similar revaluation outcome. Ultimately providing further evidence that the positive abnormal returns that target shareholders on average realize from the deal announcement is not completely offset by the negative returns that arise after bid failure (positive permanent revaluation). Dodd (1980) and Davidson et al. (1989) also find evidence for a permanent revaluation of target firms. However, that is only the case when takeovers are vetoed by the management of the target firm.

A more recent study conducted by Malmendier et al. (2016) measures the same target revaluation effect but separates the impact of cash- and stock offers (payment method). On average, they find that targets subjected to failed cash-takeovers experience a positive net revaluation effect of 15%, when in fact stock-takeovers cause target returns to fall back to pre-offer levels. Croci (2006) and Jandik and Makhija (2005), display contrasting evidence. While considering the period between two-days before the acquisition announcement to two-days after the cancellation announcement, Croci (2006) finds that shareholders of target firms on average experienced a loss of 10.61%. This finding is somewhat misaligned with the

findings of Jandik and Makhija (2005), whose research indicates that target firm abnormal returns fall back to pre-offer levels following bid withdrawals.

The most recent study on the matter, conducted by Liu (2019), suggests that target firms in net, i.e. the difference between announcement CARs and cancellation CARs, experience positive wealth effects if their bids fail to materialize. Hence, this evidence supports the notion that target firms are able to realize a permanent revaluation independent of the completion of the deal. This would align with the predictions of the information hypothesis, as outlined by Bradley et al. (1983). The sample consisted of withdrawn M&A deals in the US between 1977 and 2015 (Liu, 2019). Further, she used an event study approach to derive cumulative abnormal returns for both announcement CARs and termination CARs. Normal (expected) returns were estimated using the market model and the results were based on a short-term event window of [-1, 1].

While Liu's (2019) results for acquirers indicates a net loss of approximately 0.55 %, targets on average seem to earn a net gain of approximately 11.47 %. She further elaborates on possible reasons as to why this is the case. In line with the thoughts of Bradley et al. (1983), a possible reason could be that targets are assigned higher publicity during a deal announcement which increases their prospects of being acquired in the future. Another hypothetical explanation highlighted by the author is that target managers become encouraged to improve their operating strategy, thereby suggesting that the failed acquisition attempt might improve corporate governance by having a disciplinary effect on the targeted firm (Bradley et al., 1983; Liu, 2016). The disciplinary effect on target firms following a failed acquisition attempt is especially emphasized as there seemingly is a positive relationship between terminated bids and CEO turnover (Liu, 2016). Ultimately, suggesting that the wealth gain experienced by targets might be explained by boosted corporate governance. Finally, Liu (2019) refers to research conducted by Dodd and Ruback (1977), Dodd (1980), and Davidson et al. (1989), while she suggests that the unveiling of new information during the course of the M&A process could potentially aid the market to facilitate a revaluation of the targeted firm.

3.2 Determinants of M&A Performance

The following headlines present determinants of monetary M&A performance in the format of themes. These include cross-border versus domestic, company status, method of payment, and industry relatedness.

3.2.1 Cross-border versus Domestic Transactions

While the pursuit of growth in domestic markets may result in diminishing returns, one might search for alternative M&A deals beyond that of the firm's national borders (Gaughan, 2017). This is generally referred to as cross-border transactions and is a commonly revisited area in M&A research. In light of the observation that cross-border deals have grown from 0.5% to 2% between 1980 and 2000, Goergen and Renneboog (2004) argue that a partial explanation to the intensified phenomenon of cross-border M&A activity is globalization. Particularly, one could turn to the frequently discussed theory of foreign direct investments (FDI) by Dunning and Rugman (1985) which suggests that foreign bidders could exploit cross-market imperfections and thereby gain higher returns. Empirical evidence has, however, occasionally been rather inconsistent in finding support for this theory as suggested by Goergen and Renneboog (2004). Instead, other findings frequently indicate the geographical location, method of payment, currency movement, and relative stock market performance as popular motives to either pursue cross-border and domestic deals (Erel et al., 2012; Goergen and Renneboog, 2004). Geographical diversification or hedging might be other conceivable reasons as to why firms intentionally would pursue cross-border deals.

Harris and Ravenscraft (1991) find empirical evidence in favor of the FDI theory. In their study, Harris and Ravenscraft (1991) examine a sample of 1273 public mergers and acquisitions between the years of 1970-1987. The observations were individually collected from various news and directory sources such as *The Wall Street Journal Index* and *Ward's Business Directory of Largest U.S. Companies* and later matched with relevant share price data from the Center of Research in Securities Prices (CRSP) database. Each bid-observation was categorized as either a domestic or cross-border based on the classification of the firm's home office. As such, the sample comprised a total of 1114 domestic U.S mergers and 159 cross-borders mergers. Cumulative abnormal return (CAR) was subsequently measured by

using an event study methodology with an estimation window of [- 220, - 21] prior to the announcement date followed by an event window of [- 20, 4]. Findings from the event study were thereafter incorporated in a regression analysis using the explanatory variables market, tax, exchange rate, and R&D.

The results from their study suggest that foreign acquirers' consistently pay 10 percentage points higher premiums for U.S. targets compared to domestic acquirers (Harris and Ravenscraft, 1991). Consequently, targets in cross-border deals experience significantly higher wealth gains than those participating in domestic deals. The magnitude of this wealth effect is argued to be comparable with the resulting wealth effects of cash-only deals or bids where numerous bidders are involved, ultimately stressing why this bid characteristic should receive far more attention among scholars. About 75 % of cross-border acquisitions materialize between acquirers and targets in associated industries. Industries that are subjected to large investments in R&D also seem to attract more cross-border activity. Additionally, in cross-border deals, they find a positive relationship between target wealth gains and a strong currency of the buyer in relation to the dollar. While the authors adhere to the idea that wealth effects on targets in domestic deals should be comparable to the effects in cross-border deals in the absence of international segmentation of capital and factor markets, FDI theory points out that such simplification does not hold true due to the existence of market imperfections which awards cross-border acquirers a favored position over domestic acquirers. Conclusively, FDI theory, as an international strategy to exploit market imperfections, is supported by the main findings of their study.

Goergen and Renneboog (2004) demonstrate contrasting findings in their study where they investigate short-term wealth effects in large European M&As between the period of 1993 and 2000. In opposite to the findings of Harris and Ravenscraft (1991), Goergen and Renneboog (2004) find that domestic M&As generate higher wealth effects, in terms of premiums paid than cross-border deals. Consequently, European targets in domestic deals experience higher wealth gains than those participating in cross-border deals. Their results are especially compelling as they ultimately question the FDI theory's prediction that cross-border acquirers should be able to capitalize on market imperfections and thus pay higher premiums.

3.2.2 Public versus Private Transactions

One of the most well-discussed bid characteristics in M&A literature concerns the private or public nature of either party involved in an offer. A study of which examines this is the study by Dittmar et al. (2012) were they investigate patterns among financial bidders (e.g. private equity) and strategic bidders (synergy sharing). From their paper, it was found that both financial and strategic bidders diverge in their motives and method of acquiring firms. Resultantly, they offer different premiums for similar targets which, in turn, give rise to different wealth effects on target shareholder wealth. Although their findings suggested that financial bidders offer lower premiums relative to strategic bidders, it was more common for financial bidders to offer cash whereas strategic bidders commonly offered a combination of cash and shares. These findings are in line with the ideas presented by Arzac (2007) and could also be explained by the presence of financial sponsors and demand for higher equity returns.

Bargeron et al. (2008) examine whether the public or private status of acquirers has any impact on target returns from announcement to deal completion (not at withdrawn). The paper comprises a sample of 453 cash-deals between the years of 1980-2005 on the US market, with data extracted from the SDC M&A Database. The rationale of only comprising cash-deals is motivated as to compare "apples-to-apples" since private firms rarely have an option to offer equity given their off-market nature (Bargeron et al., 2008, p. 375). Thus, they find it more appropriate to solely compare cash-to-cash bids. Subsequent sample screenings of less than 100% acquisition stakes, undisclosed deal values, and any other form of corporate event than complete M&As are likewise removed to later match the final sample with share price information from CRSP/Compustat. Moreover, Bargeron et al. (2008) estimates the returns with the buy-and-hold (BHAR) method and incorporate ideas from Schwert (1996) in the construction of their long event window with a 42 day run-up period to capture any pre-bid runups. Schwert's (1996) advocated CAR approach is also implemented when measuring target wealth effects in the short-run since BHAR is commonly subject to misspecification in long-term benchmark returns (Bargeron et al., 2008).

Findings from Bargeron et al. (2008) study showed that publicly traded acquirers, on average, offered a premium of 46.6% whereas acquisitions by private operating firms and private equity firms carried an average premium of 40.9% and 28.5%, respectively. Hence, on average, public offers pay 63.3% higher premiums to target shareholders relative to offers where private equity firms act as buyers. This could, according to Bargeron et al. (2008), be explained by fundamental strategic differences in their operational practices when dealing with M&As. In particular, public acquirers are argued by the authors to search for synergy gains which ultimately lead to higher premiums and increased shareholder wealth, whereas private equity firms searches for firms were synergy gains are nonexistent, which consequently generates lower premiums. As a result, one could assume that public acquisitions generate more shareholder wealth relative to private acquisitions. Not necessarily because private equity firms pay less for public firms but due to their difference in M&A strategies. Further, after controlling for target and deal characteristics that may have impacted the deviations in the observed premiums, there is still an observable difference between public and private firms. This is explained by Bargeron et al. (2008) to be the consequence of at least two aspects. The first is that public acquirers have to reveal more information about their strategic procedures when making offers that could discredit the acquirer's financial capabilities and consequently make the acquirer a target if done unsuccessfully. The second explanation is due to managerial ownership in target firms. However, this notion is supported by weak evidence relative to institutional ownership. Institutional owners in target firms were also found to generate higher premiums for public firms, while it had no impact on private firms.

3.2.3 Method of Payment

When reviewing the phenomena of mergers and acquisitions in academic research, one often stumbles upon the significance of the method of payment. The choice of financing a deal with either cash or shares has shown to be an important implication, not only for the target and acquirer but also for the post-transaction ownership structure (Faccio and Masulis, 2005). Further evidence also suggests that the chosen method of payment has a substantial impact on target returns were cash is considered to be the most dominant, followed by bidder stock and mixed payments (e.g., Franks et al., 1988; Wansley et al., 1987). Considering this, cash

typically appeals to the acquiring firms' strategic incentives and often times illustrates the deals state of urgency. This is argued among scholars to be common when target competition arises as it generally implies less regulatory implications and increased managerial flexibility. On the other hand, bidder stock and mixed payments are more common to limit the risk of overpayment and normally used when cash is limited (Martin, 1996; Malmendier et al., 2016). As a result, one could turn to the method of payment to reveal any undisclosed differences in target returns in M&As.

When considering the implication of method of payment in terminated deals, Malmendier et al. (2016) offer some interesting insights as they study unsuccessful cash- and stock-financed takeover bids as sources of inducing diverse target revaluations. The study is conducted with a short- and long-term perspective through an event study methodology and measures the variation in the target revaluations from pre-announcement to post-withdrawals. The study includes a main sample of 236 failed public-to-public takeover bids between the years 1980-2008 on the US market. The data was screened from the SDC M&A Database and matched with representative control firms from the CRSP/Compustat database. Since the main sample included a combination of stock and cash bids, a subsequent pure sample of 183 pure offers (either 100 % stock or cash) was created to enable further examination of their different effects. In order to estimate target revaluation in the short-term, Malmendier et al. (2016) incorporated the use of cumulative abnormal return (CAR) aligned with the short-term methodology of Schwert (1996) which suggests a run-up period of 25 days prior to the announcement day and 25 days post the cancellation date. The long-term view estimates target returns over five years with one-year increments following the withdrawal announcement. As the long-term window is significantly longer than the short-term, Malmendier et al. (2016) alternated the CAR calculation to Fama's advocated calendar-time approach. This method suggests that one should account for the correlation between two firms over time by constructing an equally weighted portfolio of unsuccessful firms during the same period.

Conclusively, Malmendier et al. (2016) found that cash offers, on average, generate a revaluation of + 15% following an unsuccessful bid whereas stock offers fall back to the pre-announcement level. It was also found that differences between cash- and stock

revaluations do not revert during the five-year period. In fact, each year indicated a significant difference in returns between the methods of payments and hence differentiations in target revaluations. However, none of the independent variables were able to explain why. While it was found that targets were more likely to be acquired in the years following an unsuccessful bid relative to the control firms, no significant difference could be found in the timing or value of any future offers. The result was similar for firms with operational changes following an unsuccessful bid. Findings from the main- and pure sample indicated a 2.7% percentage points difference in favor of the pure sampled cash coefficient which could explain some of the variance in the short-term CAR. All in all, their findings implied a revealing effect of target undervaluation following cash bids and the intuitive notion of higher premiums leading to higher revaluations were thus concluded to be motivated from the sample (Malmendier et al., 2016).

3.2.4 Industry Relatedness

Industry relatedness, i.e. degree of strategic alignment between acquirers and targets in M&As, has shown to be of great concern among scholars. Literature has outlined a variety of ways to define relatedness in M&A transactions, some of which include product market position and business expertise (Barney, 1988). Another simple, yet effective, approach in empirical papers is to classify relatedness by comparing the first two digits in Standard Industry Classification (SIC) codes (Liu, 2019; Davidson and Cheng, 1997). The pervasive assumption that acquisitions or mergers between strategically aligned businesses add economic value to acquiring shareholders seems to hold true (Liu, 2019). Singh and Montgomery (1987) likewise measure industry relatedness but with special emphasis on its impact on target firm returns.

In their study, Singh and Montgomery (1987) explore whether acquisitions characterized by industry alignment give rise to higher wealth effects to target firms than those represented by industry misalignment. The authors examine a sample of 105 acquisition with market values surpassing $100 mn between the years of 1975 and 1980. Each firm in the sample was subsequently matched with stock return data gathered from the CRSP database. Further, they defined a bid as related if both firms involved in the deal either shared similar

products/markets, scientific research, or production technologies. An event study methodology involving computations of cumulative abnormal returns (CAR) was adapted. Thereto, normal (expected) returns were measured using the market model.

Using an event window of [-5, +25], bid acquisition announcements characterized by industry alignment rewarded target shareholders a cumulative abnormal return of 35.9 % whereas bid acquisition announcements with industry misalignment revealed a lower cumulative abnormal return of 26.9 % (Singh and Montgomery, 1987). Ultimately, their findings suggest that target firms involved in industry-related bids experience higher abnormal returns than target firms involved in unrelated ones.

4. Hypothesis Formulation

In this section, we outline the hypotheses that are being tested for and their respective connections to previous literature. A combination of theoretical- and empirical outputs is used to derive the hypotheses.

4.1 Hypothesis Development

Relating to the conclusions in the theory section, notions from the information, synergy, and new information hypothesis are capable of recognizing positive, unchanged, and negative revaluation effects, respectively. Historically, academics have struggled to reach a consensus concerning the revaluation effects on target firms in the aftermath of bid withdrawals. However, drawing from the recent findings of Malmendier et al. (2016) and Liu (2019), targets seem to experience a positive permanent revaluation which encourages further investigation. Consequently, the first hypothesis is as follows:

> H_0^a: *There is no significant revaluation effect on target firms following a withdrawn bid.*

> H_1^a: *There is a significant revaluation effect on target firms following a withdrawn bid.*

As for cross-border and domestic deals, some findings from previous literature suggest that targets receive higher returns when the acquirer is foreign (Harris and Ravenscraft, 1991) while others suggest the opposite (Goergen and Renneboog, 2004). However, little to no research seems to examine whether they have different impacts on the revaluation of target firms. Intuitively, this gives an indication of a knowledge gap which we intend to address through the second hypothesis:

> H_0^b: *There is no significant difference in wealth effects on target firms between cross-border and domestic bids following a withdrawn bid.*

> H_1^b: *There is a significant difference in wealth effects on target firms between cross-border and domestic bids following a withdrawn bid.*

Previous research suggests that public firms pay larger premiums relative to private firms and that this may be the result of diverse operational strategies (Bargeron et al., 2008; Dittmar et al., 2012). Yet, no research seems to investigate whether the private or public status of acquirers produces different effects on target firm returns following terminated bids. This gives rise to an unanswered question of which we will try to address through the third hypothesis:

> $H_0{}^c$: *The public or private status of acquirers cause no significant difference in*
> *wealth effects on target firms following a withdrawn bid.*

> $H_1{}^c$: *The public or private status of acquirers cause a significant difference in*
> *wealth effects on target firms following a withdrawn bid.*

Previous research shows that US targets on average experience a significant positive revaluation following a failed cash-only takeover attempt (Malmendier et al., 2016). This begs the question of whether this outcome holds true even in a European context. The fourth hypothesis is therefore as follows:

> $H_0{}^d$: *There is no significant difference in wealth effects on target firms between*
> *cash-only and non-cash-only bids following a withdrawn bid.*

> $H_1{}^d$: *There is a significant difference in wealth effects on target firms between*
> *cash-only and non-cash-only bids following a withdrawn bid.*

Findings from previous literature are often unanimous in the aspect of industry relatedness impact on target returns as it is shown that related firms generally pay more relative to unrelated firms (Singh and Montgomery, 1987). While the related or unrelated nature of bids has been investigated in the context of post-announcement returns, less effort has been dedicated to exploring their respective impact on target wealth after a failed M&A attempt. The fifth and last hypothesis is therefore the following:

> $H_0{}^e$: *There is no significant difference in wealth effects on target firms between*
> *related and unrelated bids following a withdrawn bid.*

> $H_1{}^e$: *There is a significant difference in wealth effects on target firms between*
> *related and unrelated bids following a withdrawn bid.*

5. Methodology

In this section we present the research approach, the event study methodology, the regression, and the criteria by which the quality of the study is evaluated.

5.1 Research Approach

A quantitative research strategy is employed to empirically answer the established hypotheses. Broadly speaking, this particular method allows us to conduct objective measurements and systematic investigations of the revaluation phenomenon in the collected data sample of withdrawn deals. This approach further entails that deductivism is emphasized, meaning that speculations about possible relationships between our specified variables, namely our hypotheses, are developed with respect to existing research in pursuit of exposing them to empirical scrutiny (Bryman and Bell, 2011).

5.2 Event Study

The event study approach is an old, yet effective, method applied by economists to capture and measure wealth effects across specific events, particularly corporate events (MacKinlay, 1997). The wide historic application of the event study methodology can be further substantiated by looking back to 1988 when the U.S. Supreme Court indirectly granted its use to establish materiality in cases of insider trading and to determine legal remedies in fraud cases (Campbell et al, 1997, p. 179). A key premise for an event study is that markets are assumed to be characterized by rationality, meaning that information about a particular event is incorporated in share prices in an instantaneous manner (MacKinlay, 1997). Given such a rationale, the economic effect on firm value of an event can be anticipated by observing daily share price developments over a specified period.[5] There are two dominating methods to estimate abnormal returns; the cumulative abnormal return (CAR) method and buy and hold abnormal return (BHAR) method. Following in the footsteps of many other studies, the cumulative abnormal return (CAR) method is selected to estimate abnormal returns (Bradley

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[5] We use the Princeton (2008) guide in the execution of the event study in Stata.

et al., 1983; Croci, 2006; Dittmar et al., 2012; Jarrell and Poulsen, 1989; Lai et al., 2006; Liu, 2019; Singh and Montgomery, 1987; Travlos, 1987).

5.2.1 Abnormal Return

The two events of interest which determine the total revaluation effect on target wealth are the initial (1) M&A announcement and the subsequent (2) withdrawal announcement. Along the lines of Liu (2019), we are interested in the aggregate wealth effect of these two events. Thus, cumulative abnormal return is to be estimated separately for each event and thereafter be merged into a single variable. This variable will at a later stage serve as the dependent variable in the OLS regression, similar to how Malmendier et al. (2016) executed their study although they calculated the total effect in a different manner. The first step is to calculate abnormal returns. For each company i with the event date of t the abnormal return equals:

$$Abnormal\ Return_{i,t} = R_{i,t} - E(R_{i,t})$$

where $R_{i,t}$ corresponds to the raw (actual) return while the normal (expected) return is denoted as $E(R_{i,t})$. Models through which normal performance can be measured are many (Bruner, 2002; MacKinlay, 1997). Broadly speaking, they are either classified as economic or statistical models. In line with the thoughts of Campbell et al. (1997), the benefits of using an economic model over a statistical model are scarce. In light of the argument that there are few advantages of using economic models and taking into account Liu's (2019) approach to estimate normal performance, we employ the market model in the measurement of normal (expected) returns. Thus, for any asset i, the normal performance in the market model equation is expressed as follows:

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t}$$

$$E(\varepsilon_{i,t}) \qquad\qquad var(\varepsilon_{i,t}) = \sigma_\varepsilon^2$$

where $R_{i,t}$ is the return at the occasion t for asset i, $R_{m,t}$ is the market portfolio, and $\varepsilon_{i,t}$ is the disturbance term with a mean equal to zero. The parameters of the model are α_i and β_i,

where the former represents the regression constant (intercept) and the latter is the beta coefficient of asset *i*. In order to measure the parameters in the market model, one can either use a stock index such as the CRSP value-weighted index or match the sample with comparable control firms (Barber and Lyon, 1997). The use of a reference portfolio is a popular choice in short-term event studies among scholars (Campbell et al., 1997; Davidson et al., 1989; Liu, 2019). We use daily MSCI Europe Index returns to calculate abnormal returns.[6] The index was launched in 1986 and tracks the performance of 437 mid and large-cap stocks in 15 developed markets across Europe (MSCI, 2020). Barber and Lyon's (1997) suggestion of using control firms is a complicated task given the nature of our sample. While it is possible to identify comparable control firms based on a predefined set of criteria, we struggle to find a sufficient amount of control firms with available stock price data. Resultantly, we stick to the application of a reference portfolio to estimate parameters in the market model.

5.2.2 Cumulative Abnormal Return

If the assumption that markets efficiently incorporate information in share prices holds true, ideally a single-day event window would be sufficient to capture the sought-after event-effect. It might, however, be risky to use such a narrow event window since there is the risk that information reaches the market prior to the official announcement of the event. To account for this, we use event windows where several days are incorporated. In line with Liu's (2019) study, we use a three-day event window [-1, 1] followed by a five-day event window [-2, 2] for both events. These rather short event windows satisfy the desire of potentially observing a short-term revaluation phenomenon.

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[6] Countries included in the MSCI Europe Index: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and UK (MSCI, 2020).

Figure 1: Estimation windows

Estimation window(s)

(1) M&A CARs: [-150, -30]
(2) Withdrawal CARs: [-222, -102]

30 days   67 days on average

The upper points of both estimation windows are separated with the average amount of days between the M&A announcements and the withdrawal announcements plus an additional five days.

(1) M&A event   (2) Withdrawal event

Liu (2019) further employed the following estimation windows [-280, -30], [-365, -115] for the computation of announcement CARs and cancellation CARs, respectively. To prevent confounding effects, the upper point of both estimation windows was separated with the average amount of days between M&A announcements and cancellation announcements for the firms in the sample. As visualised in Figure 1, we follow a similar methodology in the construction of estimation windows. For the initial (1) M&A event CARs, the lower point of the estimation window begins 150 days prior to the M&A announcement and the upper point ends 30 days prior to the M&A announcement [-150, -30]. For the (2) withdrawal event CARs, the lower point of the estimation window begins 222 days prior to the withdrawal announcement and the upper point ends 102 days prior to the withdrawal announcement [-222, -102]. Partly inspired by Liu's (2019) methodology, we separate the upper points of both estimation windows with the average amount of days (67 days) between the M&A announcements and withdrawal announcements plus another five days (72 days in total) to escape confounding. In addition, each estimation window lasts for 120 days in line with MacKinlay's (1997) suggestion. It is of great importance that there is a clear separation between the estimation windows and the event windows over which the cumulative abnormal

return for both events is to be measured. If that is not the case, the estimation window might skew the normal performance in the parameter estimates of the market model (MacKinlay, 1997).

When the abnormal returns have been estimated for each firm in the sample they have to be aggregated over a specified event window (MacKinlay, 1997). The cumulative abnormal return (CAR) method is employed to achieve this. The CAR method aggregates abnormal returns through the following equation:

$$CAR_i(t_1, t_2) = \sum_{t=t_1}^{t_2} Abnormal\ Return_{i,t}$$

where the abnormal return is denoted as $R_{i,t} - E(R_{i,t})$. This is the cumulative abnormal return for the single firm i over the period $[t_1, t_2]$. As previously highlighted, since we are interested in the net revaluation effect, cumulative abnormal return is calculated for both the initial (1) M&A announcement and the subsequent (2) withdrawal announcement. Further, since we are interested in the average effect across the whole sample (H_0^a), we compute the average cumulative abnormal return for both events and compare the output to determine the net impact, i.e. the total revaluation effect on average. Finally, in order to establish the statistical significance of our findings, we conduct a parametric T-test. The parametric test investigates whether the mean cumulative abnormal return is statistically different from zero (Barber and Lyon, 1997). The parametric T-test is accomplished through the following formula:

$$t_{CAR} = \frac{\overline{CAR_{i,t}}}{(\sigma(CAR_{i,t})/\sqrt{n})}$$

where $\overline{CAR_{i,t}}$ is the sample average cumulative abnormal return and $\sigma(CAR_{i,t})$ is the cross-sectional sample standard deviation for a sample of n companies (Barber and Lyon, 1997). According to Barber and Lyon (1997), the test statistics obtained from the parametric test should follow a T-distribution under the assumed null hypothesis, given the assumption that the sample is randomly obtained from a normally distributed set of data.

5.2.3 Alternative Methods

An alternative to the CAR method is the BHAR method. The essential difference between the methods is that BHAR uses a geometric sum while CAR uses an arithmetic sum. As highlighted by Fama (1998), both methods are subjected to a bad-model problem, although perceived as more severe in the BHAR approach and long-term measurements. In the case of CAR, the root cause of the problem lies in the fact that the standard error of the measure grows with $N^{1/2}$ while the mean of the measure increases in accordance with N (Fama, 1998). However, this is less of a concern for this short-term study as the magnitude of the bad-model problem increases with length of the event window over which cumulative abnormal return is measured.

The measurement of normal performance can be accomplished with both statistical and economic models (Barber and Lyon, 1997; Campbell et al., 1997; MacKinlay, 1997). While economic models show a tendency of constraining the cross-section of expected returns, the market model generates firm-unique estimates of expected return (Fama, 1998). Thus, the application of the market model in estimating normal performance further mitigates the risk of encountering bad-model problems. Besides the one-factor market model, other statistical models include multifactor models and the market-adjusted-return model. According to MacKinlay (1997), the benefit of employing a multifactor model ahead of the market model is that multifactor models allow for the inclusion of additional industry indexes. Further, the benefit of using the market-adjusted-return model increases with poor data availability as it can obtain parameter estimates in the absence of an estimation window (Campbell et al., 1997). Common economic models, on the other hand, includes the capital asset pricing model (CAPM) and the arbitrage pricing theory (APT) model. The unrestricted market model is argued to be favourable to these economic models due to their restricting nature. The application of the CAPM has been questioned among scholars as it constrains the parameters of the market model in an exaggerated manner. Similarly, the APT model is argued to overcomplicate the execution of event studies (Campbell et al., 1997).

5.3 Regression

In order to test H_0^{b-e}, we estimate the following regression:

$$Net\_CAR_i = \beta_0 + \beta_1 Domestic + \beta_2 Public + \beta_3 Cash + \beta_4 Industry\ relatedness + \sum_j \delta_j Controls_j + u_i$$

The dependent variables *Net_CAR_1 and Net_CAR_2* are the difference in cumulative abnormal return from the deal announcement and the cancellation announcement using the event windows of [-1, 1] and [-2, 2], respectively. A complete presentation of all variables, including control variables, can be found in *6.2 Regression Variables*. The net revaluation effect denoted as *Net_CAR* is regressed on four independent dummy variables which resembles method of payment, company status, cross-border versus domestic, and industry relatedness followed by the inclusion of control variables. A Jarque-Bera test and a skewness and kurtosis test are conducted on the residuals of the multiple regressions to scrutinize the assumption of normality (Jarque and Bera, 1987). Further, we examine correlation coefficients and measure the variance inflation factor (VIF) of our predictor variables to investigate potential multicollinearity (Wooldridge, 2012). A White test and Breusch-Pagan test concluded significant evidence for heteroskedasticity in the models, which is why the regressions were repeated using robust standard errors to avoid the violation of constant variance (Wooldridge, 2012). Although we acknowledge the potential existence of endogeneity bias, we do not make any statistical alterations to mitigate the risk of an eventual presence of endogenous explanatory variables in our models. Issues that could cause such endogeneity bias include omitted variables, simultaneity, or measurement errors (Wooldridge, 2012).

5.4 Quality Assessment

It is convenient to evaluate the degree of reliability, replicability, and validity in our study. Reliability, somewhat aligned with the concept of replicability, concerns the uncertainty of whether measures are stable over time, reliable, and consistent in repeated formats (Bryman and Bell, 2011). Replicability evaluates the degree to which a study is replicable. Thus, replicability stresses the importance of outlining methodological choices in detail, not only to

allow for replication but also to facilitate the assessment of how stable, reliable, or consistent a measure of a particular phenomenon is (Bryman and Bell, 2011). In general, validity relates to the integrity of a study's conclusions. In quantitative research, validity usually refers to the concern of measurement validity, i.e. the uncertainty of whether a measure actually measures a particular concept (Bryman and Bell, 2011). Validity can also be broken down in external and internal validity, where the former refers to the generalizable nature of the findings and the latter relates to the concern of causality. Below we briefly elaborate on how well our study behave in relation to the aforementioned criteria.

5.4.1 Reliability and Replicability

Ideally, the reliability of a measure can be scrutinized by adopting the test-retest method (Bryman and Bell, 2011, p. 158). This involves conducting retests on the same sample, over two different time periods, and analyze if any correlation appear between the obtained variables. However, given that multiple occurrences of deal terminations might be rare for single firms, and that economic circumstances might change and give rise to fluctuation in returns over different time periods, such an approach is especially problematic. In fact, cumulative abnormal return is very contingent on temporary differences and would presumably differ for a single firm if it was measured over two separate withdrawal events, which is why we disregard the use of this method. This problem is, however, not unique for this study as it affects all studies with the ambition of measuring wealth impacts of M&A events. Further, we emphasize replicability by demonstrating methodological steps in detail. Screening criteria and manual alterations of data observations are clearly illustrated to promote replicability. Methodological choices are further inspired by previous studies, making them justifiable and easy to understand.

5.4.2 Validity

In evaluating measurement validity, it is safe to conclude that cumulative abnormal return is a representative measure of monetary wealth effects on target shareholders, our stakeholders of interest. In turn, everything else held equal, we are confident that the measurement of cumulative abnormal return over the announcement and withdrawal event will allow us to observe revaluation effects. This approach is commonly used in previous literature, further

promoting the validity of our measure (Malmendier et al., 2016; Liu, 2019). The extensive time frame over which data is gathered favors external validity. In addition, we incorporate a systematic process when we collect data and control for country in the regression to make our results more representative and hopefully more generalizable. Finally, internal validity is considered by the inclusion of control variables in the regression.

6. Data

This section presents the systematic approach to data collection, the exclusion criteria, and a brief overview of characteristics related to the sample. Further, the regression variables are presented and explained.

6.1 Data Collection

Data has been collected from the M&A Database Zephyr by Bureau Van Dijk and merged with padded daily target share and index prices from Thomson Reuters Datastream.[7] As visualized in Table 1, this was done by screening the Zephyr database with seven criteria to capture deals labeled as withdrawn on the European market.

The first two steps identify all withdrawn bids in the category of traditional mergers and acquisitions. The third step screen for the percentage of initial and final acquisition stakes with ranges inspired by previous research (Liu, 2019; Malmendier et al., 2016). Specifically, deals where buyers seek to acquire at least 51% ownership with an initial toehold of 0% to 49% are of interest. In line with Officer (2003), a similar filter is enforced on the bid premium in the fourth step from which adhere to the suggestion of 0-200%. The fifth step excludes all unlisted (private) targets, resulting in only listed and delisted target firms with available stock price data.[8] The sixth and final step narrows the observations to Western European countries, as defined by the Zephyr database. Zephyr's definition of Western Europe includes the following countries; Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. The implementation of these six aforementioned exclusion criteria yields an initial sample of 441 observations.

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[7] Stock price padded when there is no trading.

[8] Delisted firms represent observations that were listed at the time of the transaction and later became delisted.

Table 1: Sample screening [9]

Step	Zephyr	Screening Criteria	Number of Observations
1.	Deal Type	Acquisition, Merger	746 355
2.	Current Deal Status	Withdrawn	4 632
3.	Percentage of stake	Percentage of initial stake (min: 0 % max: 49 %); Percentage of final stake (min: 51 % max: 100 %)	3 669
4.	Bid premium - Announced date	Min=0 % Max=200 %	2 192
5.	Listed/Unlisted/Delisted companies	Listed Target, Delisted Target	1 995
6.	World regions	Western Europe (Acquiror AND Target)	441

	Initial Sample		*441*

Step	Conditions		Number of Observations
7.	*Loss - Multiple Bids*		299
8.	*Loss - Share Dividend*		2
9.	*Loss - No Withdraw Date*		10
10.	*Loss - Do Data in Datastream*		11
11.	*Loss - No Method of Payment*		4
12.	*Loss - Other (defence mechanisms etc)*		8
	Total Losses		334

	Main Sample		**107**

The observations from the initial sample were subsequently reviewed individually to ensure that all represented a traditional terminated bid rather than being subject to any other corporate event. As such, one can minimize the external disturbance on the announcement and withdrawal effect (Malmendier et al., 2016). Reviewing each deal individually, we learned that a large portion of the observations in the initial sample was defined as "withdrawn" in cases of bid contests and/or increased bids. Since previous research has shown that rival bids have a tendency to inflate the revaluation effect, withdrawal events characterized by such instances were manually removed (Croci, 2006). Following this practice, 299 observations from the initial sample were excluded. Further loss was due to lack of data and concurrent dividend distributions which, combined with the other exclusions, indicate a total loss of 334. Resultantly, subtracting the total losses from the initial sample

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[9] The initial sample from Zephyr (411) represents the original extracted observations from which further exclusions had to be made.

yields the main sample of 107 observations between 1997 and 2019. A complete description of all events is found in Appendix 1.

A description of all events distributed by year and country is illustrated in Table 2. Here it can be seen that the number of terminated bids in the sample fluctuates throughout time, especially around the dot-com bubble in the 2000s while a modest increase can be seen during the financial crisis in 2007-2009. Following the financial crisis is a period of low withdrawals of which only comprise one termination per year during 2010 and 2011. When considering *Panel B,* the country distribution, it is evident that the United Kingdom represents a substantial portion of the total sample amounting to 38.32%, followed by the second most observed country, Sweden, of which constitute 16.82% of the sample. Contrastingly, it can be seen that Belgium and Finland only represent one observation each.

Table 2: Sample distributions

Panel A. Trends in terminated M&As				*Panel B. Country distribution*		
Year	**Observations**	**% of sample**		**Country**	**Observations**	**% of sample**
1997	3	2.80%		Belgium	1	0.93%
1998	2	1.87%		Denmark	3	2.80%
1999	2	1.87%		Finland	1	0.93%
2000	11	10.28%		France	3	2.80%
2001	9	8.41%		Germany	10	9.35%
2002	4	3.74%		United Kingdom	41	38.32%
2003	9	8.41%		Ireland	2	1.87%
2004	4	3.74%		Italy	5	4.67%
2005	5	4.67%		Netherlands	6	5.61%
2006	7	6.54%		Norway	9	8.41%
2007	5	4.67%		Portugal	4	3.74%
2008	5	4.67%		Spain	2	1.87%
2009	7	6.54%		Sweden	18	16.82%
2010	1	0.93%		Switzerland	2	1.87%
2011	1	0.93%		**Total**	**107**	**100.00%**
2012	5	4.67%				
2013	2	1.87%				
2014	6	5.61%				
2015	2	1.87%				
2016	6	5.61%				
2017	3	2.80%				
2018	5	4.67%				
2019	3	2.80%				
Total	**107**	**100.00%**				

The main sample is then segregated into clusters to illustrate the distribution in the sub-sample categories. This distribution is shown in Table 3 and implies a relatively equal distribution for all but one sub-sample with less than eleven percent deviation from the 50th percentile. One discrepancy is, however, noticeable in the segregation of cross-border vs domestic deals since 85.1 % of the sub-sample represents domestic deals. As such, it should be noted that the disparity in data could distort the findings in an unfavorable manner and conclusions should therefore be made with caution.

Table 3: Sub-samples

Variable	Observations	% of Sample
Cross-border vs Domestic		
Cross-border	16	14.9%
Domestic	91	85.1%
Total	**107**	**100.0%**
Public vs Private		
Public	53	49.5%
Private	54	50.5%
Total	**107**	**100.0%**
Method of Payment		
Cash	65	60.7%
Non Cash Only	42	39.3%
Total	**107**	**100.0%**
Industry Relatedness		
Related	55	51.4%
Non-related	52	48.6%
Total	**107**	**100.0%**

6.2 Regression Variables

Here we present and define the variables that we intend to include in the OLS regression. The dependent variable *Net_CAR* is the difference in cumulative abnormal return from the deal announcement and cancellation announcement for the 107 firms in the sample. Moreover, we present four binary independent variables that resemble the following deal characteristics; method of payment, company status, cross-border versus domestic, and industry relatedness. It is reasonable to assume that variables capable of influencing the

market reaction at announcement should also be able to influence the market reaction at the withdrawal. Finally, we present the control variables which are believed to be related to the dependent variable.

6.2.1 Dependent Variable

To find out if the four deal characteristics cause any variation in the net revaluation effect on target firms, we need to incorporate the aggregate wealth effect from the announcement event and the withdrawal event in a regression. The obtained results from the event studies are translated into our dependent variables, hereafter labeled as *Net_CAR_1* and *Net_CAR_2*, which is the difference in cumulative abnormal return from the deal announcement and the cancellation announcement with the event windows of [-1, 1] and [-2, 2], respectively. Although Malmendier et al. (2016) use a different approach to calculate the net revaluation effect, they similarly include it as a dependent variable in their regression.

6.2.2 Independent Variables

The first dummy variable *Domestic* is determined with the country code suggestion by Harris and Ravenscraft (1991) by comparing the country codes of the acquiring and target firms in the sample. An observation will consequently receive the value one for the same country and zero otherwise.

The dummy variable *Public* is determined based on the unlisted or listed status of the acquirer. This variable is equal to one if the acquirer in the deal is labeled as public and zero if it is private.

The *Cash* dummy variable captures the method of payment of each deal by classifying all observations with either 100% cash or not (Betton et al., 2014). A deal receives the value one if it was expected to be financed with cash only or zero if it was stock-only or mixed.

The last dummy variable *Industry relatedness* is determined by comparing the two first digits in the target and acquirer four-digit SIC code gathered from the Zephyr database (Liu, 2019; Davidson and Cheng, 1997). An observation will consequently receive the value one if the

first two digits in the target and acquirer SIC code matches (Related) while zero is assigned if they mismatch (Unrelated).

6.2.3 Control Variables

We include six control variables in the regression. The inclusion of these variables is mainly motivated by their application in past studies which, similar to our study, investigates determinants of M&A performance. Ultimately, our intuition suggests that they may be related to some variation in the dependent variable *Net_CAR*.

The first control variable is denoted as *Target Size*. This variable refers to the logarithm of the target firm market capitalization (in millions of Euro) one month prior to the acquisition announcement (Malmendier et al., 2016). The *Hostile* dummy variable indicates if the bid was hostile or friendly based on a set of criteria. The variable hence assumes a value of one if it was perceived as hostile and zero if it was friendly. Multiple studies point out that deal attitude has a noteworthy impact on M&A performance (Bargeron et al., 2008; Croci, 2006; Dittmar et al., 2012; Liu, 2019; Loughran and Vijh, 1997; Malmendier et al., 2016). We contemplated the following criteria in determining the hostile or friendly attitude of each deal in the final sample:

Hostile if any of the following is true:

- The transaction was announced hostile by the target
- Target management advised against the acquisition
- Transaction period lapsed due to insufficient shareholder approval
- The transaction had not been discussed prior to the announcement
- Transactions premium was deemed to low by the target. (No subsequent bids)

Friendly if any of the following is true:

- The transaction was announced tender/friendly by the target
- Target was up for sale
- The transaction was considered a merger
- The transaction had been discussed prior to the announcement (management recommendation)

Following many other studies, we also include the variable *Premium* to control for the size of the bid premium in each observation (Malmendier et al., 2016; Roll, 1986). Further, we

include the dummy variable *Toehold* as acquirer ownership in the target firm prior to the announcement of the bid is reported to have a noteworthy effect on target revaluation after a failed M&A attempt (Liu, 2019). The variable assumes a value of one in the presence of a toehold and zero in the absence of a toehold. As initially reported by Betton et al. (2009), in the absence of a toehold target share prices have a tendency to revert to pre-offer levels after deal cancellations. Inspired by Malmendier et al. (2016) we also include a *Days* variable to control for the number of calendar days that has lapsed between the initial deal announcement and subsequent cancellation announcement. Finally, we incorporate a dummy variable called *United Kingdom* which assumes a value of one if the target firm is located in the United Kingdom and zero if otherwise. As demonstrated in Table 2, a majority of observations are located in the United Kingdom which encourages us to control for its effect.

Table 4: Summary statistics

Variable	Obs.	Mean	Median	Std. Dev	Min.	Max.
CAR_Ann_1	107	0.149	0.102	0.170	-0.069	1.177
CAR_Ann_2	107	0.157	0.116	0.176	-0.113	1.228
CAR_Withdraw_1	107	-0.044	-0.018	0.099	-0.438	0.220
CAR_Withdraw_2	107	-0.050	-0.024	0.108	-0.411	0.209
Net_CAR_1	107	0.105	0.083	0.186	-0.299	1.179
Net_CAR_2	107	0.107	0.091	0.197	-0.304	1.220
Domestic	107	0.850	1	0.358	0	1
Public	107	0.495	0	0.502	0	1
Cash (100%)	107	0.607	1	0.491	0	1
Industry relatedness	107	0.514	1	0.502	0	1
Log (Target Size)	107	5.148	4.823	2.162	0.916	10.419
Hostile	107	0.570	1	0.497	0	1
Premium	107	0.225	0.176	0.222	0	1.222
Toehold	107	0.159	0	0.367	0	1
Days	107	67.131	53	58.309	6	355
United Kingdom	107	0.383	0	0.488	0	1

7. Empirical Results and Analysis

This section presents the empirical results followed by an analysis for both the event study and the regression. The findings from each method are first presented and then analyzed using previous literature and the aforementioned theories in the theoretical framework.

7.1 Event Study Results

The results from the event study are presented in Table 5 and illustrate the mean announcement CAR (%), mean withdrawal CAR (%), and the net effect (%) over each event window of [-1, 1] and [-2, 2] accompanied with their respective t-statistics and significance levels. From this table, it is evident that positive target revaluation effects do exist, and they are even highly statistically significant at the 0.1% confidence level. There is also an indication that the average effect from both events tends to rise with the duration of the event window, although more evident in the comparison of deal announcement CARs, which ultimately generate a higher net revaluation effect. As such, it can be seen that the net effect for target firms is 10.7% in the five-day event window [-2, 2] compared to 10.5% in the three-day event window [-1, 1].

Table 5: Event study results

	Mean announcement CAR (%)	Mean withdrawal CAR (%)	Net effect (%)
Event Window [-1, 1]			
Target firm CAR	0.149 ***	− 0.044 ***	0.105 ***
t-statistics	9.03	− 4.63	5.84
Event Window [-2, 2]			
Target firm CAR	0.157 ***	− 0.050 ***	0.107 ***
t-statistics	9.24	− 4.82	5.63

*Significance level * p < .05; ** p < .01; *** p < .001*

7.1.1 Analysis of Abnormal Return

The observed positive revaluation effect of 10.5% to 10.7% is best explained by the information hypothesis in the theoretical framework, which insinuates the market's long-lasting appreciation of new information that is communicated through the initial bid (Bradley et al., 1983). This theory predicts that, following the unveiling of new information in the initial bid, the market is urged to permanently revalue a formerly undervalued target firm regardless of the completion of the deal. Other theoretical explanations to our findings could be that the target management is prompted to pursue a better operating strategy following the unveiling of new information or that the positive net effect might be caused by target shareholders anticipation of future lucrative offers (Bradley et al., 1983; Dodd and Ruback, 1977; Liu, 2019).

The alternate synergy hypothesis is less capable of explaining our findings as it holds that the initial target wealth gain resulting from the synergy expressed in the premium (14.9% - 15.7%) is predicted to be offset by an equally large wealth reduction upon the withdrawal of the deal (Bradley et al., 1983). Neither is Croci's (2006) new information hypothesis (NIH), which explains a negative revaluation effect with the release of information following the initial bid, applicable in explaining why a positive revaluation was observed. Croci (2006) highlights that a common explanation for a positive market reaction is that the withdrawal event is due to a rival bid. That is, however, not the reason in this case as withdrawal events triggered by rival bids were manually reviewed and removed in the derivation of the final sample.

Given the statistically significant results presented in Table 5, we can therefore reject the null hypothesis $H_0{}^a$ and accept the alternative hypothesis $H_1{}^a$ that there is a significant revaluation effect on target firms following a withdrawn bid. The findings of this study hence support the empirical evidence from previous research focusing on the US and the UK, with the added verification that net revaluations do exist even in the European market.

7.2 Regression Results

As illustrated in Table 6, two regressions were conducted on each dependent variable derived from both event windows, resulting in a total of four regressions. In the second and fourth model, the dependent variables *Net_CAR_1* and *Net_CAR_2* were regressed on four independent dummy variables resembling our selected deal characteristics of method of payment, company status, cross-border versus domestic, and industry relatedness followed by the inclusion of six control variables.

Table 6: Regression results

Dependent variable:	Net_CAR_1	Net_CAR_1	Net_CAR_2	Net_CAR_2
Variables	**(1)**	**(2)**	**(3)**	**(4)**
Domestic	-0.0119 (0.0473)	-0.0336 (0.0478)	0.0113 (0.0518)	-0.0086 (0.0530)
Public	-0.0350 (0.0485)	-0.0749 (0.0519)	-0.0202 (0.0466)	-0.0546 (0.0504)
Cash (100%)	0.0171 (0.0488)	0.0185 (0.0524)	0.0251 (0.0482)	0.0307 (0.0519)
Industry relatedness	0.0063 (0.0400)	0.0218 (0.0368)	0.0059 (0.0424)	0.0188 (0.0397)
Log (Target Size)		-0.0124 (0.0079)		-0.0088 (0.0086)
Hostile		-0.0054 (0.0315)		0.0046 (0.0345)
Premium		0.4209 ** (0.1517)		0.4124 ** (0.1524)
Toehold		-0.0112 (0.0378)		-0.0067 (0.0474)
Days		0.0001 (0.0002)		0.0001 (0.0003)
United Kingdom		0.0481 (0.0328)		0.0773 * (0.0345)
N	107	107	107	107
Constant	0.1185 (0.0818)	0.0985 (0.1204)	0.0892 (0.0821)	0.0286 (0.1207)
R2	0.0169	0.3483	0.0114	0.3124

*Robust standard errors in parentheses. * p < .05; ** p < .01; *** p < .001*

Although a vast majority of results consistently fail to be statistically different from zero even at the 5% threshold, the beta coefficients give a noteworthy indication of the difference in means between the two categories in each independent dummy variable. On average, cash deals seem to outperform stock-only or mixed deals with approximately 1.8 - 3.1 percentage points higher net CAR. Moreover, on average, deals where the acquirer is public appear to produce a 5.5 - 7.5 percentage points lower revaluation of the target than deals where the status of the acquirer is private. On average, deals characterized by related industries seem to slightly outperform unrelated deals with about 1.9 - 2.2 percentage points in net CAR while the difference in means between domestic and cross-border deals appear to be higher for the latter with approximately 0.9 - 3.4 percentage points. Yet important, in light of the lacking statistical significance and rather weak R-squared values across all regression models, the conclusions that can be drawn from these aforementioned beta coefficients are limited.

The results from the second and fourth regression further indicate that the size of the offer premium (%) has a significant impact on the net revaluation effect on target firms, statistically significant at the 1% level. Across both models, for every one percentage point increase in offer premium, net CAR appears to increase with about 0.4 percentage points. Further, deals with the target firm residing in the United Kingdom seem to have a notable influence on the revaluation of target firms observed over the five-day event window [-2, 2], statistically significant at the 5% level. On average, deals where the target firm is British appear to produce a 7.7 percentage point higher revaluation of the target firm compared to deals with non-British target firms.

7.2.1 Regression Diagnostics

As displayed in Appendix 3, we check for multicollinearity between the predictor variables in the multiple regressions by examining their respective correlation coefficients in a correlation matrix and by measuring the variance inflation factor (VIF). We dismiss that our predictor variables are highly linearly correlated as no correlation coefficient in the matrix assumes a value greater than 0.8. Further, since the variance inflation factor for each variable is deemed extremely low, we conclude further evidence that the magnified extent of correlation between our variables is tolerable. Further, both the Jarque-Bera test and the skewness and kurtosis

test that was conducted on the residuals of the multiple regressions indicated that our models do not violate the assumption of normality (Jarque and Bera, 1987). In other words, we could not reject their respective null hypothesis of normality (Wooldridge, 2012).

7.2.2 Analysis

To begin with, the findings suggest a statistically significant relationship between offer premiums and net revaluation effects on target firms where a one percentage point increase in offer premium appears to result in a 0.4 percentage points increase in net cumulative abnormal return. Keeping this in mind while considering Roll's (1986) suggestion that overpayment of target firm stocks could be driven by acquiring managers' tendency of hubris, there could be a positive relationship between revaluations of target firm wealth and the degree of hubris in acquiring managers. Domestic versus cross-border deals, public versus private deals, cash versus stock-only or mixed deals, and related industry versus unrelated industry deals, all failed to be statistically significant even at the 5% level. In other words, the difference in means between the two categories in each of these explanatory variables can not be regarded as statistically significant. $H_0{}^{b-e}$ can therefore not be rejected. However, statistical significance aside, in light of what theory predicts and what previous literature has found regarding these characteristics' relationships with offer premiums (%), these results can provide interesting insights. Given the FDI theory's prediction that target firms involved in cross-border deals should receive higher premiums, we should have observed a higher revaluation of target wealth for cross-border deals compared to domestic deals if our previous finding of a positive relationship between offer premiums and net CARs holds true (Harris and Ravenscraft, 1991). This prediction is in line with our results, although acknowledging that hardly anything can be concluded due to the lack of statistical significance. In addition, cross-border deals were considerably underrepresented (14.9%) compared to domestic deals (85.1%).

Given the notion that differing operational strategies should result in public firms paying larger premiums relative to private firms, the average net CAR should have been higher for deals with public acquirers (Bargeron et al., 2008; Dittmar et al., 2012). This is contradictory to our findings but still absent of statistical significance. The suggestion that cash-only deals

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should involve higher premiums than stock-only or mixed deals (Franks et al., 1988; Liu, 2019; Wansley et al., 1987) and that related deals generally should imply higher premiums relative to unrelated deals (Singh and Montgomery, 1987) is consistent with our results albeit lacking statistical significance. The findings further suggest that deals with British target firms appear to cause a statistically significant higher target revaluation compared to deals with non-British target firms using the longer event window of [-2, 2]. Given the fact that about 38% of the target firms in our sample are British, this finding might imply that the event study findings concerning the net revaluation effect following deal cancellations might be a slightly exaggerated representation of Europe as a whole.

8. Conclusion

This section provides a summary of the study followed by a discussion concerning the main findings and contributions to research. Suggestions for further research are also addressed.

8.1 Summary and Discussion

The main ambition of this study was to explore the revaluation effect on target companies following a withdrawn bid. Besides, the study had a supplementary purpose of investigating whether different deal characteristics including method of payment, company status, cross-border versus domestic, and industry relatedness have any significant ability to produce variation in this sought-after revaluation effect. The study incorporated a sample of 107 withdrawn deals on the European market between the years of 1997 and 2019. Data pertaining to the withdrawn deals was retrieved from the M&A Database Zephyr by Bureau Van Dijk and merged with padded daily target share and index prices from Thomson Reuters Datastream. An event study approach was applied to capture and measure the net cumulative abnormal returns (CAR) from the deal announcements and withdrawal announcements. Using the short-term event windows of [-1, 1] and [-2, 2], the net revaluation effects obtained from the event study was arranged into dependent variables and regressed on four independent dummy variables resembling method of payment, company status, cross-border versus domestic, and industry relatedness followed by the inclusion of six control variables. Although we differentiate by emphasizing a European perspective, the statistically significant findings of this study are predominantly aligned with those highlighted in previous research.

The main finding from this study conveys that there is a statistically significant positive short-term revaluation effect on target shareholder wealth following bid withdrawals in Europe. We also find that the average effect from both events tends to rise with the duration of the event window, which ultimately creates a higher net revaluation. Moreover, the offer premium showed to have a statistically significant impact on target revaluation. Also, deals where the target firm resides in the United Kingdom appeared to have a significant positive impact on the magnitude of the revaluation effect in the longer event window. However, the

difference in average net cumulative abnormal return (CAR) between the categories of method of payment, company status, cross-border versus domestic, and industry relatedness is shown to lack sufficient statistical significance. As a consequence, the conclusions that can be drawn from the beta coefficients of these explanatory variables are very limited. The fact that the UK is over-represented in our sample of withdrawn bids does not come as a surprise given its degree of M&A activity relative to other countries in Europe. Also, we believe that there is weak support to believe that the distribution of countries in our sample is due to regulatory differences or other institutional features between the countries since the final sample partly was derived through manual alteration.

The main finding of a short-term net gain following a failed M&A attempt is in line with the findings of Dodd and Ruback (1977), Dodd (1980), Davidsson et al. (1989), Bradley (1980), Bradley et al. (1983), Malmendier et al. (2016), and Liu (2019), all of which find empirical evidence on positive target revaluations after cancelled deals in the US. This positive revaluation effect is predicted by Bradley et al. (1983) information hypothesis, which underscores the market's tendency to revalue a formerly undervalued target company regardless of deal-completion. This ultimately answers the first research question. The significant finding of a positive relationship between the size of the deal premium and net CAR could potentially suggest that the degree of hubris in acquiring managers has a noteworthy impact on target revaluations (Roll, 1986). Despite all results relating to our deal characteristics failed to be statistically different from zero even at the 5% threshold, the beta coefficients for cross-border versus domestic, method of payment, and industry relatedness all indicated an alignment with the predictions in previous literature (Franks et al., 1988; Harris and Ravenscraft, 1991; Liu, 2019; Singh and Montgomery, 1987; Wansley et al., 1987). Yet, the second research question must be answered with a no, as there is weak support across the results from all four explanatory variables to conclude any significant impact at all.

Reviewing previous literature, a majority of studies dedicate attention to both acquiring- and target firm wealth effects when M&A bids are announced while relatively few recognize the net wealth effects on target shareholders in the event of bid withdrawals. Also, while the investigated deal characteristics are common determinants of M&A performance once deals

are announced, their implications are far less researched in the context of bid terminations. This is especially true for company status, cross-border versus domestic, and industry relatedness. The phenomenon of interest was also decided to be investigated in the European market to contrast the overwhelming amount of studies that focus on the US and the UK. All in all, this study contributes to the existing literature in three ways; by focusing on target revaluation rather than post-bid M&A performance solely, bringing traditional determinants of M&A performance into a relatively new context, and investigating revaluation effects from a European perspective. To conclude, the results from this thesis consequently resemble the findings from previous literature with the added verification that target revaluation effects do exist even on the European market during 1997-2019. Despite failing to find significant evidence for determinants of M&A revaluations, the observed positive revaluation effect has a noteworthy practical implication for market participants who actively track revaluation effects across European target firms following failed M&A attempts.

8.2 Future Research

Due to the rather unexplored nature of target revaluation effects on markets other than the European and the US market, it could be intriguing for future research to look at other less conventional markets, potentially submarkets within Asia or the Australian market, and compare if the effects differentiate. Further, in light of our insignificant results concerning determinants of M&A revaluations, it would be advantageous to incorporate a larger sample and conduct a resembling study but with the inclusion of additional explanatory- and control variables to better explain the variation in the net cumulative abnormal return. Ultimately, a more thorough understanding of the interaction between deal characteristics and target revaluation effects constitutes an important research objective for future research.

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10. Appendix

Appendix 1: Firm sample

Target name	Announced Date	Withdrawn Date	Domestic = 1 Cross-Border 0	Public = 1 Private = 0	Cash Only = 1 Non Cash Only = 0	Related = 1 Unrelated = 0
Abbey National plc	2001-01-31	2001-07-10	1	1	0	1
Adolfo Dominguez SA	2001-03-14	2001-04-18	1	1	0	1
Aixtron SE	2016-07-29	2016-12-08	1	0	1	0
Aker Maritime ASA	2000-08-07	2000-10-03	1	1	0	0
Anglo Siberian Oil Company plc	2001-06-15	2001-07-24	1	1	0	1
AttentiV Systems Group plc	2005-04-28	2005-05-13	1	1	0	1
Banca Popolare dell'Emilia Romagna SC	2007-05-20	2007-06-28	1	1	0	1
Baumgartner Papiers Holding SA	2001-12-19	2002-02-20	1	0	1	0
Belships ASA	2018-06-13	2018-07-13	1	0	1	1
Beta Systems Software AG	2002-03-20	2002-04-26	1	1	0	0
Blue Circle Industries plc	2000-02-01	2000-05-03	0	1	1	1
Border Television plc	2000-03-15	2000-05-12	1	1	0	1
British Polythene Industries plc	2000-12-04	2000-12-18	1	1	1	0
CAD IT SpA	2018-02-19	2018-07-20	1	0	1	0
Cassell plc	1998-10-12	1998-11-05	1	0	1	1
Centerpulse AG	2003-03-20	2003-08-28	1	0	0	1
CIMPOR Cimentos de Portugal SGPS SA	2009-12-18	2010-02-12	0	0	1	1
Cision AB	2014-04-16	2014-05-16	1	0	1	1
Clere AG	2017-05-24	2017-07-04	1	0	1	0
Cove Energy plc	2012-04-24	2012-07-26	0	0	1	1
Crédito Predial Português SA	1999-07-19	1999-11-18	1	1	1	0
Danske Andelskassers Bank A/S	2019-03-20	2019-03-26	1	1	0	1
Delyn Group plc	1997-08-04	1997-10-13	1	1	0	0
Diligentia AB	2000-01-18	2000-03-27	1	1	0	1
Earthport plc	2019-01-25	2019-03-08	1	0	1	1

Econergy International plc	2008-05-15	2008-08-18	1	1	0	1
EcoSecurities Group plc	2009-09-01	2009-10-12	0	0	1	0
EDP Energias de Portugal SA	2018-05-11	2019-05-01	0	0	1	1
Fastighets Balder AB	2000-02-09	2000-02-29	1	1	1	1
FIH Group plc	2017-02-10	2017-04-06	1	0	1	1
Fonciere de Paris SIIC SA	2016-05-20	2016-09-20	1	1	0	1
Gascogne SA	2003-07-22	2004-01-02	1	1	0	0
GfK AG	2008-06-03	2008-07-09	0	1	0	1
Goldshield Group plc	2009-10-02	2009-10-27	1	0	1	0
Gronlandsbanken A/S	2004-05-19	2004-08-13	1	1	0	1
Hackman Oyj Abp	2003-11-13	2003-12-02	1	0	1	0
Haslemere NV	2002-03-20	2002-03-28	1	0	1	0
Hedson Technologies International AB	2014-02-18	2014-04-01	1	0	1	0
Highbury House Communications plc	2005-02-14	2005-04-15	1	1	0	0
Highland Timber plc	2007-09-11	2007-09-21	1	0	1	1
Hollandsche Beton Groep NV	2000-02-28	2000-05-15	1	1	0	0
Holmes Place plc	2002-09-04	2002-10-17	1	1	1	1
Hyder Consulting plc	2014-08-08	2014-09-12	1	0	1	1
Iberdrola SA	2000-10-17	2001-02-05	1	1	0	1
IBS AG	2007-04-23	2007-06-21	1	1	1	0
Imprint plc	2007-12-20	2008-03-07	1	1	0	1
Intu Properties plc	2017-12-06	2018-04-25	1	1	0	1
Invista Real Estate Investment Plc	2012-05-23	2012-07-26	1	0	1	1
JKX Oil & Gas plc	1997-07-23	1997-09-26	1	0	0	1
Johnston Group plc	2004-08-24	2004-10-20	1	1	1	0
Legrand SA (old)	2001-01-16	2001-05-04	1	1	0	0
Lionheart plc	2003-01-08	2003-03-19	1	1	0	0
London Clubs International plc	2006-08-31	2006-10-23	1	0	1	1
London Stock Exchange Group plc	2006-11-20	2007-02-12	1	0	1	0
Manifattura Lane Gaetano M&F SPA	2002-09-07	2002-10-30	1	1	0	0
Marks & Spencer Group plc	2004-07-07	2004-07-14	1	0	0	0
Matteus AB	2001-06-06	2001-06-13	1	0	1	1
May Gurney Integrated Services plc	2013-03-26	2013-05-30	1	1	0	0

MediCult A/S	2009-02-23	2009-05-18	0	1	1		0
Metro AG	2019-07-10	2019-08-09	1	0	1	57	0
Mirror Group plc	1999-01-31	1999-08-02	1	0	1		1
Netwise AB	2001-10-25	2001-11-07	1	1	0		1
New Opportunities Investment Trust plc	2003-06-24	2003-09-03	1	1	0		0
Norman ASA	2004-02-02	2004-02-10	1	1	0		0
Norsk Vekst ASA	2003-11-12	2003-12-10	1	1	1		0
Note AB	2012-12-03	2013-01-25	1	1	1		0
NXP Semiconductors NV	2018-02-20	2018-07-25	1	0	1		1
Optovent AB	2003-07-15	2003-09-04	1	0	1		0
Oxford Glycosciences plc	2003-01-23	2003-04-11	1	1	0		1
Perrigo Company plc	2015-04-29	2015-11-13	0	1	0		1
Pilat Media Global plc	2009-03-19	2009-05-18	1	0	1		1
Plantation & General Investments plc	1997-02-19	1997-05-01	1	0	1		0
Platzer Fastigheter AB	2001-04-06	2001-06-14	1	1	0		1
Portugal Telecom SGPS SA	2014-11-09	2014-12-23	1	1	1		1
Premier Farnell plc	2016-06-14	2016-08-22	1	0	1		1
Prima Industrie SpA	2003-02-11	2003-04-15	1	0	1		0
Profdoc ASA	2008-04-21	2008-05-20	0	1	1		1
Q-Med AB	2008-11-03	2008-12-11	1	0	1		1
QXL Ricardo plc	2005-03-03	2005-04-07	0	0	1		0
Radstone Technology plc	2006-08-29	2006-10-06	1	0	1		0
Resco AB	2000-09-12	2000-10-17	0	1	0		1
Rhon-Klinikum AG	2012-05-18	2012-06-29	1	0	1		1
Roto Smeets Group NV	2010-09-08	2011-03-03	1	0	1		0
Samas-Groep NV	2000-12-04	2000-12-21	1	1	0		0
Scania AB	2006-10-12	2007-01-23	0	1	0		1
Shelton Petroleum AB	2014-03-21	2014-07-02	1	1	1		1
Sigma AB	2008-05-12	2008-06-12	1	0	1		0
Skanska Energi AB	2018-09-24	2018-10-16	1	0	1		0
SLM Solutions Group AG	2016-09-06	2016-10-26	1	0	1		0
Sorin SpA	2009-10-12	2010-04-21	1	0	1		0
Sprue Aegis plc	2013-04-29	2013-05-24	1	0	1		1

Storebrand ASA	2001-05-21	2001-10-01	0	1	0	1
Tangent Communications plc	2016-02-29	2016-03-22	1	0	1	0
Telindus Group SA/NV	2005-12-14	2006-01-05	0	1	1	0
Tempus Group plc	2001-07-19	2001-09-21	0	1	0	0
Tex Holdings plc	2014-05-29	2014-07-03	1	0	1	1
TLG plc	1998-09-04	1998-09-28	1	0	1	0
TNT Express NV	2012-03-19	2013-01-30	1	0	1	0
Tognum AG	2011-03-09	2011-05-16	1	0	1	0
TradeDoubler AB	2007-01-15	2007-03-15	1	0	1	0
Tribona AB	2015-09-18	2015-10-22	1	1	0	1
Trio AB	2005-04-20	2005-04-27	1	1	0	1
TTS Group ASA	2016-06-20	2016-08-12	0	0	1	0
Unison Forsikring ASA	2009-06-04	2009-06-22	1	0	1	1
Wilmington Group plc	2006-06-26	2006-08-21	1	1	0	0
Wilson ASA	2006-08-22	2006-08-31	1	0	1	1
Zapf Creation AG	2006-06-12	2006-08-04	1	0	1	0

Total   **107**

Appendix 2: Variable definitions

Variable	Definitions
CAR_Ann_1	Target firm CAR from the deal announcement using an event window of [-1, 1]
CAR_Ann_2	Target firm CAR from the deal announcement using an event window of [-2, 2]
CAR _Withdraw_1	Target firm CAR from the withdrawal announcement using an event window of [-1, 1]
CAR_Withdraw_2	Target firm CAR from the withdrawal announcement using an event window of [-2, 2]
Net_CAR_1	Difference in CAR from the deal ann. and withdrawal ann. using the event window of [-1, 1]
Net_CAR_2	Difference in CAR from the deal ann. and withdrawal ann. using the event window of [-2, 2]
Domestic	Dummy - 1 if the target and acquirer country code matches and 0 if they mismatch
Public	Dummy - 1 if the acquirer is labeled as public and 0 if the acquirer is labeled as private
Cash	Dummy - 1 if the deal was to be financed with cash only and 0 if it was stock-only or mixed
Industry relatedness	Dummy - 1 if the first 2 digits in the target and acquirer 4-digit SIC code matches and 0 otherwise
Log (Target Size)	The logarithm of target firm market capitalization (MEUR) on month prior to the deal ann.
Hostile	Dummy - 1 if the deal was perceived as hostile and 0 if it was friendly
Premium	Size of the bid premium (%)
Toehold	Dummy - 1 in the presence of a toehold and 0 in the absence of a toehold
Days	The amount of calendar days that has lapsed between the initial deal ann. and withdrawal ann.
United Kingdom	Dummy - 1 if the target firm is located in the United Kingdom and 0 if otherwise

Appendix 3: Multicollinearity test

Correlation Matrix

Variables	Domestic	Public	Cash	Ind. Relatedness	Log (Target Size)	Hostile	Premium	Toehold	Days	United Kingdom
Domestic	1.0000									
Public	-0.1088	1.0000								
Cash	0.0150	-0.6965	1.0000							
Ind. relatedness	-0.0931	0.1031	-0.1689	1.0000						
Log (Target Size)	-0.2330	-0.0262	-0.1141	0.1401	1.0000					
Hostile	-0.0465	0.0296	0.0752	-0.2778	-0.1262	1.0000				
Premium	-0.0204	0.2159	-0.1526	-0.0669	-0.2549	0.1173	1.0000			
Toehold	0.0389	-0.1749	0.2446	-0.0378	-0.1088	0.0676	-0.1643	1.0000		
Days	-0.1603	0.0177	-0.0486	0.0354	0.4665	-0.2007	-0.1203	0.1224	1.0000	
United Kingdom	0.1149	-0.0503	-0.0357	0.1125	-0.1587	0.0243	0.1223	-0.1848	-0.1025	1.0000

Variance Inflation Factor (VIF)

Variables:	Domestic	Public	Cash	Industry Relatedness	Log (Target Size)	Hostile	Premium	Toehold	Days	United Kingdom
VIF	1.14	2.11	2.15	1.17	1.54	1.18	1.19	1.21	1.40	1.13
1/VIF	0.880	0.475	0.464	0.852	0.648	0.851	0.841	0.827	0.713	0.886
Mean VIF	1.42									