ACQUIRER GAINS IN EUROPEAN ACQUISITIONS: PROFITABLE AT LAST?

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Abstract

In this thesis I follow up a recent mergers and acquisitions (M&A) study (Alexandridis et al., 2017) that documents findings which challenge mainstream M&A theory. The results of said study suggest that, in the last few years, acquiring firms actually gain value (in terms of stock prices) as a result of an acquisition. I expand this study about acquirer returns resulting from acquisitions by examining this phenomenon in a European setting. Therefore I examine whether these positive acquirer stock returns can be found in European acquisitions, and as well try to find the cause of this sudden change in acquisition performance. Firstly, I hypothesize that in my European firm sample there are positive significant acquirer stock/shareholder returns as a result of acquisition activities. I hypothesize secondly that, following the results and findings of this prior research, improved corporate governance structures have led to better decision-making and ultimately higher acquirer returns related to acquisitions. The results of the empirical analysis suggest that indeed European acquirers earn significant and abnormal stock returns resulting from an acquisition, measured over a multi-month timeframe. However, there seems to be no evidence that better corporate governance structures lead to significantly higher stock returns for acquiring firms.

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Chapter 1: Introduction

1.1 Introduction

Mainstream merger and acquisition (M&A) research, including the managerial discretion and the hubris hypotheses (Mueller & Sirower, 2003), tends to teach students and others with interest that in general acquiring firms in M&A deals tend to lose shareholder value. Conversely, it teaches that target firms tend to gain value upon the deal (e.g. DePamphilis, 2015; Custódio & Metzger, 2013; Mueller & Sirower, 2003; Becher et al., 2012). This especially applies to acquisitions of publicly traded firms (Alexandridis et al., 2017). However, this seemingly common knowledge of the loss of acquirer shareholder value in M&A deals may not hold anymore. Following a recent study by Alexandridis et al. (2017), this paper investigates whether acquiring parties involved in an M&A deal are indeed not losing value anymore, contrary to the common and modern belief.

Alexandridis et al. (2017) found quite surprisingly that since the financial crisis of 2008 acquiring firms do actually gain instead of lose from M&A deals, which implies support for neoclassical M&A theory. According to this theory, M&A deals tend to create synergies and generate value in terms of stock returns (Ahern & Weston, 2007). One cannot assume, however, that theories developed in the United States, and associated empirical evidence, apply universally to other institutional settings (Bruton et al., 2010) and other markets in general. One argument for this is that European (stock) markets operate under substantially different laws, rules and regulations, and exhibit considerably more varying ownership structures and market conditions compared to the United States (Faccio & Masulis, 2005). Therefore the intent of this study is to extend said research by involving firms that are located outside of the United States. More specifically, a European setting and a different time frame is applied in order to develop more generalizable knowledge regarding this apparent shift in M&A trend.

The ambiguities in prior M&A literature open up possibilities to further investigate the effects of M&A deals on acquirer gains. These ambiguities may indicate that M&As outcomes seem to change over time, which on the one hand makes M&A gains a difficult subject to put into theory. On the other hand, these changes create the need for updated and modernized theories. This is exactly the goal of this paper; to show whether neoclassical

M&A theory applies in present times, or that possible other M&A related theories, such as managerial discretion or overvaluation theories (Gugler et al., 2012) apply. Prior literature on M&A aimed to explain the variances in M&A trends by for example dividing the deals into so-called merger waves (e.g. Gugler et al., 2012; Moeller et al., 2004) with each wave having its own unique aspects. These merger waves could explain why the shifts in findings happen from time to time. Another reason for the latest shift, as Alexandridis et al. (2017) document and conclude, may be the most recent financial crisis. They argue that this financial crisis caused, amongst other things, a widespread difference in perspective with regard to corporate governance, accompanied by structural reforms in corporate activities. This ultimately resulted in better M&A deal decision making by executives and better returns for acquiring firms.

1.2 Relevance

Why is this apparent change in M&A trend crucial? If it turns out that target firms do not lose value anymore, it may be important for both theoretical and practical reasons.
Regarding theoretical relevance, this insight may cause a development in one of the structural and most reiterated (Alexandridis et al., 2017) principles of modern M&A literature. This implies that modern literature might have been telling an inaccurate story and that this requires rectification. This might open up a new door for more up-to-date theories and potential for further research.

Regarding practical relevance, findings can for example inform firms, so that these can adjust their behavior regarding potential M&A possibilities and threats. For example, firms may perform more M&A activity in general, because the returns are higher than previously thought. It is easier to persuade target firm executives into M&A deals when they know that neither firm suffers losses, but instead benefit from the deal. Board of directors and investors of the involved firms are also more positive due to the same reason, and are more easily persuaded into M&A deals. Because in general M&A activity will be more attractive, it may lead to more specialized and bigger firms. This may in turn lead to more gains and opportunities of e.g. economies of scale, economies of scope, extending capabilities of firms and enhance market power, profitability and globalization opportunities (Ahern & Weston, 2007; Alexandridis et al., 2010).

1.3 Research design

The research question is as follows. “To what extent do mergers and acquisitions create value for acquiring firms?” This question aims to contribute to two important topics in this field of research; namely to what extent M&A deals create acquirer value (if any), and what trigger could have caused the (apparent) change in acquirer return outcomes. This research question is answered through an analysis similar to Alexandridis et al. (2017). The analysis on acquirer gains is based on a dataset involving European acquiring firms and their respective deals. The time frame requires the deal to be completed during the years 2009 until 2017, which captures a significant part of the post-financial crisis period.

1.4 Thesis outline

The remainder of the paper is organized as follows. Chapter 2 discusses the relevant literature on M&A theories and the prior ambiguous findings in acquirer gains. In chapter 3 the sample selection process, the features of the dataset, and the methods of analysis are described.
The results of the research are discussed in chapter 4, and chapter 5 concludes this paper.

Chapter 2: Literature review

The topic of gains (and losses) resulting from M&A deals is a well-acknowledged one in scientific literature. Many studies have focused on the value creation or destruction of M&A processes before, during and after the deal, for both acquiring and target firms. However, multiple conflicting theories on M&A gains exist, and rely on different points of view. This chapter discusses some of the prior literature on M&A returns, in order to create a framework from which the hypotheses are derived.

2.1 Conflicting theories

The link between M&A activity and acquirer gains in prior literature is explained by a handful of theories and hypotheses. An oversight of these hypotheses is discussed in a relevant study by Mueller & Sirower (2003), which includes four of the most commonly applied theories on M&A returns. They include these theories as four separate hypotheses, being the market-for-corporate-control hypothesis (MCCH), the synergy hypothesis (SH), the managerial discretion hypothesis (MDH), and the hubris hypothesis (HH). Because these four hypotheses predict conflicting results, they are discussed in this paragraph in order to create an oversight and provide clarity with regard to the conflicts in M&A theory.

The market-for-corporate-control hypothesis (MCCH) predicts that the market operates efficiently, such that it eliminates managements that either pursue goals that conflicted with shareholder interests, or were simply incompetent. This hypothesis relies on the assumption that there is a strong correlation between the performance of managers (referred to as managerial efficiency) and the market value of a firm (Manne, 1965). According to the MCCH, any firm can capture the potential gain from a merger by changing the methods of operation of the target firm, or by replacing its management by a more efficient one, therewith raising its market value from its current level to its potential level (Mueller & Sirower, 2003).

The synergy hypothesis (SH) relies on the assumption that mergers create value or synergies. This means that mergers and acquisitions take place when the value of the combined firm is greater than the sum of the values of the individual firms (Seth et al., 2000). These values can be derived from for example more efficient operational processes (such as economies of

scope), increased market power, or any form of financial efficiency (such as tax benefits). Acquiring firms and their shareholders therefore are often inclined to pay the target firm's shareholders (including a premium) in order to achieve synergies and higher gains, according to the synergy hypothesis (Seth et al., 2000).

Conversely, the hubris hypothesis (HH) takes a manager-perspective. It argues that managers make mistakes in evaluating target firms, and that takeover premiums reflect a random error caused by the irrational bidding behavior of managers (Roll, 1986). In the purest form of the hubris hypothesis, in which there are zero gains available in corporate takeovers, the hubris hypothesis implies that the average increase in the target firm's value should be more than offset by the average decrease in the value of the bidding firm. In this pure form the entire premium paid could basically be seen as a transfer from the acquirer to the target firm (Seth et al., 2000).

The managerial discretion hypothesis (MDH) takes, similar to the hubris hypothesis, a starting point with firm managers. However, where the hubris hypothesis assumes that managers overpay for target firms due to irrationality, the managerialism hypothesis suggests that firm managers deliberately overpay in takeovers (Seth et al., 2000). They are willing to do this because it may maximize their own utility, at the expense of the firm's shareholders. This seems to be in line with the opportunistic behavior phenomena in the principal-agent theory. The underlying mechanism in this hypothesis is the management compensation process, in which management compensation is often tied to a factor or condition that is not necessarily in the interest of shareholders. An example would be the total amount of assets under the manager's control (Seth et al., 2000). Managers may therefore act opportunistically and focus on this particular factor or condition, and therewith jeopardize the (acquiring) shareholders' returns in exchange for increased personal compensation.

Summarizing, the first two hypotheses by Mueller & Sirower (2003) predict that mergers increase efficiency and aggregate shareholder wealth, while the latter two predict the opposite outcome. However, Mueller & Sirower (2003) find little to no support for the hypothesis that mergers create synergies, and neither that shareholders of both the acquiring and acquired firms gain from the synergies. Moreover, their results show that though mergers often produce gains of some sort, the average merger the acquiring firms' shareholders lose, because the premium involved in the deal more than offsets the gains from the acquisition.

More generally put, the aforementioned conflicting hypotheses can roughly be divided into two main types of M&A theories, being neoclassical theory and agency theory. Neoclassical theories predict that firms acquire in order to efficiently use (potential) available assets (Arikan & Stulz, 2016), resulting in wealth-creating deals. In other words, it predicts that the new combination will be more productive than the sum of its parts, as a result of for example synergy gains (Ahern & Weston, 2007), tax benefits or increased market power (Devos et al., 2009). Therefore restructuring activities, including mergers and acquisitions, can be seen as a response to synergistic value opportunities. This prediction is in line with the market-for-corporate-control hypothesis and the synergy hypothesis. On the other hand, agency theory predicts that firms make wealth-destroying deals and management tends to become entrenched, and therewith pursues growth at the expense of shareholders (Arikan & Stulz, 2016). This prediction is in line with in line with the hubris hypothesis and the managerial discretion hypothesis.

Besides the aforementioned, more theories and explanations exist on why M&A deals would or would not result in positive acquirer returns. Notable examples include the equity signaling hypothesis, the growth opportunity signaling hypothesis, the overvaluation hypothesis and the arbitrageur hypothesis. It would be impossible, however, to discuss and test all of the existing hypotheses. Rather, it would be better in terms of presenting an overview to separate aforementioned and other hypotheses into two groups; either as neoclassical theory or agency theory. Therefore this study from now on focuses on the level of theories, and not on the individual hypotheses.

2.2 Factors that potentially affect the level of acquirer returns

The discussion whether or not M&A deals tend to create value for the shareholders of acquiring firms is partially fueled by the many factors that play a role in the process. These factors may cause results to differ from time to time, which may very well be a reason why prior studies present ambiguous results.

This section therefore discusses some of the factors that have been included in prior relevant literature, in order to provide an insight on the possible determinants of acquirer gains resulting from M&A activity.

2.2.1 Corporate governance

The study by Alexandridis et al. (2017) attempted to explain the change in trend in M&A acquirer gains through new advancements in corporate governance structures. These structural developments predominantly materialized after - and were likely triggered by - the start of the recent financial crisis. As a result of the financial crisis many corporate activities were changed, because the pre-financial crisis corporate governance system had been proven inadequate. These changes by firms were not necessarily always mandatory (i.e. as a result of legislation or rules). In fact, Alexandridis et al. (2017) found that an increasing part of the changes in corporate governance structure was due to voluntary policy adjustments by firms. An explanation for this change could be that firms aimed to signal more confidence to the public this way, signaling an attitude of cooperation and trustworthiness, as opposed to merely adopting non-voluntary reforms. However, the legislative part of the reforms in the United States was mainly driven by the Dodd-Frank reform act of 2010 (Alexandridis et al., 2017). Though initially designed to improve financial institutions post-crisis, the act also improved the effectiveness of monitoring and governance systems in the United States by, amongst other things, "introducing new mandatory disclosure rules, fine-tuning executive compensation, granting more powers to shareholders and bolstering the accountability of executives and directors" (Alexandridis et al., 2017). In Europe, however, the Dodd-Frank Act had no direct influence, for the obvious reason that the Dodd-Frank Act is U.S. national legislation. Across the Atlantic, however, similar actions were taken. The European Union acted through various instruments and steps, which were foremost aimed at the stabilization of financial institutions and markets. These instruments included, similar to its U.S. counterparts, fine-tuned regulation and disclosure policies that were adapted based on the knowledge and mistakes that the financial crisis had revealed. Examples of actions introduced in Europe after the financial crisis were the Basel Accords (although these were not limited to Europe), the regulation of speculative funds, the regulation of executive bonuses, and the protection of investors and consumers. Another European authority that played a role in this process is the European Securities and Markets Authority (ESMA). The ESMA is tasked with corporate disclosure, supervision, corporate governance issues, and shareholder rights, and as well deals with international accounting standards[1].

[1] ESMA Annual Report 2017

Overall, the changes overall improved corporate governance systems – through both legislative and voluntary aspects – which in turn led to better investment-making decisions, Alexandridis et al. (2017) argue. This includes decisions regarding (potential) M&A deals, which in turn results in more thoroughly executed deals and ultimately higher acquirer gains. Subsequently, the authors make a more general statement about the effect of the recent financial crisis, being that "large financial shocks can ultimately have favourable ripple effects on focal aspects of corporate decision making, bolstering the value creation mechanism" (Alexandridis et al., 2017). This statement can be linked to what Schumpeter (1942) stated in one of his books many decades ago, in which he introduced the phenomena of creative destruction. This phenomena involves a situation in which extraordinary events may disrupt an economic system in such a way that value-destroying practices are abandoned in favor of newer, wealth-creating ones. So in an indirect way, the financial crisis may have triggered a process of creative destruction, which ultimately will resulted in wealth-creating M&A deals through improved corporate governance systems.

However, with corporate governance being a far-reaching, overarching and somewhat abstract term, it is important to incorporate suitable measurements. Some studies have tried to put several commonly used measurements into one (weighted) variable, which in the end results as a single index that shows how well a firm is governed. Examples of such measurements are the GIM (after Gompers, Ishii, & Metrick, 2003) and BCF (after Bebchuk, Cohen, & Ferrell, 2009) indices. However, such measurements are frowned upon by some researchers, because such indicators tend to oversimplify a complex variable. On top of that, some components might be more important than others at firm-level, as well may the components be correlated (Bhagat & Bolton, 2008). Therewith it is hard to trace back what role each component of the index plays on firm level. Indices may therefore result in biased measurement in corporate governance research. A study by Larcker et al. (2007) stresses the fact that corporate governance is indeed a complex construct and should therewith be treated as one when applied in research. By using this knowledge, Larcker et al. (2007) try to tackle the problem of contradictory results in prior research. The authors suspect that part of the explanation for these mixed results is that the measurement methods that are used in most research show insufficient levels of reliability and validity. Some studies even use either a single indicator for corporate governance; Larcker et al. (2007) subsequently document that using a single indicator for a complex construct, such as board characteristics, will "almost certainly" cause regression coefficients to be inconsistent. Needless to say, Larcker et al.

(2007) advise to incorporate multiple measurement methods when applying corporate governance in any form of research. Commonly used measurement methods are firm characteristics with regard to the board of directors, compensation, nomination, stock ownership and takeover defenses (Bhagat & Bolton, 2008). Incorporating multiple of these characteristics may give the best representation of corporate governance, when compared to the application of indices or single measurements.

2.2.2 Deal size

Prior literature has focused on the effects of the size (i.e. the monetary value) of M&A deals on acquirer gains. For example, Becher et al. (2012) incorporated the U.S. utility sector to study whether M&A deals significantly influence acquirer returns. They argue that synergies and collusions are both plausible outcomes of mergers in their dataset. Becher et al. (2012) conclude that utility mergers create wealth for the combined bidder and target. These combined gains are consistent with both the synergy and collusion hypothesis. This would imply that M&A deals lead to additional synergies, which makes the results in accordance with neoclassical M&A theory.

Alexandridis et al. (2017) report that a deal size has a significant effect on acquisition returns. More specifically, the study concludes that the largest deals in fact are the biggest contributors of wealth creation with regard to M&A activity. The authors define these largest type of deals as "mega-deals", which are valued at over $500 million. The fact that this kind of deals are the most wealth producing could be viewed as counterintuitive, because such deals are typically subject to higher agency problems, investor scrutiny, reputational exposure and (media) attention (Alexandridis et al., 2017). Nevertheless, these findings indicate that higher valued deals actually generate the highest acquirer stock returns, and thus that the size of a deal does have an impact on the returns for acquiring firms.

2.2.3 Firm age

Arikan & Stulz (2016) document how firm age tends to influence the profitability of an acquisition. They first theorized, following the logics of agency theories, that older firms tend to make more value-destroying acquisitions, in other words that older firms make worse decisions with regard to acquisitions opportunities.

Arikan & Stulz (2016) then added neoclassical M&A theories in order to determine which of the theories would be better at predicting reality. Their results, however, are ambiguous.

Consistent with neoclassical theories, they find that acquiring firms generally create wealth through acquisitions of nonpublic firms. However, they also find evidence that matches with agency theories, namely that older firms experience negative stock price reactions (i.e. negative acquirer gains) with regard to acquisitions of public firms.

2.2.4 Firm size

Prior literature theorized that firm size may be a determinant when it comes down to the acquirer's gains in M&A deals. In other words, relatively large firms may gain less or more than their smaller counterparts. One of the more recent studies that involved firm sizes is the study by Alexandridis et al. (2017). This study found that the market cap of firms, which was used as proxy for firm size, negatively influenced the gains on M&A deals. In other words, the results showed that on average bigger firms gain less following a deal when compared to small firms. Related to their methodology is the one of Moeller et al. (2004). This study revealed that smaller firms have significantly higher announcement returns (i.e. the initial return upon deal announcement) when compared to large firms. Moreover, Moeller et al. (2004) found that in general acquisitions lead to negative results. The authors theorize that acquisitions in the aggregate result in losses for shareholders, because typically the losses incurred by large firms offset the gains realized by small firms.

A more recent and comprehensive study dedicated to firm size measurements is a study by Dang et al. (2018). Since firm size is a quite commonly used variable in M&A research, as well in other related fields of research, these authors argued that there was a need for a more comprehensive overview, which was lacking prior to this study. One particular operationalization problem that arises with this variable results from the fact that many different measurement types that can be applied. Another problem that may result from this is the bias that could be created by accidentally picking the wrong measurement type. Dang et al. (2018) therefore dig deeper into the significance and coefficients of different size proxies, and examine the influences of various types of said proxies (total assets, total sales and market capitalization) of firm size in corporate finance research. Important to note, however, is that the authors rightfully state that each of the firm size measurements comes with advantages and disadvantages, and that "no measure can capture all characteristics of the variable firm size" (Dang et al., 2018). Nevertheless, the study concludes that first of all market capitalization as a firm size proxy has a noteworthy high chance of being correlated with dependent variables in research that includes capital structure measurements. However,

the authors argue that in M&A research the goodness of fit is relatively high with a market capitalization measurement. Secondly, the authors find that M&A research is one of the least robust areas in terms of firm size measurement, suggesting that choosing a particular firm size measurement matters relatively much, and that researchers in this field should therefore select firm size proxies carefully and include supporting sensitivity/robustness tests (Dang et al., 2018).

2.2.5 Payment method

Prior literature has also focused on the method of payment as a cause of variation in acquirer returns following an M&A deal. The choice in payment method initially comes down to the question whether the acquirer wants to pay the deal value in either cash, stock or a combination of both. However, not only does the acquirer have to determine what would be best for its own business practices, it also has to meet with the expectations and wishes of the target firm. For instance, a target firm could be refusing to accept (a significant amount of) shares of the acquirer when they know that the acquirer's share price has been very volatile over the last period of time. Accepting shares as payment in such a situation may result in a lower price (when converted to money) than originally agreed upon. Subsequently, one of the differences between a cash offer and a securities (i.e. stock) offer is that a stock offer value depends on the profitability of the acquisition, while the value of a full cash offer does not (Fishman, 1989). It therefore is essential to pick the ideal composition of payment methods, which has to be determined for each unique deal specifically. As a result, the different deals result in many different sorts of payment composition.

It might be noteworthy to mention that there are more kinds of (sub-)forms of payment possible in M&A activity than cash and stocks. Amongst others, these include payments through bonds, converted debt, dividend, earn-outs and liabilities. Most of these forms, however, ultimately involve a cash payment (borrowed or from available cash reserves), or a stock payment. In this study, all other payment methods that do not fit this description are ignored. Please note, though, that such forms are relatively uncommon and do only make up for a small fraction of total payments in M&A deals.

Generally speaking, from the perspective of a bidder (or acquirer), choosing between cash and stock as a payment method comes down a basic tradeoff with advantages and disadvantages. This tradeoff is between on one hand corporate control threats due to the

(relative) loss of stock and voting power, which poses a disadvantage of stock financing. On the other hand there may be a problem of bidder financing constraints, which is an advantage of stock financing (Faccio & Masulis, 2005). Additionally, as discussed by Fishman (1989), cash offers in general allows for more rapid deal completion, therewith decreasing the risk of competitive bids and/or aggressive takeover defenses against hostile bids. Furthermore, paying with cash lowers the likelihood of bid rejection by the target firm management and the likelihood of competitive bids (Fishman, 1989). Conversely, stock payments may lead to offer delays, mostly due to security registration and shareholder approval requirements (Gilson, 1986).

What is the implication of the choice in payment method? Several studies have included the effect of the payment method chosen by acquiring parties, and linked this to variations in acquirer gains. Studying this particular relationship may have significant implications on the results following an M&A deal, and subsequently firms might adjust their payment method or payment composition when empirical evidence suggests that a particular form of payment outperforms other ones in the terms of acquirer gains. A study by Mueller & Sirower (2003) showed that, on average, the mean losses of acquiring firms increases for mergers that are not fully financed with cash. In other words, they find that cash as a payment method seems to be the best choice with regard to acquirer gains, or rather, with regard to minimizing losses as a result of a merger. More specifically, they conclude that a 100% cash payment outperforms any other form of payment.

Related to this variable; several other studies have incorporated the payment method as a dummy variable, indicating whether or not an acquirer used a mixed form of payment. That is, as the name implies, a payment which includes both a cash portion as well as a stock portion. An example is a study by Faccio & Masulis (2005), in which the authors try to explain the characteristics of payment choices applied by bidding firms in M&A deals, and how these characteristics are related to different types of deal and firm aspects. They find that indeed several of the included factors influence the choice of payment, and in turn that mixed payments have impact on deal outcomes.

2.2.6 Cross-border deals

The effect of deals that involve two or more countries of residence, i.e. deals that cross a national border, has been topic in prior M&A literature. Cross-border deals also seem to be

increasingly important with growing globalization (Erel et al., 2012) and therewith may serve as an important sub-field of M&A research. Such deals bring additional dimensions to the planning and execution of an M&A deal. Examples are geographical distance, which may hinder the likelihood and effectiveness of a deal. Furthermore, currency movements seem to be an important determinant of cross-border deals. Literature shows, possibly consistent to what one would logically assume, that countries whose currencies have appreciated are more likely to have acquiring firms, while countries whose currencies have depreciated are more likely to have target firms (Erel et al., 2012). A similar effect is found for the relative stock market performance between two countries; the greater the difference in stock market performance between two given countries, the more likely that firms in the well-performing country acquire firms in the worse-performing country (Erel et al., 2012).

However, an international deal incorporates much more aspects than national deals. Examples that have also been topic of prior literature include cultural differences. These differences between countries may give problems and/or opportunities for example with regard to language, history, religion, education, norms or values. As Reus & Lamont (2009) document, acquired employees may very well be less willing to adjust to or accept acquirers that show fundamentally different norms and values. Consequently, due to such complications with regard to integration, acquired employees may be less motivated to work for the new foreign acquirer. Though, international deals seem to be a "mixed blessing", because it can also be an opportunity to learn as a firm (Reus & Lamont, 2009). According to the authors, performance the overall performance with regard to (distant) international deals in the end depends on understandability, communication and integration capabilities (Reus & Lamont, 2009).

2.3 Literature review conclusion

The variables discussed in this chapter make clear that returns for acquirers are affected by many factors, such as firm-specific and deal-specific influences. The process of documenting and controlling these potential factors is important in order to obtain more reliable test results, as well to achieve a better fitting research model. The specific model for this research is discussed in the following chapter, in the form of research hypotheses.

Chapter 3: Hypotheses development

This part considers all information discussed in the previous chapter. Therewith the following two hypotheses can be derived. The hypotheses are accompanied by the predictive validity frameworks (Libby et al., 2002). The framework aids in assessing the relationship between the operational definitions of key concepts in the theory (Libby et al., 2002). For an analysis to be valid, the links between the concepts and the operational definitions must be valid, and other factors that might affect the dependent variable must either be controlled or have no effect (Libby et al., 2002). In more general words, the aim is to have a high level of construct, internal and external validity in order to obtain a more reliable test. To do so, it is required to select the best available independent variables and their measurements (i.e. the operational definitions), and make sure that results can be generalized.

Firstly, the (sudden) change in acquirer returns, which results in average gains from M&A deals, seem to be in accordance with neoclassical M&A theory. This theory predicts that – due to for example synergy benefits – acquirers will experience positive results as a result of a merger or acquisition. The expectation therefore will be that M&A deals will lead to positive abnormal stockholder returns for acquiring firms.

Hypothesis 1: Mergers and acquisitions generate positive acquirer shareholder returns.

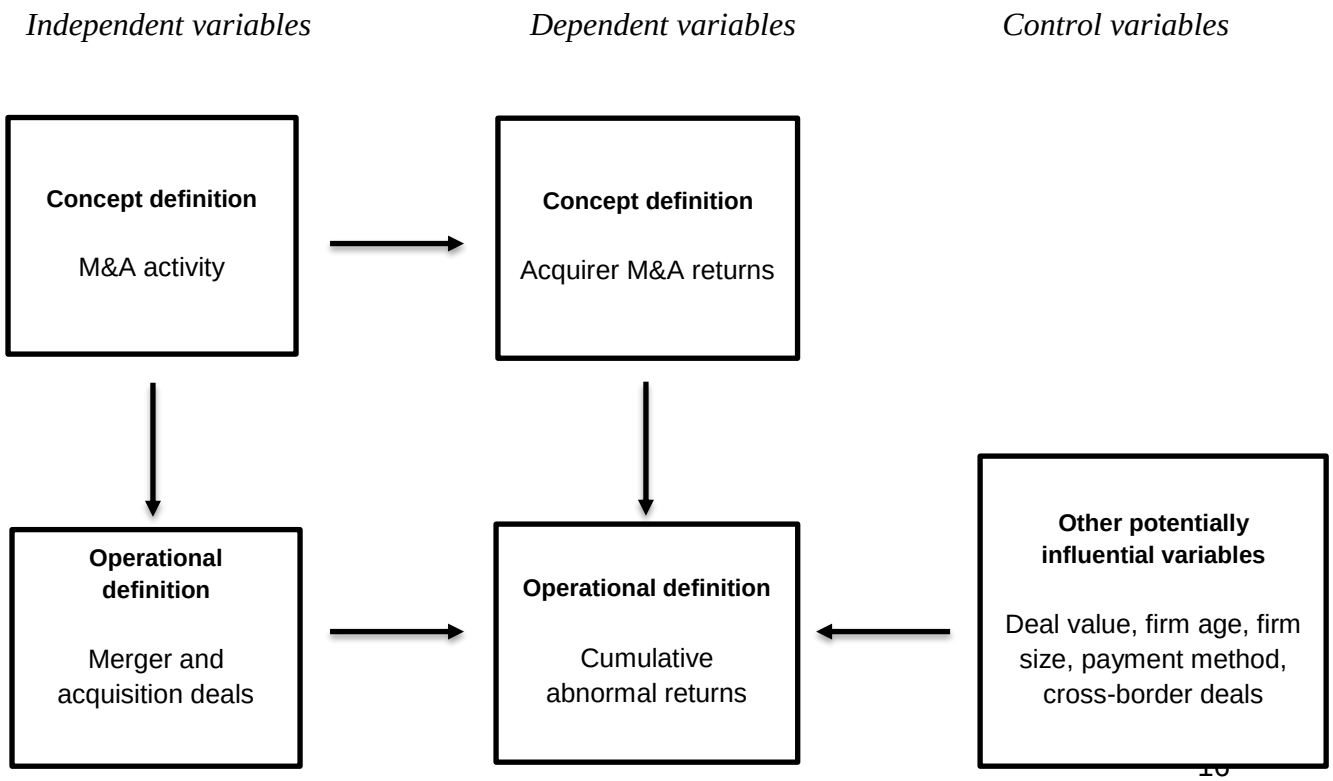

Figure 1: overview of the predictive validity framework (Libby et al., 2002) for hypothesis 1.

The concept definitions of this hypothesis involve the influence of M&A activities on the returns of firms. Because hypothesis 1 assumes that firm results will be higher due to engaging in M&A activity, such deals must give acquirers excess stock returns when compared to the returns of non-acquiring firms. The operational measurement of acquirer returns is therefore defined as the cumulative abnormal returns (CAR). Because there may be other influences that may affect the CAR of acquirers, control is required for additional effects. These include firm age, firm size, deal value, payment method, and cross-border deal characteristics.

Secondly, since the recent study by Alexandridis et al. (2017) documents that the improvement of corporate governance structures likely was the main driver behind the change in M&A acquirer gains, one would expect that firms that have more effective corporate governance structures are better at decision making in M&A deals. Subsequently, such firms will have higher average profits as a result of a deal.

Hypothesis 2: More efficient corporate governance structures result in higher acquirer shareholder returns.

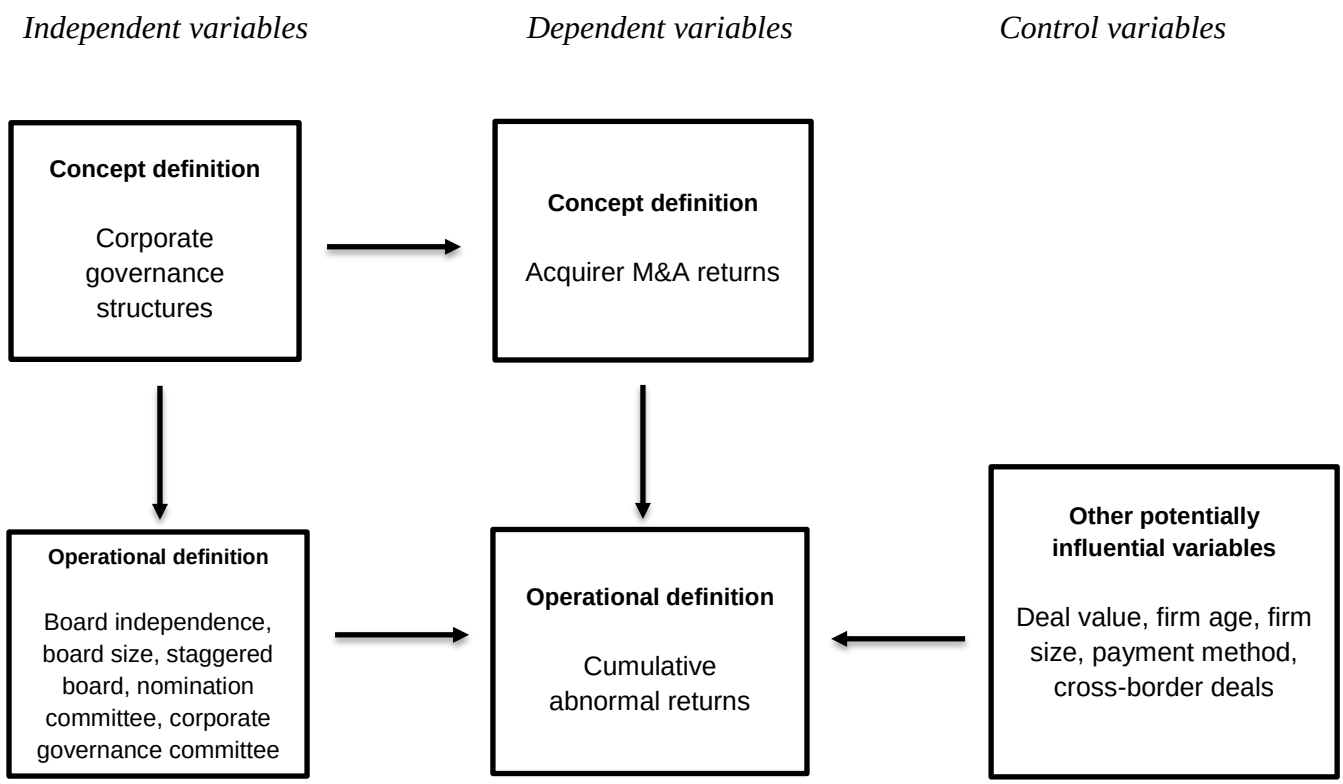

Figure 2: overview of the predictive validity framework (Libby et al., 2002) for hypothesis 2.

Hypothesis 2 is about the effect of corporate governance on acquirer returns. Because corporate governance is a very broad term which cannot be measured directly, it has to be operationalized. Several corporate governance-related characteristics are included, such as board independence, board size, staggered board presence, and the presence of nomination and corporate governance committees.

As mentioned, the predictive validity framework for both hypotheses are used as aid in order to achieve more reliable levels of validity. There are three types of validity that are desired in any type of research: internal, external and construct validity. Measures are taken in order to increase these validity levels. To ensure an adequate level of internal validity, several control variables have been added in the analysis, as well are all variables and their measurements based on results of prior research and corresponding theory. With regard to securing external validity; the firm sample has been chosen at random in order to prevent any possible election bias. Concerning construct validity; multiple measurement methods have been applied whenever possible. This is done in order to ensure variables are specified correctly, and that the operational constructs actually measure what they claim to measure.

Chapter 4: Research method

4.1 Dataset

This quantitative research involves the use of a dataset which includes all available listed European acquiring firms and their respective merger or acquisition deals. Whether a firm is classified as European depends on its country of residence. Thus this requirement is geographically based, as opposed to for example the European Union or euro area. A multi-year dataset is used, more specifically including all available deals that were completed between the start of 2009 and the end of 2017, and had a deal value of at least €1 million. This captures a significant part of the time period after the start of the 2007/2008 financial crisis. Firms in the financial and regulated sectors are excluded from the analysis, because these firms typically are managed differently compared to other industries (Becher et al., 2012) and are subject to different financial reporting standards and regulatory requirements (Krishnan et al., 2011). Because of these differences, including said sectors might lead to biased results. Following prior literature in this field, such as the study by Erel et al. (2012), sub-forms of restructuring activities will also be excluded in order to prevent biased results. Such sub-forms include for example leveraged buyouts, spinoffs, recapitalizations, self-tender offers, exchange offers, partial equity stake purchases and privatizations (Erel et al., 2012). After sizing down the initial sample by the aforementioned requirements and eliminating missing values, the final sample size incorporates 590 acquiring firms and their respective deals. Due to restricted data availability on corporate governance, the dataset with regard to the corporate governance variables includes 294 deals.

Additionally, there is control of additional effects involving various firm- and deal-specific factors. This includes firm size, firm age, deal size/value, payment methods and cross-border deals. The dataset is retrieved from online databases, which is a combination of Zephyr for M&A activity data, financial data and general firm data, Yahoo Finance for stock-related data, and Thomson One for information related to corporate governance.

A notable and surprising characteristic of this sample is that every single firm actually performed an acquisition, thus unfortunately leaving no mergers in the final sample. One reason why this happened might be the fact that only approximately 1.8% of the total M&A deals in Zephyr is a merger. The remaining deals in this database are all acquisitions, being

approximately 653,000 out of the total of 665,000 deals. A necessary but unfortunate consequence of this sample characteristic is that it will be impossible to generalize any outcome of this study with respect to mergers. Subsequently, in the following chapters all results and conclusions will be related and generalized to acquisitions only.

4.2 Variables

Acquirer gains (CAR, dependent variable) shows the total gains for shareholders of acquiring firms, measured as the cumulative abnormal returns (occasionally referred to as CAR) on the acquirers' stock prices. Abnormal returns are a commonly used measurement of gains in M&A and other event studies, for example in the studies by Ahern & Weston (2007), Gorton et al. (2009) and Moeller et al. (2004). The acquirer's CAR is measured from three months prior to the deal announcement (A-3) until a month after the deal completion (C+1), a timespan similar to the methodology of Mueller & Sirower (2003). The cumulative difference is measured between the return on a given firm's stock price (from A-3 until C+1) and the corresponding return on the STOXX Europe 600 Index. This is a stock index of 600 predominantly large, but also mid and small capitalization firms. The index gives a close approximation of the large-scale firm performance throughout Europe. The index composition is reviewed every three months in order to cover approximately 90% of the free-float market capitalization in the European stock market[2]. The index firms are located in 17 countries in Europe, including Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom. Therewith this index is not limited to countries of the European Union, which results in a better match with the dataset of this study. Another benefit of this particular reference index is the great amount of large and listed firms that is included. This characteristic helps to prevent a specific bias that may arise in long-term abnormal return analyses. This bias is referred to as the *new listing bias* (Barber & Lyon, 1997), which arises because sample firms (i.e. the acquirers) generally tend to have a long post-event history of returns, while firms that constitute the reference index typically include many "new" public firms – which generally underperform an equally weighted market index – and begin trading only after the event (i.e. acquisition) date.

[2] Stoxx Index Methodology Guide, June 2018

Corporate governance (explanatory variable) shows the acquirer's corporate governance characteristics. Measurement is done through multiple indicators, as recommended by Larcker et al. (2007). Firstly, the acquirer's board independence (CEOboard) (following Alexandridis et al., 2017), is measured as a dummy, and shows whether or not the acquiring firm's CEO simultaneously is a member of the board of directors. Secondly, the size of the board (Boardsize) represents the total amount of members on the acquirer's board of directors. Thirdly, there are dummy variables to show whether the acquirer applies a staggered board formation (Staggboard). Fourthly, there are dummies that show whether or not the acquirer has active committees for nomination (NC) and corporate governance (CGC) practices. This mix of information about the CEO, the board of directors, and oversight by committees is used to capture a part of the many aspects of corporate governance. By using these individual measurements, the downsides of using a single corporate governance indicator (such as the GIM and BCF indices; see chapter 2.2.1) can be avoided.

Firm age (Firmage, control variable) shows the total (rounded) amount of years between the acquiring firm's year of incorporation and the year in which the deal took place, a measurement similar to the methodology of the study by Arikan & Stulz (2016). Incorporating this variable is necessary to control for the performance effect of younger or older firms. For example, older firms that have relatively much (acquisition) experience could outperform younger firms on average, which could lead to biased results. This variable controls for this and other age-related performance effects.

Firm size (control variable) measures the size of the acquiring firm, through four previously used proxies: pre-deal total assets (Totalassets), total operating revenue/turnover (Revenueturnover), market capitalization (Marketcap) and total amount of employees (Employees), following the firm size measurement types discussed by Dang et al. (2018). These measurement methods yield a good description of the size of the acquiring firm, as it takes into account multiple key indicators.

Deal value (Dealvalue, control variable) shows the total amount of cash and/or the cash value of stocks that has been paid in a certain deal, converted to euros if applicable, similar to the measurement of Alexandridis et al. (2017).

Payment method (control variable) shows the form of payment by the acquirer, typically being cash, stock-for-stock, or a combination of both (Barbopoulos et al., 2017). The payment form is measured through two dummy variables. The first shows whether the deal has been fully paid with cash (Cashonly, control variable), following for example Faccio & Masulis (2005). Additionally, mixed payment (Mixpayment, control variable) is a supplementary variable that is related to the method of payment, and shows through a dummy value whether the deal involved a mixed payment (i.e. a combination of stock and cash payment) or not, which is also similar to the methodology of Faccio & Masulis (2005). Both these proxies allow for better result interpretation compared to other measurement methods.

Cross-border deals (Crossborder, control variable) shows whether or not the target firm is located in a foreign country (from the perspective of the acquiring firm), indicating when a deal crosses a national border. This variable is measured as a dummy, similar to the study by Dinc & Erel (2013).

4.3 Regression model

With regard to the analysis; a standard ordinary least squares regression is conducted, which in turn is supported by several robustness checks. The regression will include the acquirers' cumulative abnormal returns as dependent variable. The acquirers' corporate governance characteristics will serve as explanatory variable (corporate governance), and aforementioned firm-specific factors are used as control variables, resulting in the following regression model:

$$ACAR = \beta 0 + \beta 1*CEOboard + \beta 2*Boardsize + \beta 3*Staggboard + \beta 4*NC + \beta 5*CGC + \beta 6*Firmage + \beta 7*Marketcap + \beta 8*Totalassets + \beta 9*Revenueturnover + \beta 10*Employees + \beta 11*Dealvalue + \beta 12*Cashonly + \beta 13*Mixpayment + \beta 14*Crossborder + \varepsilon$$

An overview of all relevant variables can be found in the appendix.

Chapter 5: Results

5.1 Descriptive statistics

Table 1 reports an overview of descriptive statistics of the relevant variables, including the mean, variance and standard deviation. Deal values range from just over €1 million to over €28.5 billion. The average deal takes just approximately 26 days – nearly one month – from the day it is announced to the day it is completed. However, there seems to be a large difference between deals, ranging anywhere from 0 to 582 days, which is over 1.5 years.

Variable	Obs	Mean	Std. Dev.	Min	Max
Staggboard	294	1.12585	.3322461	1	2
NC	294	1.986395	.1160437	1	2
CGC	294	1.115646	.3203455	1	2
CEOboard	294	1.880952	.3243967	1	2
Boardsize	294	8.761905	2.104224	5	15
Dealvalue	590	293129.8	1725869	1025	2.87e+07
Totalassets	590	3770203	1.31e+07	2069.832	1.20e+08
Marketcap	590	5165124	2.19e+07	3423.686	2.42e+08
Employees	590	18209.08	60883.46	24	588112
Revenuetur~r	590	3389437	1.19e+07	1401.115	1.71e+08
Profittaxed	590	250550.8	1192126	-6072699	9852796
Firmage	590	39.41864	43.10452	1	220
Cashonly	590	1.710169	.4540685	1	2
Mixpayment	590	1.216949	.4125174	1	2
Crossborde~l	590	1.445763	.4974714	1	2
ReturnA3C1	590	.0875295	.2145546	-.6061344	1.060665
Indexreturn	590	.030935	.0862943	-.2218324	.2822798
CAR	590	.0565945	.2035201	-.6526962	1.060672

Table 1: descriptive values of all relevant variables. All monetary variables (Totalassets, Marketcap, Revenueturnover, Profittaxed) are scaled at x €1000. Boardsize is expressed in amount of persons, all dummies receive a value of either 1 or 2, and Firmage is expressed in years.

As can be seen, on average the firms in the sample experience cumulative abnormal returns of approximately 5.6595% when compared to the EUROSTOXX 600 Index returns. These abnormal returns are gained in the timespan of three months before the announcement date until a month after completion of the deal. However, it is important to determine whether the results in acquirer CARs are significant, and not the result of a random cause. To do so,

normally the first step would be to check whether or not the (cumulative) abnormal returns are normally distributed. This needs to be done in order to determine whether a parametric or non-parametric test has to be applied. Parametric tests assume that the individual firm's abnormal returns are normally distributed, whereas nonparametric tests do not require the assumption of normal distribution. Kolari & Pynnonen (2011) document that, in event studies containing abnormal stock price performances, nonparametric tests typically dominate parametric tests, and therefore are preferred. Campbell et al. (2010) agree with this statement, but add that even nonparametric tests are not perfectly specified in all situations. Nevertheless, both studies report that it is not uncommon and even advise to combine a parametric test with a nonparametric test as an additional robustness check. Therefore both types of tests are applied with regard to the firm sample abnormal returns. The nonparametric test that is applied is a Wilcoxon-signed rank test. The supplementary parametric test is a standard two-sided t-test.

As a reminder, hypothesis 1 predicts that mergers and acquisitions generate positive acquirer shareholder returns. In operational terms this would mean that the cumulative *average* abnormal returns (in this field oftentimes referred to as CAAR) of the firm sample at the end of the respective timeframes (A-3 until C+1) would be positive and significant, such that:

$$\mathrm{CAAR} > 0, \text{ in which;}$$

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

The CAAR of the study sample is approximately 5.6595% when compared to the STOXX 600 Europe Index firms. On average, the firms in the acquirer sample experienced a stock price increase of 8.7530%, whereas the index performance was on average 3.0935%. The difference between the two values therefore results in a CAAR of roughly 5.7% during the timeframe of three months before the announcement (A-3) until a month past completion date (C+1).

Table 2 shows the result of the Wilcoxon-signed rank test. As can be seen the null hypothesis, which assumes that the returns of the acquiring firms and the index firms are the same, can be rejected at very high significance levels ($P < 0.0000$). In other words, this test proves that

there are significant differences between the returns of both the acquiring firms and the index firms.

sign	obs	sum ranks	expected
positive	356	113696	87172.5
negative	234	60649	87172.5
zero	0	0	0
all	590	174345	174345

unadjusted variance 17158454
adjustment for ties -3.75
adjustment for zeros 0
adjusted variance 17158450

Ho: ReturnA3C1 = Indexreturn
z = 6.403
Prob > |z| = 0.0000

Table 2: the results of the Wilcoxon-signed rank test. The differences between the sample firms' performance and the reference index performance are significant.

A standard two-sided t-test (table 3) shows similar results, being that the acquirer CAAR is significant at very high significance levels ($P < 0.0000$), and thus that hypothesis 1 can be accepted. In other words, from this sample and both statistical tests it can be concluded that modern-day acquisitions actually do yield positive and significant abnormal returns for acquiring firms.

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Retu~3C1	590	.0875295	.0088331	.2145546	.0701814	.1048777
Indexr~n	590	.030935	.0035527	.0862943	.0239575	.0379124
combined	1180	.0592323	.0048292	.1658883	.0497575	.068707
diff		.0565945	.0095208		.037915	.0752741

diff = mean(ReturnA3C1) - mean(Indexreturn) t = 5.9443
Ho: diff = 0 degrees of freedom = 1178

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

Table 3: a standard two-sided t-test shows significant abnormal returns.

For each of the three sub-periods there are similar results. The first period, from one month before announcement (A-3) to the announcement date (A), the sample firms on average experienced CARs of approximately 2.46% (P = 0.0014). For the second period, from the announcement date (A) to the completion date (C), CARs were on average approximately 2.08% (P = 0.0017). For the third period, being from the completion date (C) to one month after the completion date (C+1), the average firm CAR totals at approximately 1.30% (P = 0.0006). By the means of standard t-tests, all of the sub-periods show significant abnormal returns. The t-tests for each of the three sub-periods can be found in table A1 (appendix).

One remarkable aspect of these results is that the sample firms outperform the reference index even before the announcement has taken place (A-3 until A). This could have several reasons, including for example insider information that drives up the stock price. However, this analysis does not cover the question why this could be the case, as this is based on theories that are not covered in this research. However, it may offer a starting point for a new research (see also recommendations for further research in chapter 6.3).

5.2 Regression results

Table 4 shows the outcome of the OLS-regression that has to be used to test the second hypothesis. As can be seen none of the corporate governance proxies have any significant result on the dependent variable (p-values are reported on the right in parentheses), which are the cumulative abnormal returns. Therefore, based on this analysis it is necessary to reject hypothesis 2, which states that high-quality corporate governance structures lead to higher acquirer returns. Since corporate governance characteristics do not significantly influence the CARs of the sample firms in any way, this statement therefore does not hold.

OLS regression		
Boardsize	-0.00875	(-1.58)
Staggboard	0.0417	(1.31)
NC	-0.0346	(-0.41)
CGC	0.0260	(0.74)
CEOboard	-0.0281	(-0.86)
Dealvalue	1.65e-09	(0.40)
Totalassets	-1.27e-09	(-0.70)
Marketcap	1.51e-09	(1.40)
Employees	8.62e-09	(0.07)
Revenueturnover	4.90e-10	(0.33)
Profittaxed	-1.55e-08	(-0.96)
Firmage	-0.000250	(-1.21)
Mixpayment	-0.0217	(-0.38)
Cashonly	-0.0169	(-0.34)
Crossborderdeal	-0.0242	(-1.16)
Constant	0.261	(1.07)
Observations	294	

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table 4: results of the ordinary least squares regression with cumulative abnormal results as dependent variable, corporate governance indicators as independent variables and all other (control) variables.

There are several hypothetical reasons why corporate governance characteristics do not have any effect on acquirer gains. The most straightforward reason could be that the measurement methods applied are not fit for European firms. However, with five different corporate governance indicators being used in the analysis, it might be reasonable to say that there is a relatively small chance that this would be the actual explanation. Another reason could be that the fundamental differences between Europe and the United States may have caused the results to be ambiguous. After all, because there are many differences between these regions, e.g. with regard to firm and shareholder laws, it may be the case that some factors (such as corporate governance) are more influential in a particular setting than in other settings.

Chapter 6: Discussion

6.1 Conclusion

The traditional choice between several theories and hypotheses with regard to M&A acquirer results has been going on for decades. Whereas neoclassical theory predicts that acquirers will benefit from mergers and acquisitions, agency theory predicts the opposite. Ambiguous results in prior literature indicated that possibly many factors play a role in this process, and that it is subject to change. This study aimed at clarifying this ambiguity by determining to what extent shareholders of acquiring firms in European countries actually benefit from acquisitions, if any.

The analysis has shown that in fact European firms that are involved in an acquisition do realize significant gains when compared to the returns of the reference index. The average cumulative abnormal return is approximately 5.7% over an average timeframe of just under 5 months (A-3 until C+1). This suggests that acquiring firms outperform non-acquiring firms, and thus that acquisitions generate abnormal stock returns for acquirers. Hypothesis 1 can be accepted; this result is in accordance with neoclassical M&A theory predictions.

As to the question why this sudden change in acquisition trend has occurred, Alexandridis et al. (2017) hypothesized that improved corporate governance structures may have played a role. The crisis may have caused an effect that could be seen as creative destruction. As a result, firms made better investment-related choices, and more specifically acquisition choices. The second hypothesis attempted to validate whether corporate governance structures (positively) affect acquisition returns for acquirers. However, the results indicate that in fact corporate governance structures, which are measured by several proxies, do not have a significant influence on acquirer gains resulting from an acquisition. Therefore the presumption that improved corporate governance structures led to higher (and positive) returns for acquiring firms cannot be proven, and hypothesis 2 must be rejected. Though the results are not as hypothesized, this result once more confirms the statement that findings in prior research do not automatically and universally apply in other (geographical) settings.

6.2 Limitations

This study and its methodology result in several limitations, which are discussed in this section. Firstly, there is only a limited timeframe for each firm (A-3 until C+1). An even longer-term analysis may yield different results. Secondly, the results are focused on stock price gains or losses, but in reality there are more aspects when it comes down to whether an acquisition was worthwhile or not. Focusing on stock prices, although very common in this field, may therefore lead to a tunnel vision. Thirdly, due to limited data availability there is a disproportional high share of acquiring firms that are located in the United Kingdom. Therefore the results should be interpreted with caution, because generalization for the entire European market may lead to biased results. Table A2 (appendix) shows the differences in regressions results between the full firm sample and the United Kingdom sub-sample. Though the variables still show no significant effect, the coefficients and p-values differ in all instances. Therefore it might be reasonable to document that the disproportional high share of British firms and deals may have altered the regression results and lead to a bias. That being said, one should exercise caution with regard to generalizing this analysis' outcomes to Europe as one integrated market.

6.3 Further research

There are some interesting topics that can be used for further research, and could use this research as a stepping stone. First of all, it may be useful to answer the question *why* acquisitions result in acquirer gains, for example by analyzing the classic sources of acquisition gains, such as synergies, economies of scale, and economies of scope. Secondly, a larger-scale research that would integrate the European market with for example the American and/or Asian markets could lead to more robust results and generalization, as well enable researchers to identify the differences between the different geographical locations across the world. Thirdly, this study focuses on the level of general theories, and not at the more specific individual hypotheses. Further research may split one or both of the theories into the several existing hypotheses (which can found in prior literature), and test which hypothesis fits best with the current state of acquisition practices by using specific measurement methods.

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Appendix

A.1 Variable overview

Short name	Full name	Definition
CAR	Cumulative abnormal returns	Difference between the sample firm return and the index return over a given period of time
Dealvalue	Size/value of the deal	Total value of the deal, converted to euros
Boardsize	Board of directors size	Pre-deal amount of people on the acquirer's board of directors
Staggboard	Staggered board of directors	Dummy; presence of a staggered board
NC	Acquirer nomination committee	Dummy; presence of a nomination committee
CGC	Acquirer corporate governance committee	Dummy; presence of a corporate governance committee
CEOBoard	CEO on the board of directors	Dummy; shows whether or not the Chief Executive Officer is simultaneously a board of directors member
Totalassets	Acquirer total assets	Pre-deal total amount of assets
Marketcap	Acquirer market capitalization	Pre-deal yearly market capitalization
Employees	Acquirer amount of employees	Pre-deal total amount of employees
Revenueturnover	Acquirer revenue/turnover	Pre-deal yearly revenue/turnover
Profittaxed	Profit after taxes	Pre-deal yearly profit after tax
Firmage	Acquirer firm age	Total amount of years (rounded) from the year of incorporation until the deal year
Mixpayment	Mixed payment	Dummy; shows whether or not the deal has been paid in multiple forms of payment, e.g. cash *and* stocks
Cashonly	Cash only deal	Dummy; shows whether or not the deal has been fully paid in cash
Crossborderdeal	Cross-border deal	Dummy; shows whether or not the deal crosses a border (i.e. international deals)
Dealduration	Duration of the deal	Total amount of days between the announcement date and the completion date

A.2 Other test results

Two-sample t test with equal variances

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Retur~3A	590	.0430746	.0062545	.1519206	.0307908	.0553583
Index~3A	590	.0209658	.0029159	.0708268	.015239	.0266926
combined	1180	.0320202	.0034639	.1189897	.025224	.0388163
diff		.0221088	.0069008		.0085696	.035648

diff = mean(ReturnA3A) - mean(IndexreturnsA3A) t = 3.2038
Ho: diff = 0 degrees of freedom = 1178

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.9993 Pr(|T| > |t|) = 0.0014 Pr(T > t) = 0.0007

Two-sample t test with equal variances

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
ReturnAC	590	.0262474	.006663	.1618429	.0131613	.0393335
Indexr~C	590	.0046491	.0015933	.0387002	.0015199	.0077783
combined	1180	.0154482	.0034384	.1181118	.0087022	.0221942
diff		.0215983	.0068508		.0081571	.0350394

diff = mean(ReturnAC) - mean(IndexreturnsAC) t = 3.1527
Ho: diff = 0 degrees of freedom = 1178

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.9992 Pr(|T| > |t|) = 0.0017 Pr(T > t) = 0.0008

Two-sample t test with equal variances

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Retu~CC1	590	.0206421	.0039928	.0969849	.0128002	.028484
Indexr~1	590	.0056835	.0017803	.0432423	.0021871	.0091799
combined	1180	.0131628	.0021958	.0754267	.0088548	.0174708
diff		.0149586	.0043717		.0063814	.0235358

diff = mean(ReturnCC1) - mean(IndexreturnsCC1) t = 3.4217
Ho: diff = 0 degrees of freedom = 1178

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.9997 Pr(|T| > |t|) = 0.0006 Pr(T > t) = 0.0003

Table A1: three standard t-tests showing that there are significant CARs in each of the three sub-periods.

GB bias				
	Full Sample		United Kingdom	
Boardsize	-0.00875	(-1.58)	-0.00825	(-1.28)
Staggboard	0.0417	(1.31)	0.0362	(0.89)
NC	-0.0346	(-0.41)	0	(.)
CGC	0.0263	(0.75)	0.0317	(0.81)
CEOboard	-0.0286	(-0.87)	0.0425	(0.61)
Dealvalue	1.91e-09	(0.41)	1.33e-09	(0.24)
Totalassets	-1.24e-09	(-0.67)	-1.10e-09	(-0.39)
Marketcap	1.50e-09	(1.38)	1.37e-09	(0.68)
Employees	8.49e-09	(0.07)	3.29e-09	(0.03)
Revenueturnover	4.72e-10	(0.32)	2.78e-10	(0.11)
Profittaxed	-1.55e-08	(-0.96)	-2.14e-08	(-0.86)
Dealduration	-0.000682	(-0.12)	-0.00246	(-0.37)
Firmage	-0.000249	(-1.20)	-0.000323	(-1.25)
Mixpayment	-0.0220	(-0.39)	-0.0244	(-0.39)
Cashonly	-0.0174	(-0.35)	-0.0301	(-0.55)
Crossborderdeal	-0.0241	(-1.15)	-0.0242	(-1.00)
Constant	0.263	(1.08)	0.0804	(0.33)
Observations	294		246	
t statistics in parentheses * p<0.05, ** p<0.01, *** p<0.001				

Table A2: the differences in OLS-regression results between the United Kingdom and the full dataset.