The implications of Socially Responsible Investments

- Taking on the perspective of M&As

by

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Title:	The implications of Socially Responsible Investments - Taking on the perspective of M&As
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Key words:	ESG-Score, Mergers and Acquisitions (M&As), Post-Deal Performance, Socially Responsible Investment (SRI), Socially Responsible (SR)-Target, SRI Funds
Purpose:	The aim of the study is to shed light onto the research gap combining Socially Responsible Investments with corporate investments in the form of Mergers and Acquisitions. Thus, it is investigated if a high social responsibility level of the target company has an impact on post-deal performance. In addition, it is investigated which kind of acquirers are investing in high-, medium- or low-classified socially responsible targets.
Methodology:	This study takes on a quantitative research approach in the form of an event study using an Ordinary Least Squared regression. The research is supported by a manual analysis of the ESG-scores of both acquirers and targets.
Theoretical perspectives:	The theoretical perspective combines theory from value creation through M&As and theory of SRI fund performance.
Empirical foundation:	M&As of public companies between 01.2003 and 03.2018 involving targets with listed ESG-scores for the year-end before the acquisition announcement.
Conclusions:	There is an indication that a high-level SR-target has a negative impact on the post-deal performance of an M&A. This adverse impact appears to be relatively low in monetary terms. Further, it appears to be a trend towards acquisitions of higher-classified SR-targets although, at the moment, investing in equal- or lower-classified SR-targets is more common.

Abstract: *There is an increased interest not only in sustainability but also in becoming socially responsible due to greater awareness as well as pressure from stakeholders. Contradictive results are found on whether Socially Responsible Investments (SRIs) in the area of funds are outperforming conventional funds. Further, in the area of Mergers and Acquisitions (M&As), there is plenty of research identifying characteristics influencing performance. However, research fails to combine the perspectives of both areas in order to generate new insights. This is the purpose of this study which found that an acquisition of a highly Socially Responsible (SR)-Target has a negative effect on Post-Deal Performance, although the impact appears to be relatively small in monetary terms. Despite the adverse reaction on Socially Responsible M&As (SR-M&As), a trend towards acquisitions of higher-rated socially responsible targets can be identified. The study claims that a potential explanation is that the market is unwilling or unable to fully identify and evaluate the complexity of SR-M&As in an efficient way.*

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1. Introduction

In the first chapter, the background for the researched topic is outlined. The problem statement and the purpose of the study are then introduced which leads to a presentation of the research questions. Limitations of the study are summarized at the end of the chapter.

1.1 Background

Firms have increased their investment in sustainability over the past decades both voluntarily and as a result of pressure from stakeholders (Deng, Kang et al. 2013). Further, sustainability is becoming progressively visible (Aktas, de Bodt et al. 2011) and is increasingly popular in legislations (GRI & CSR Europe 2017; Deng, Kang et al. 2013). This is a response to the increasing interest by investors in non-monetary utility in line with personal- and societal values (Auer, Schuhmacher 2016), such as Socially Responsible Investments (SRIs).

SRIs are defined as investments into socially responsible entities combining environmental-, social- and governance factors (Auer, Schuhmacher 2016). SRI portfolios increased tremendously worldwide during the last couple of years (Aktas, de Bodt et al. 2011; El Ghoul, Guedhami et al. 2011) which shows interest in SRIs as a research topic.

Now the question arises whether the performance of SRIs is any different from non-SRIs in monetary terms. The performance issue is a widely researched topic in relation to SRI funds. However, this study takes on a new approach to enhance the knowledge in this field by changing the perspective from SRI funds to corporate investments in form of Socially Responsible (SR) Mergers and Acquisitions (M&As). So far, research has failed to combine SRIs with corporate investments in form of M&As. This research therefore combines the performance analysis of SRIs with the widely researched performance analysis of M&As. The findings of this study show a rising interest among acquirers to invest in high-classified Socially Responsible (SR)-targets. A quantitative research is conducted in order to assess this matter showing a negative impact on the post-deal monetary performance when acquiring a SR-target. However, the impact is relatively small in monetary terms where reasons for this might be the inability or the unwillingness of the market to value ethics.

1.2 Problem Statement

Literature provides contradictory results on SRI fund returns in comparison to mutual funds (El Ghoul, Guedhami et al. 2011; Deng, Kang et al. 2013; Auer, Schuhmacher 2016), which is further discussed in the literature review. This is claimed to be mainly because of the comparison between funds with unequal sizes and diverse characteristics (El Ghoul, Guedhami et al. 2011). Differences in performance are also explained by recessions and economic upturns.

SRI funds are highly researched. However, there is no agreement whether SRI funds outperform or underperform conventional funds, or if SR-characteristics are indifferent with respect to performance (El Ghoul, Guedhami et al. 2011; Deng, Kang et al. 2013; Auer, Schuhmacher 2016). Research regarding returns on SRIs is however, mostly limited to the area of funds.

On the other hand, the performance of M&As is a highly researched area where an M&A is seen as a major investment decision from a corporate point of view. There is plenty of research explaining what drives the returns of M&As as well as if the return is positive, negative or insignificant (Cartwright, Schoenberg 2006; Gregory, McCorriston 2005; Uddin, Boateng 2009).

This outlined problem is illustrated below in Figure 1. The references named are example studies and illustrate that there is a clear research gap when it comes to combining SRIs with the corporate perspective in the form of M&As.
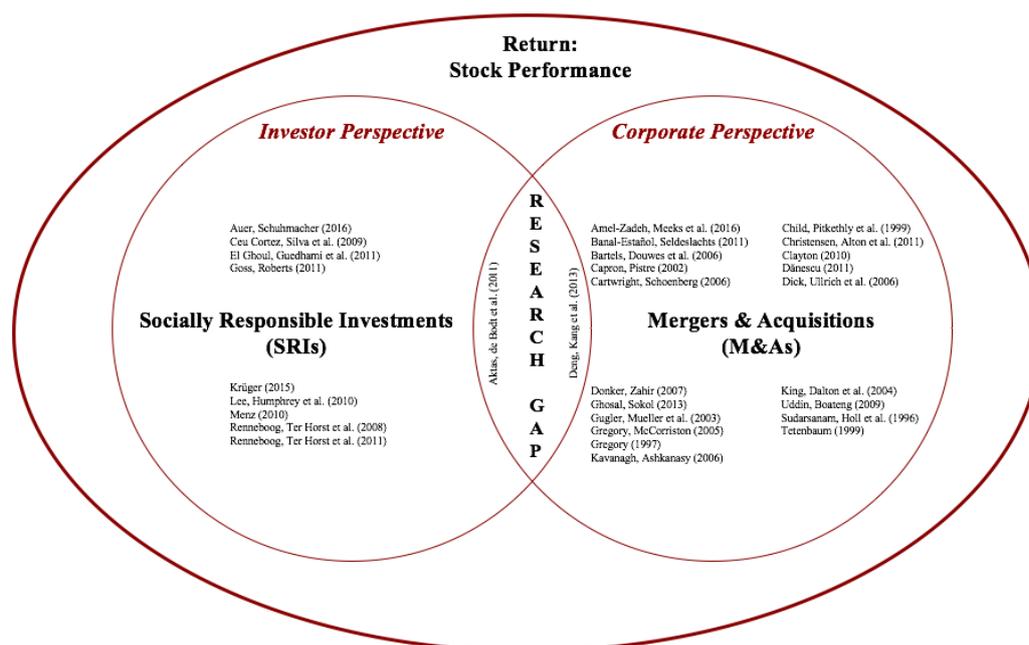
Figure 1 - Research gap

Research fails to think outside the box and does not consider the research gap with only two studies applying SRIs to the M&A context. This is the reason why within this study a new angle was applied to look at the SRI performance. Thus, this research focuses on the question whether or not Socially Responsible M&As (SR-M&As) result in a superior return. One article already suggests that acquirers can generate shareholder value since the acquirer learns from the target's social responsibility know-how and experience (Aktas, de Bodt et al. 2011). As M&A events are unanticipated to a certain extent, the reverse causality between Corporate Social Responsibility (CSR) and firm value; a central problem when comparing SRI fund performance, might be mitigated (Deng, Kang et al. 2013). M&As are used in this research as they are one of the most important corporate investment decisions impacting performance and thereby, shareholder value heavily (Deng, Kang et al. 2013). Using this unique perspective might solve the problem of the contradictory results of current research and shed new light onto the debate. In addition to the regression focusing on performance, this study incorporates SR-classifications for acquirers and targets. This further enhances the understanding of the results and makes them more applicable in practice as it provides knowledge about the motivation of acquirers buying high-, medium- or low SR-targets. Thus, this study contributes to filling the research gap by shedding light on the subject of SRIs using a barely researched approach.

1.3 Aim & Purpose

Research combining M&As and sustainability is very limited and this research is conducted in order to contribute to the understanding of SRIs in relation to M&As. Researchers further suggest this as a way to get complementary insights into this debate (Aktas, de Bodt et al. 2011). This research approach has previously been used by only one study along with one partially related to the subject (Deng, Kang et al. 2013). In order to answer the research questions and hypotheses, a regression was run including a measure for social responsibility with the purpose of detecting if SR-M&As outperform acquisitions of non-SR-targets. The study further incorporates SR-classifications for acquirers and targets in order to provide an understanding of which acquirers are seeking to acquire high-, medium- or low-level SR-targets. This significantly contributes to the understanding of the rationale behind SRIs. In addition, it provides new insights to the M&A debate from a sustainability point of view which seems to be reasonable because sustainability is increasingly important to investors (Auer, Schuhmacher 2016). With the background of a majority of M&As failing to deliver value (Christensen, Alton et al. 2011), the new insights provided by this study might

add value to practitioners since, so far, there is barely any information on the relationship between SR-levels of targets and M&A performance. These insights might be used by practitioners to improve their decision making about which targets to buy in order to avoid failure.

1.4 Research Questions

The outlined problem and the purpose of this study are intended to be answered by looking into the following research questions:

Does an investment in a socially responsible M&A target make a difference on the post-deal performance?

If there is an impact by the sustainability level of the target in respect to post-deal performance, how influential is it?

What drives SRIs and do acquirers have the intention to become more socially aware when acquiring a high-level SR-target?

1.5 Scope & Delimitations

The chosen methodology is an event study which appears to be commonly used (Aktas, de Bodt et al. 2011; Deng, Kang et al. 2013) and rather simple. However, an underlying assumption is an efficient market but within the context of SR-M&As, the market appears to fail to efficiently interpret the complex information (Deng, Kang et al. 2013). Thus, a longer event window might be more appropriate in this case and is therefore suggested for further research. In addition, another pitfall of the chosen methodology is that other events that are not related to the acquisition might bias the results (MacKinlay, 1997). This was intended to be mitigated by choosing a short-term event window which however does not fully eliminate the flaw. Further, the problem of an illiquid trading period needs to be considered. This means that the traded results are skewed if the event occurs in a period in which the stock is not traded.

In addition, value might have been added by using the market model instead of the adjusted market model. However, within the scope of this study the adjusted market model was used to calculate the cumulative abnormal returns as both models are claimed to yield similar results (Brown, Warner 1985), even though the adjusted market model does not

account for the risk component (MacKinlay 1997). The benefit of using the adjusted market model is that it enhanced focus on other more value-adding areas.

The concept of SRIs is exposed to measurement errors as it is difficult to accurately quantify as it is qualitative in nature and lacks binding standards. Disclosure of sustainability information varies among companies and the sustainability measure used in this study is partially based on self-reported information (Thomson Reuters EIKON (including Datastream for Office). 2018; Krüger 2015).

Due to the limited availability of data and the rather short time frame for this research, it is important to mention the possibility of omitted variables harming the significance of the regression and thereby the validity of the analyzed results. Further, there are some flaws within the databases used concerning deal attributes that might bias the results. This issue was considered and mitigated when combining transactions from both databases but since the databases have different measurement methods and definitions of values, all pitfalls could not be avoided. Finally, the chosen methodology does not account for realized performance but only for expected performance and this should therefore be considered for further research.

2. Theoretical Framework & Hypotheses

This chapter introduces previous research and relevant theories in order to support and analyze the quantitative findings of this study.

2.1 Theory

First, the measure for social responsibility is introduced. This is followed by the presentation of relevant theory which is then applied in the following literature review.

2.1.1 Social Responsibility

Previous research suggests that firms have expanded their investment in sustainability over the past decades both voluntarily and as a result of pressure from stakeholders (Deng, Kang et al. 2013). Sustainability is further becoming increasingly visible (Aktas, de Bodt et al. 2011).

2.1.1.1 The Triple Bottom Line

The growing interest in sustainability within the corporate sector has resulted in companies attempting business decisions with a higher focus on assessing and benchmarking their impact in relation to the Triple Bottom Line (environmental-, economic- and social sustainability) framework (Thabrew, Perrone et al. 2018).

The awareness of sustainability issues has further led to an increased interest in SRIs which is therefore a highly relevant topic in today's financial research- and mutual fund industry. Instead of solely focusing business decisions on financial metrics, businesses are progressively interested in achieving sustainability goals where success is also based on Triple Bottom Line (TBL) measures. Thabrew et al. (2018) found that TBL metrics dig deeper into the preferences of stakeholders. The question therefore arises whether firms adopt TBL because they see it as beneficial itself, or due to the pressure from shareholders and other stakeholders (Sridhar 2012). The TBL is slightly modified in this study to reflect company performance in regard to social-, environmental- and governance issues and how it relates to acquisitions of SR-targets.

2.1.1.2 ESG-scores as Proxy for Social Responsibility

A SRI can be described as an investment procedure used to identify companies with a high level of CSR. The rising awareness of environmental-, social-, corporate governance- and ethical concerns (Renneboog, Ter Horst et al. 2008) leads to the decision to not use a CSR-score as SR-proxy but the ESG-score for a more holistic approach on the sustainability measure. The different dimensions included are displayed in Table 1.

Table 1 - Dimensions of the ESG-score

ENVIRONMENTAL	SOCIAL	GOVERNANCE
Resource use	Workforce	Management
Emissions	Human rights	Shareholders
Innovation	Community	CSR strategy
	Product responsibility	

Thus, the chosen way to measure the level of social responsibility within companies is looking at the environmental-, social- and governance (ESG)-scores (Auer, Schuhmacher 2016). This score is commonly used in the corporate finance area (Wimmer 2012) since many investors are unsure of what they actually consider as socially responsible. ESG-scores quantify the level of CSR within companies. To get a score, rating agencies evaluate data from publicly available sources such as company filings, governments, media and third parties. Everything is then summarized into a single ESG-score (Auer, Schuhmacher 2016).

Thomson Reuters (2018) offers one of the most extensive ESG-databases and is seen as reliable since the database is continuously updated. This means increased screening and monitoring for the companies as mentioned by SRI researchers (El Ghoul, Guedhami et al. 2011). If a company is involved in, for example, a scandal during the year the overall ESG-score and grading will be affected (Thomson Reuters ESG Scores. 2018). The score further allows for comparison between different geographic regions (Auer, Schuhmacher 2016). This makes the database and the score perfect for the purpose of this study as it is assumed to be accordingly adjusted for a major event such as an M&A.

2.1.2 Theories Related to SRIs and M&A Research

This research uses an event study with abnormal returns as dependent variable. The requirement is therefore that the theory of an efficient capital market holds which implies that the market reacts immediately and unbiasedly to new information (Ogden, Jen et al. 2003).

2.1.2.1 Contract Theory

Contract theory suggests that a firm has a contract with different stakeholders; not only an explicit one but also implicitly depending on expectations. The theory suggests that a firm can be seen as a nexus of contracts between a firm and its stakeholders as well as between stakeholders and shareholders of the firm (Ogden, Jen et al. 2003; Deng, Kang et al. 2013). Ogden et al. (2003) suggest that each stakeholder plays an important role in relation to a firm's financing and operations. The different groups of stakeholders receive claims in various contracts; explicitly and implicitly. Implicit contracts are important in this context as being socially responsible is incorporated. These contracts depend on stakeholders' expectations on whether or not a firm is able to keep its SR-commitments (Deng, Kang et al. 2013).

The relationship between CSR and contract theory is that firms with high CSR (high-CSR firms) have better reputation when it comes to honoring commitments in implicit contracts. Therefore, efforts and resources from stakeholders to such firms are higher. This generates an improved alignment of interest between shareholders and other stakeholders of high-CSR firms, which in turn leads to stakeholders contributing to efficiency and long-term profitability to a higher extent than in low-CSR firms (Deng, Kang et al. 2013). Deng et al. (2013) further emphasize the importance of this contract theory relationship suggesting that a merger with a high-CSR firm will lead to higher merger announcement returns as well as improved post-merger operating performance. Contract theory hence supports the idea that M&As undertaken by high-CSR firms maximize shareholder value as those firms benefit from higher satisfaction among stakeholders due to the additional contribution (Deng, Kang et al. 2013).

2.1.2.2 Signaling & Reputation

This part of corporate finance theory is used by firms as an instrument to mitigate information asymmetry by sending signals in order to differentiate oneself from others (Ogden, Jen et al. 2003). Signaling is used to influence stakeholders by highlighting advantages (Fombrun, Shanley 1990) and to provide a certain image of the company (Ogden, Jen et al. 2003). A firm's reputation is more and more important as outsiders are increasingly interested in corporate financial decisions and since reputation has an impact on different areas such as financing (Chen 2008). Previous research further suggests that a SRI is a way of signaling (Deng, Kang et al. 2013).

In relation to SR-M&As, the intention could be for management to signal sustainable awareness in order to serve its own interests (Krüger 2015). Another aim could be to show willingness to be monitored more thoroughly (Aktas, de Bodt et al. 2011) and signal management quality (Fombrun, Shanley 1990). These signaling efforts could result in better conditions or easier access to capital markets (Aktas, de Bodt et al. 2011) as well as higher commitment from stakeholders (Aktas, de Bodt et al. 2011; Auer, Schuhmacher 2016; Deng, Kang et al. 2013).

Theory shows that the more expensive a signal is the better. Such a signal is not easily replicable by other companies and thereby one can escape the pooling equilibrium. Thus, the lemon problem is mitigated. The lemon problem states that all market participants will pretend to have high-quality products and/or services even if they do not (Ogden, Jen et al. 2003). As acquisitions of high-level SR-targets are major investment decisions (Aktas, de Bodt et al. 2011), this signal can be assumed to be powerful (Ogden, Jen et al. 2003).

However, it is important that the signals described above are perceived externally and are subject to the understanding of external stakeholders (Fombrun, Shanley 1990). The same signal can result in various perceptions leading to different interpretations by external recipients (Ogden, Jen et al. 2003). Research by Sridhar (2012) suggests that reporting TBL performance results in a status boost and increased reputation. This in turn proposes that an acquisition of a SR-target is beneficial to a firm in reference to signaling and company reputation.

Brand-name Prestige

Another interesting perspective to take into account is that acquirers may look to acquire prestigious SR-targets to enhance their own prestige. Research shows that there are different brand-name strategies in M&A transactions, such as a predominance strategy. This strategy can be either acquirer-dominant where the combined firms employ the acquirer's name or target-dominant where the target's name will be adopted. The strategy depends on what the combined firms want to communicate to shareholders and other stakeholders (Groeppel-Klein, Spilski 2015). This is interesting to consider as one motive of the acquirer in a SR-M&A might be to increase its own prestige in terms of social responsibility. The target-dominant strategy could thus be applied if the SR-target and its name are perceived as highly prestigious.

2.1.2.3 Agency Theory & Takeover Motives

The agency theory tries to resolve issues such as unaligned goals, management entrenchment, hubris and empire-building (Ogden, Jen et al. 2003). The theory suggests that

the manager (agent) wants to pursue his own interests ahead of converging common interests of both parties (Kultys 2016). This however, is in contrast to corporate finance theory which suggests that the main aim should be shareholder (principal) value maximization (Ogden, Jen et al. 2003). In addition to growth, which is the most common motive for M&As (Gaughan 2015), deals are also very popular in respect to agency problems (Clayton 2010; Uddin, Boateng 2009) such as management hubris (Gregory 1997; Gugler, Mueller et al. 2003), empire-building and entrenchment (Donker, Zahir 2007). The agency problems are further introduced below.

2.1.2.4 Management Entrenchment & Empire-building

A natural behavior of the CEO of a firm is to drive the firm toward investments that will reveal his or her unique skills. Although the CEO is not performing satisfactorily, this behavior will make him or her increasingly more difficult to replace (Shleifer and Vishny 1989, cited in Wang, Moini 2016). This phenomenon is known as management entrenchment (Ogden, Jen et al. 2003). In relation to SR-M&As, an entrenched manager may target a SR-company due to his or her unique skills within sustainability, even though this is not in the best interest of shareholders or other stakeholders. This is an important theory as the underlying convictions of the management entrenchment could be problematic for generation of shareholder wealth.

Managers may furthermore engage in empire-building where Stein (2001) (cited in Wang, Moini 2016) found that empire-building managers prefer to run a large firm as opposed to a profitable one in order to reap personal benefits (Mueller 1969). Bigger firms that are more visible engage more frequently in social responsibility where acquiring a SR-target might be a cover for empire-building. Jensen (cited in (Stein 2001)) proposes that managers who engage in empire-building spend almost all accessible funds, where specific investments can be identified as notably attractive to empire-building managers (Stein 2001).

By applying both theories to this research, one could argue that a motive for an acquisition of a SR-target could be to build a sustainable empire. Such an acquisition would most likely benefit managers at the expense of shareholders if managers possess specific skills within sustainability. Research by Tirole (2001) (cited in Renneboog, Ter Horst et al. 2008) further states that a manager can almost always rationalize an action such as empire-building by emphasizing the benefit of some stakeholder.

2.1.2.5 The Hubris Hypothesis

Roll (1986) proposed another motive for takeovers called the hubris hypothesis. He suggests that hubris, or pride, amongst the managers of the acquirer may play a role in an M&A. The hubris hypothesis proposes that the takeover may be due to personal motives instead of shareholder value creation. Roll found this as an explanation for managers paying a premium for a firm already correctly valued by the market based on managers' belief that their valuation supersedes the objective market valuation. An underlying factor of this theory is that the market is efficient and therefore provides the best indicator of firm value (Roll 1986; Gaughan 2015). Seth et al. (2002) (cited in Shimizu et al. 2004) found deals that emerged from hubris to be value-destroying. In addition, the over-optimism or overconfidence related to hubris leads to a biased perception of potential synergies to be realized with the target post-merger (Aktas, Roll et al. 2006). Thus, the argument of increasing social responsibility through an acquisition of a high-level SR-target might be a cover for managers to justify hubris-based M&As.

2.1.2.6 Free Cash Flow Theory of M&As

According to Jensen (1986), decreasing the resources under management's control reduces managerial power and thereby mitigates empire-building. It further prevents entrenchment and other forms of overinvestment. Another important aspect that plays a role in management's ability to engage in entrenchment or empire-building is the firm's leverage ratio. One way to reduce the free cash available for investments is therefore to take on a lot of debt (Ogden, Jen et al. 2003). Higher leverage reduces the firm's access to the capital market and decreases the option for management to invest in various projects, such as M&As (Ogden, Jen et al. 2003; Gaughan 2015). Although, leverage can be an implication of success as low leverage companies tend to perform better which is however in contrast to the disciplinary argument of the free cash flow hypothesis (Ogden, Jen et al. 2003).

For the scope of this study, research claims that managers use excess cash to invest in high-level SR-targets to improve their personal reputation. However, research has shown that companies tend to only invest in sustainability if they have excess cash available, which suggests that an acquisition of a SR-target might not be a top priority for firms with a lower level of free cash flow (Deng, Kang et al. 2013).

2.2 Literature Review

Here, the SR-performance is presented based on previous research where funds are used as indicator for SR-performance. This is followed by a discussion of M&A research before both areas are combined in order to shed light on the research gap in focus in this study.

2.2.1 SRI Performance

The arguments introduced are grouped under topics that are reapplied in the analysis in order to unbundle the broad explanation range given by research.

The increased sustainability awareness (Galema, Plantinga et al. 2008) eventually resulted in the emergence of SRI funds (Renneboog, Ter Horst et al. 2008). This means that stocks with negative ethical character such as companies related to alcohol, gaming, tobacco, etc., are excluded in these funds (Galema, Plantinga et al. 2008). SRI funds and their performance in comparison to conventional funds are a popular research topic (Renneboog, Ter Horst et al. 2008). They are therefore used in this research in order to illustrate the rationale between SRIs and performance.

There is a lively debate about three opposing SRI trends identified by different researchers. Some argue that SRI funds financially outperform conventional funds while others claim that the financial return is inferior. The third trend claims that there is no difference at all regarding financial performance (El Ghoul, Guedhami et al. 2011; Deng, Kang et al. 2013; Auer, Schuhmacher 2016).
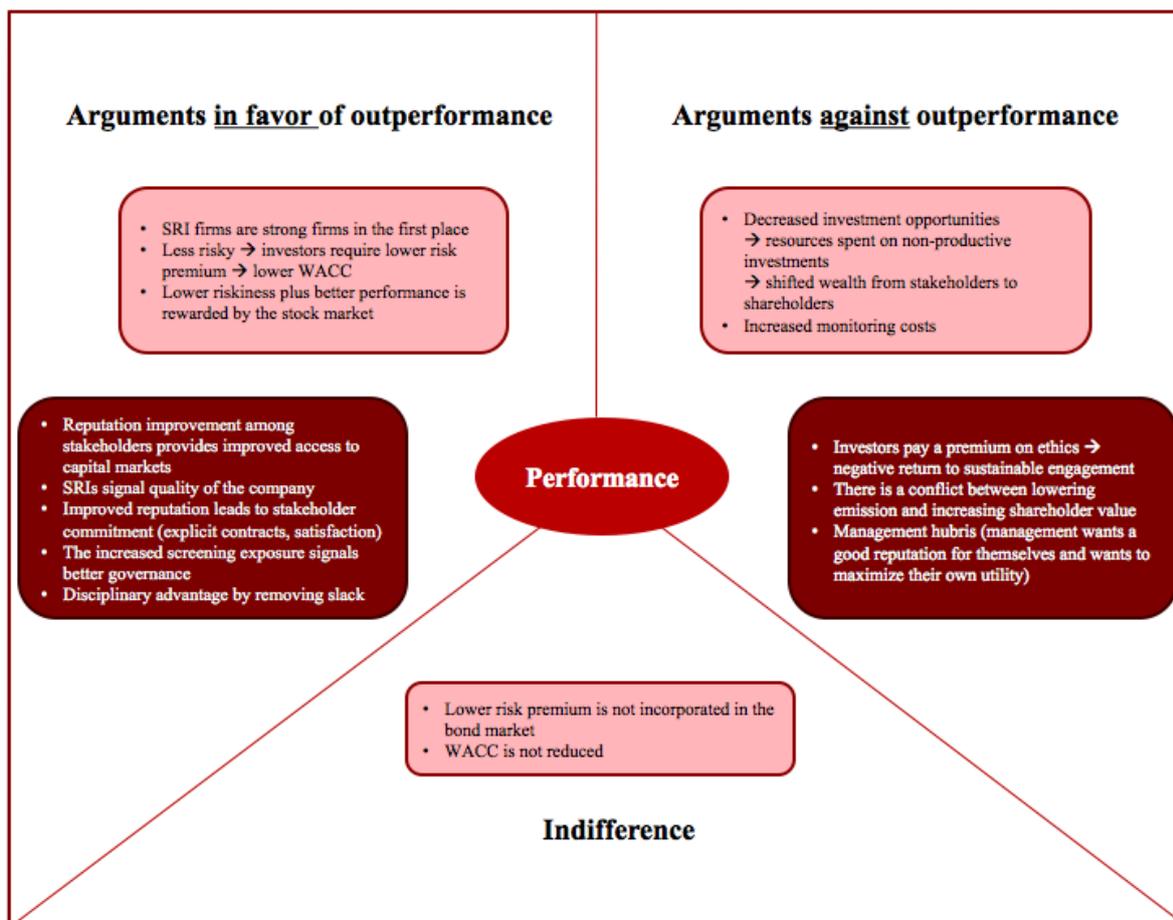
Figure 2 - Summary of SRI fund performance

The three different trends are justified with different arguments and theories illustrated and summarized in Figure 2 - Summary of SRI fund performance. In the following sections, the conflicting theories displayed in the figure are discussed into more detail.

2.2.1.1 Arguments in Favor of Outperformance

Arguments in favor of outperformance are often summarized in literature as "doing good while doing well" (Krüger 2015; Auer, Schuhmacher 2016). There is evidence that successful engagement in both climate change and governance tends to generate shareholder value (Krüger 2015). Additionally, a higher environmental- and social performance acquirer might have an increased interest in a socially- and environmentally aware target (Aktas, de Bodt et al. 2011). Thus, this might be a reversed causality issue.

Risk Premium

SR-companies are often claimed to be less risky (Lee, Humphrey et al. 2010) and better performing. This would indicate a lower risk premium (Menz 2010) and thus a lower Weighted Average Cost of Capital (WACC) according to the Capital Asset Pricing Model (CAPM). Projecting this theory onto acquisitions, research proposes a positive correlation

between the level of social- and environmental risk management practices and the return of an acquisition. This then suggests a reward of a SRI from the stock market (Aktas, de Bodt et al. 2011). However, the lower risk premium appears to not be incorporated in the bond market (Menz 2010) and SR-companies pay higher spreads for bank loans (Goss, Roberts 2011). This is in contrast to the claim that the signaling effect hence eases the access to and the costs associated with financial markets (Aktas, de Bodt et al. 2011).

Healthy Financials

Outperformance could further be explained as acquirers targeting financially strong firms with better long-term sustainable performance where these targets just happen to be socially responsible (El Ghoul, Guedhami et al. 2011). Deng et al. (2013) found that high-CSR firms appear to have a significantly higher Tobin's Q, lower leverage and higher free cash flow.

Reputation/Contract Theory

Investing in CSR tends to improve the reputation of the firm and results in stronger implicit contracts leading to increased commitment by employees. Thus, stakeholders accept less favorable explicit contracts. Additionally, high-CSR acquirers are found to breach less implicit contracts with stakeholders and thereby tend to receive more support (Deng, Kang et al. 2013). Investing in SR-activities is favorable to all stakeholders because it increases job security or product quality which in turn leads to greater loyalty (Auer, Schuhmacher 2016). It also generates stakeholder satisfaction (Aktas, de Bodt et al. 2011) as stakeholders tend to increase their support of the firm and as a result, shareholder wealth increases. In addition, high-CSR acquirers are believed to reduce conflicts of interest between stakeholders and shareholders which increases combined wealth (Deng, Kang et al. 2013). A SRI further implies a higher quality firm as it shows extended willingness to increase or maintain social- and environmental screening as well as to manage respective risks (Aktas, de Bodt et al. 2011).

Mixed Investor Reactions

As investors commonly respond rather negatively to CSR-scandals (Krüger 2015), one might argue that investments in targets with poor social responsibility would result in a negative future performance. However, it was found that there are different investment clienteles that react differently in regard to this (Renneboog, Ter Horst et al. 2011)

2.2.1.2 Arguments against Outperformance

Arguments against SRI funds outperforming conventional funds are often named as "doing good but not well" (Auer, Schuhmacher 2016). El Ghoul, Guedhami et al. (2011)

claim that an increase in CSR is believed to be negatively related to risk-adjusted performance.

Investment Opportunities

Other research argues that investing in SR-companies decreases investment opportunities (Ceu Cortez, Silva et al. 2009; Lee, Humphrey et al. 2010). In other words, too stringent sustainability standards may harm shareholder value because too many resources are spent on less optimal CSR-investments that decrease profitability and shift shareholder wealth to stakeholders (Deng, Kang et al. 2013).

Premium on Ethics

Inferior- versus better performance depends on the criterion used to identify environmental-, social- and corporate governance (Aktas, de Bodt et al. 2011). There is however evidence that investors in general pay a premium on ethical investments (Auer, Schuhmacher 2016) which means that investors pay a price for their ethics (Aktas, de Bodt et al. 2011). This price might be due to the increased monitoring as there is evidence that SRIs increase monitoring costs (El Ghoul, Guedhami et al. 2011; Lee, Humphrey et al. 2010) which can be considered a drawback as well.

Investor Reaction

Researchers found that making a commitment and joining a sustainability initiative results in negative abnormal returns (Aktas, de Bodt et al. 2011). This is in line with findings that investors respond slightly negatively to positive CSR-events (Krüger 2015). Thus, companies accordingly tend to pay a certain price for ethical investments.

On the other hand, investors are found to be less sensitive to bad performance as they are also interested in non-financial attributes (Lee, Humphrey et al. 2010). This means that socially conscious investors are less likely to respond to negative past performance (El Ghoul, Guedhami et al. 2011). This theory would imply an eased pressure on performance requirements which is in contrast to creating incentives for managers to perform well.

Agency Argument

Some argue that a SRI is a way for managers to solely gain a good reputation themselves by increasing satisfaction among stakeholders such as labor unions or politicians (Krüger 2015). Thus, stakeholder wealth is increased at the expense of shareholders (Deng, Kang et al. 2013). This is supported by the findings that management is claimed to maximize its own utility in prosperous times (Auer, Schuhmacher 2016) by engaging in expensive SR-activities.

2.2.1.3 Indifference

The third trend identified by researchers is that SRIs do not impact performance at all (Auer, Schuhmacher 2016; Ceu Cortez, Silva et al. 2009; Renneboog, Ter Horst et al. 2011) and that the acquirer's SR-level does not influence the market reaction (Aktas, de Bodt et al. 2011). For example, researchers claim that SRIs do not reduce cost of capital (Auer, Schuhmacher 2016) as the lower risk is not reflected in the premium (Lee, Humphrey et al. 2010).

2.2.2 M&A Performance

This study suggests that SRIs should not only be subject to the fund literature, but also to the corporate investment literature. Therefore, factors influencing post-deal performance are discussed.

An M&A is a major investment for a company (Aktas, de Bodt et al. 2011; Deng, Kang et al. 2013) as it increases the asset base significantly and therefore it has a major accounting impact (Amel-Zadeh, Meeks et al. 2016). For the scope of this research however, the focus is shifted from the accounting perspective to financial market returns. In order to evaluate the results found in this research, it is important to consider performance characteristics of M&As.

2.2.2.1 M&A Performance

Researchers found that in the years following an acquisition, M&As have a negative or no impact at all on stock performance (Cartwright, Schoenberg 2006) and financial performance (King, Dalton et al. 2004), although the impact varies substantially (Capron, Pistre 2002). Deals tend to be welfare reducing in general (Gugler, Mueller et al. 2003) which is sometimes due to the fact that created value cannot be captured (Capron, Pistre 2002). However, returns tend to differ between short-term and long-term perspectives (Gregory, McCorriston 2005) where no significant abnormal returns were found in the short-run (Uddin, Boateng 2009; Gregory 1997). In the long-run, the benefit is also questionable (Cartwright, Schoenberg 2006) and returns are found to be significantly negative (Gregory 1997) or at least not better than zero on average (Gregory, McCorriston 2005).

2.2.2.2 Included Factors Influencing Performance

These factors are claimed to influence performance which is why they were included as control variables with proxies in the regression analysis, aligned with previous research.

The volatile results found by researchers are due to the fact that the performance of M&As is dependent on various interdependent variables (Haas 2015). This is crucial to consider when analyzing the results. 70-90% of all acquisitions fail (Christensen, Alton et al. 2011) and researchers have identified different critical factors that will be control variables in this study. Table 2 introduces the theoretical foundation of the control variables used in this study.

Table 2 - Theoretical introduction of the control variables

Control Variable	Previous Research and Explanation
Price	The **price** has an impact and tends to be overestimated (Donker, Zahir 2007; Roll 1986) and the bidding premium is claimed to be a miscalculation of the bidder (Ghosal, Sokol 2013). This overestimation increases the hurdles of a successful deal (Dănescu 2011). Although the hubris hypothesis does not explain all takeovers, it is widely supported among researchers as prior acquisitions have been completed with questionable high premiums paid for some targets (Gaughan 2015, Roll 1986).
Size	The **size** of the deal (Sudarsanam, Holl et al. 1996), as the relative size (comparatively small target) eases the integration of the target (Tetenbaum 1999), is claimed to matter as well although other researchers found no support for this claim (Uddin, Boateng 2009; Child, Pitkethly et al. 1999).
Payment method	The **payment method** matters as cash offers seem to outperform stock offers (Uddin, Boateng 2009) while equity offers are significantly negative (Gregory 1997). Other researchers found that the differences are not statistically significant (King, Dalton et al. 2004).
Bid nature	Another critical success factor is claimed to be the **bidding form**. Hostile bids are claimed to result in a higher return (Cartwright, Schoenberg 2006; Gregory, McCorriston 2005) and agreed bids are superior (Gregory 1997).
Geographical differences	**Geographical differences** have an impact on the performance. For example, North American companies are found to outperform European firms due to differences in legal standards (Gregory, McCorriston 2005) and the level of protection among corporate control leading to higher agency costs (Uddin, Boateng 2009). Others found no significant impact of the acquirer's nationality (Child, Pitkethly et al. 1999; Gugler, Mueller et al. 2003). Cross-border mergers however seem to suffer from the cultural clash when it comes to the integration (Tetenbaum 1999) because organizational cultures seem to conflict (Banal-Estañol, Seldeslachts 2011). However, even these results appear to be mixed (Cartwright, Schoenberg 2006).
Industry relatedness	The degree of **relatedness** of the **industries** is influencing the success rate. Related deals perform better (Uddin, Boateng 2009) and horizontal acquisitions tend to increase the market position (Child, Pitkethly et al. 1999). Although some companies benefit from the diversification most of the time, benefits are not captured (King, Dalton et al.

2004) and sales are more significantly reduced compared to horizontal transactions (Gugler, Mueller et al. 2003). Negative announcement effects are seen when the acquirer engages in an agency motivation such as unrelated diversification (Morck, Shleifer et al. 1990). Therefore, if a company announces a deal of a SR-target where the deal is seen as an unrelated diversification strategy, the firm's stock price may fall drastically and managers may be looking to build an empire (Stein 2001).

2.2.2.3 Excluded Factors Influencing Performance

These factors could not be included within the scope of this study due to data availability or common research practice. Thus, they can be seen as limitations.

The motives of management are sometimes questionable (Cartwright, Schoenberg 2006) as managers want to, in line with the entrenchment theory, maximize their own utility (Uddin, Boateng 2009). Deals may therefore be used to increase their status, power, compensation (Donker, Zahir 2007) and reputation (Aktas, de Bodt et al. 2011). According to corporate finance theory, management has an incentive to exaggerate the quality of projects for entrenchment reasons or due to the motive of empire-building (Ogden, Jen et al. 2003). Further, management might not be equipped enough to manage the deal (Kavanagh, Ashkanasy 2006) and thus unable to fully assess the value and risks associated with it (Clayton 2010). During the integration process, many pitfalls are faced (Bartels, Douwes et al. 2006), (Tetenbaum 1999) and the process is often inappropriately managed (Cartwright, Schoenberg 2006). In addition, cultural fit is a common drawback as the cultural clash is sometimes too strong (Tetenbaum 1999). Social responsibility is assumed to be very closely linked to company culture and its norms and values (Clayton 2010). However, arising internal conflicts are often underestimated (Banal-Estañol, Seldeslachts 2011) and might be even more crucial for companies with different CSR-levels. Open communication is therefore essential (Child, Pitkethly et al. 1999; Dick, Ullrich et al. 2006) and assurance that messages sent are perceived in the right way (Clayton 2010) is important. Researchers moreover found that change management is a critical success factor (Dick, Ullrich et al. 2006) which is however very difficult to measure and therefore not included in the regression.

2.2.3 Combining SRIs and the M&A Context

SRIs are found to be value-creating in respect to M&As as returns appear to be higher with a high level of a target's social- and environmental performance. The gain is claimed to be substantial in economic terms (Aktas, de Bodt et al. 2011). This supports the findings that

high-CSR acquirers realize higher returns on the deal announcement but also in respect to long-run operating performance and stock returns (Deng, Kang et al. 2013). The value of CSR seems not fully incorporated in the price at the announcement date, but it leads to an improved long-term stock price (Deng, Kang et al. 2013).

An argument in favor of outperformance due to a SRI is that mergers by high-CSR firms appear to take less time until completion and they also appear to have a lower failure rate (Deng, Kang et al. 2013). Further, researchers found that SR-targets tend to result in higher synergy effects (Aktas, de Bodt et al. 2011). Another reason why M&As should be influenced by sustainability is that their success heavily depends on the support from a broad range of stakeholders, especially when it comes to the integration (Deng, Kang et al. 2013). High-level CSR buyers appear to have the tendency to perform deals that benefit other stakeholders as well which is proven to support value creation in the end (Deng, Kang et al. 2013). Another finding indicates that the SR-awareness of the acquirer increases as a result of a SR-acquisition (Aktas, de Bodt et al. 2011) which could imply a positive influence on stakeholders of the acquirer.

2.3 Hypotheses

Hypotheses were derived based on the theories and findings and are presented in this chapter.

If investments in SR-firms are only done because management has excess cash and wants to gain a personal advantage instead of realizing strategic synergies, then there should be a negative impact on performance when the SR-level of the target is high. This would be value-destroying since the excess funds could have been used for higher NPV-projects or paid out to shareholders (Jensen 1986). Thus, this theory does not support a better performance when acquiring a high-level ESG-target.

The contract theory supports that an acquisition of a SR-target has a positive impact as stakeholders put more efforts and resources into the company due to increased satisfaction. In addition, stakeholders trust that the implicit contract will be held up by the company. There is further a claim that investors are willing to pay a premium on ethics (Renneboog, Ter Horst et al. 2011). The premium required should be lower for high-level SR-firms due to decreased risk (Lee, Humphrey et al. 2010) Thus, the following hypothesis is derived from previous research (Aktas, de Bodt et al. 2011; Deng, Kang et al. 2013).

Hypothesis 1: A socially responsible acquisition results in a better post-deal performance than a non-socially responsible acquisition.

As shown by M&A theory, the performance following a deal event is influenced by many different factors, so the hypothesis can be raised that a high-level SR-target has a very low influence on performance and the effect might be disturbed by other characteristics.

Hypothesis 2: The effect of a socially responsible acquisition is disturbed by other factors and is therefore low.

The starting point for the third hypothesis is that firms appear to value ethical investments higher than high-return investments (Deng, Kang et al. 2013). Although, evidence so far only shows that high-CSR firms tend to invest in high-CSR targets (Deng, Kang et al. 2013), this study claims that low-SRI firms should invest in high-level SR-targets based on the increased awareness of ethics by investors (Galema, Plantinga et al. 2008). This implies that there should be the intention of low-level SR-companies to become higher SR-classified. Therefore, being more socially responsible might develop into a takeover motive. An improved SR-classification may be achieved by acquiring a high-level SR-target as the article of Aktas, de Bodt et al. (2011) claims that the acquirer learns from the social responsibility practices of the target. The increased sustainability awareness also means that SRIs in the M&A field should gain importance over time. Combining these rationales leads to the third hypothesis in this study.

Hypothesis 3: The interest in socially responsible targets increases and low-level socially responsible acquirers seek to invest in high-level socially responsible targets.

3. Methodology

In order to improve the validity of this research, the chosen research design and the different steps undertaken are explained thoroughly in this chapter (Burns, Grove 2001).

3.1 Research Strategy

This study is based on an event study. Past literature was reviewed using academic papers, books, regulations and reports derived from Google Scholar and LUBsearch in order to gain a general understanding. The data for the regression and other analyses was collected using the Thomson Reuters EIKON and the Bloomberg Terminal.

3.1.1 Event Study

As mentioned, the selected business research methodology is an event study which is among the predominant study techniques in order to evaluate the impact of events (Cable, Holland 1999) such as M&As (Aktas, de Bodt et al. 2011; Deng, Kang et al. 2013). The event study is favorable as the effect of an event is immediately reflected in stock prices when the theory of efficient markets holds. Since an event study can take place over a rather short period of time, this is seen as a suitable research methodology concerning this study (MacKinlay 1997).

3.1.1.1 Event Definition and Event Window

The purpose of this study is to test if an acquisition of a SR-target results in higher returns for the acquirer. In the first step, the event day was identified as the announcement day which is common in other research (Aktas, de Bodt et al. 2011; Deng, Kang et al. 2013). This was used as it is claimed to have the highest information content and thereby the greatest reaction; hence this is seen as the correct event date for this type of M&A research (Dodd, 1980 as cited in University of St. Gallen 2018). Next, the event window was defined. In accordance with many other M&A studies (Aktas, de Bodt et al. 2011), a three day window around the announcement date was considered. Day -1 is the day before the announcement, day 0 is the day of the announcement and day 1 is the day after the announcement. The same logic applies to the other event windows used. The intention by looking at five different event windows is to improve the results by choosing the event window best suited for the data. Short-term event windows are reasonable when assuming that the market is efficient and new information is immediately incorporated into the stock price (Ogden, Jen et al. 2003). Further, it was found

that short-term windows are statistically the most reliable (Andrade, Mitchell et al. 2001). In order to use the correct event window, it is decided to look at the five different short-term alternatives illustrated in Table 3.

Table 3 - Different event windows considered

Event Window	Scope
Event window 1	-1 days to +1 days
Event window 2	-2 days to +2 days
Event window 3	-3 days to +3 days
Event window 4	-4 days to +4 days
Event window 5	-5 days to +5 days

Furthermore, using longer windows reduces the effects of potentially leaked information prior to the deal and overreactions by the market after the deal. It also increases the risk that other events distort the effects on the transaction. This tradeoff was considered during the selection of event window.

3.1.1.2 Selection Criteria

The following criteria available in Thomson Reuters EIKON and the Bloomberg Terminal were used for the sample:

- Transaction type: M&A
- Deal status: completed
- Total deal value: > 500,000 USD
- Company type: public
- Announcement date: 01.01.2003 – 31.03.2018

The selected targets and acquirers are publicly traded in order to collect the required share prices. The total deal value was set in order to collect deals with an impact on performance and to get abnormal returns different from zero. Further, the targets need to have a specific size in order to have an assigned ESG-score. As previously outlined, the ESG-score allows for comparison between different countries due to its rigorous standards and is thus seen as a relevant measure for this study (Auer, Schuhmacher 2016; Thomson Reuters ESG Scores. 2018). Unfortunately, the score is not available for all companies and only available from 2002 and onwards. This is why it was not possible to include deals completed prior to

01.01.2003 as the sustainability rating from one year prior to completion was used in the regression.

In the next step, the international ESG-scores were applied to all targets. This reduces the sample size to 172 deals. Companies with no stock price information available in Thomson Reuters Datastream for the respective event window were removed. Missing variables were manually derived from Datastream when available in order to avoid bias. This gives a total sample of 122 deals. Furthermore, outliers among variables were removed to avoid undue impacts on the estimates. This step is explained in more detail in the Empirical Results section. The total corrections reduced the sample to 118 observations.

3.1.1.3 Data Collection

To avoid an impact by economic up- or downturns (Aktas, de Bodt et al. 2011), the longest possible time frame was used when collecting the data. Due to the limited availability of deals from only one source, deals from Thomson Reuters EIKON and the Bloomberg Terminal were combined in order to reach the critical sample size. Stock prices were collected from Thomson Reuters Datastream. As the sample is international and since the acquirers are located in different countries, stock market indices were gathered from Datastream for the respective countries of the acquirers and used as proxies. The indices were used following the research of Aktas, de Bodt et al. (2011) where applicable. The indices per country are shown in Table 4 as well as the number of acquirers and targets per country.

Table 4 - Stock market indices used per country

Country	# Acquirers	# Targets	Stock Market Index	Currency
Austrailia	1	2	ASX ALL ORDINARIES	USD
Austria		2		
Belgium	1	1	BEL 20	USD
Brazil		1		
Canada	7	2	S&P/TSX COMPOSITE INDEX	USD
Chile	1	2	CHILE SANTIAGO SE GENERAL (IGPA)	USD
China	5	4	SHANGHAI SE A SHARE	USD
Finland		2		
France	12	9	SBF 120	USD
Germany	7	5	DAX 30 PERFORMANCE	USD
Greece	1	2	ATHEX COMPOSITE	USD
Hong Kong	4	5	HANG SENG	USD
Iceland	1		OMX ICELAND ALL SHARE	USD
India	4	6	S&P BSE (SENSEX) 30 SENSITIVE	USD
Indonesia	1	1	IDX COMPOSITE	USD
Israel	1		ISRAEL TA 125	USD
Italy	8	6	FTSE MIB INDEX	USD
Japan	13	11	TOPIX	USD
Luxembourg	1	1	LUXEMBOURG SE LUXX	USD
Mexico	1	1	MEXICO IPC (BOLSA)	USD
Netherlands		3		
Norway	2	1	OSLO SE OBX	USD
Philippines	2	2	PHILIPPINE SE I(PSEi)	USD
Portugal		1		
Russian Federation		1		
Singapore		2		
South Korea	5	5	KOREA SE COMPOSITE (KOSPI)	USD
Spain	13	8	IBEX 35	USD
Sweden	2	2	OMX STOCKHOLM 30 (OMXS30)	USD
Switzerland		1		
Taiwan	6	2	TAIWAN SE WEIGHED TAIEX	USD
Thailand	1	1	BANGKOK S.E.T. 50	USD
Turkey		4		
United Arab Emirates	2		ADX GENERAL	USD
United Kingdom	6	4	FTSE ALL SHARE	USD
United States	10	18	S&P 500 COMPOSITE	USD
Grand Total	**118**	**118**		

This table shows the sample by country and incorporates the local stock market index used in the study where the local currency was converted into USD at the spot exchange rate. # Acquirers and # Targets show, respectively, the number of acquirers and targets per country. The sample covers deals completed over the period 2003-2018 and is derived from Thomson Reuters EIKON and the Bloomberg Terminal.

3.1.2 Description of Variables

The aim of this study is to test if a high ESG-score of the target has an impact on the Cumulative Abnormal Return (CAR) and thereby on the performance of an M&A deal. In order to test this, a cross-sectional regression analysis is performed testing the respective ESG-score of the target as a variable. In order to reduce the omitted variables bias when analyzing the effects of a socially responsible target, various control variables are included (Deng, Kang et al. 2013). The control variables are selected in accordance with M&A theory

and are fairly aligned with the variables used in the previous research of Aktas, de Bodt et al. (2011) and Deng, Kang et al. (2013). The selected variables and their calculations are described and justified in the following section to provide a thorough understanding of the regression used in this study.

Table 5 - Variables used by previous research

Type of Variable	Variable	Research Using This Variable
Dependent variable	Cumulative Abnormal Return (CAR)	(Aktas et al. 2010; Deng et al. 2013)
Variable of interest	Year-end ESG-score of target one year prior to deal announcement	
Control variables	Relative size	*(Aktas et al. 2010; Deng et al. 2013)*
	Dummy cross-border transaction	*(Aktas et al. 2010)*
	Dummy related industry	*(Aktas et al. 2010; Deng et al. 2013)*
	Dummy payment method	*(Aktas et al. 2010; Deng et al. 2013)*
	Dummy premium	*(Deng et al. 2013)*
	Natural logarithm of deal value	*(Aktas et al. 2010; Deng et al. 2013)*
	Dummy control transaction	*(Aktas et al. 2010)*
	Leverage	*(Deng et al. 2013)*
	Dummy deal nature	*(Deng et al. 2013)*

This table outlines the selected variables included in the cross-sectional regression analysis. The column to the right displays researchers who used the respective variables in previous studies. However, the grey dummies are later excluded due to skewness in the underlying data sample.

3.1.2.1 Dependent Variable

The dependent variable is the Cumulative Abnormal Return (CAR). The calculation and definition of it are outlined in the following chapter.

Normal and Abnormal Returns

This study is based on return models as they are claimed to be less flawed by econometric problems in comparison to price models (Kothari, Zimmerman 1995). The normal return needs to be determined. It is the return that would have been realized if the event would not have occurred. In line with other research (Aktas, de Bodt et al. 2011), a local stock market index return of the acquirer's country was used as a proxy in order to get the expected return. The abnormal returns can be identified by comparing this derived expected return with the actual return.

Calculation of the Dependent Variable

Return models are based on the assumption that current prices reflect somewhat public information on future expectations (Kothari, Zimmerman 1995). A return model was selected as it is used by many researchers (Aktas, de Bodt et al. 2011), circumvents different

accounting practices and avoids measurement errors that would have occurred if accounting returns were used (Cable, Holland 1999). The chosen model is therefore the Market Adjusted Return Model. It assumes a constant mean of the underlying stock over time (Ekholm, Svensson 2009). The model is claimed to present a similar result to the market model (Brown, Warner 1985) even though it does not include a risk component (MacKinlay 1997).

The actual return was derived from Thomson Reuters Datastream prices which were cross-checked with Yahoo Finance to ensure correctness. Datastream adjusts its prices for reissuances and dividends which mitigate bias. The latest daily closing price is the basis of the calculations. This was chosen due to a greater availability although an average of bid- and ask price is more favorable since the closing price reflects either the bid- or the ask price depending on the last trade of that day. The closing price might produce a biased result (Blume, Stambaugh 1983) as price changes could occur solely based on the bid-ask spread without a change in the underlying intrinsic value (Ekholm, Svensson 2009). However, the consequences of this pitfall are expected to be minor in this study as this is only non-trivial for small firms (Blume, Stambaugh 1983) and the sample mainly contains big firms.

Following the study of Aktas et al. (2011), the CAR is calculated based on a time period from a few days prior to the deal announcement to a few days after the announcement. The prior week day is used if the announcement day fell on a weekend.

To determine the expected- as well as the actual returns the formula below was used where $\mathcal{P}_1$ is the ending share price of the current day and $\mathcal{P}_0$ is the ending share price of the prior day:

$$\mathcal{R} = \ln(\mathcal{P}_1 \,/\, \mathcal{P}_0) \tag{1}$$

The natural logarithm (ln) function is claimed to account for smaller changes which is why it was used to calculate the return (Ekholm, Svensson 2009). Log-returns can be explained as continuously compounded returns where the frequency of compounding of the return is irrelevant. This further eases comparison of returns over different assets (Brooks 2014).

Calculation of Normal Returns

As previously explained, the model uses market indices as proxies for the expected returns:

$$\mathcal{R}(E)_{i_t} = \mathcal{R}_{M_t} \tag{2}$$

$\mathcal{R}(E)_{i_t}$ is the expected return on the stock price and is approximated based on the return of the respective acquirer's country index, denoted as $\mathcal{R}_{M_t}$, at a given period in time t.

Calculation of Abnormal Returns

Next, the abnormal return was calculated by subtracting the expected normal return from the actual return, which was derived from Datastream:

$$AR = \mathcal{R}_i - \mathcal{R}_M \tag{3}$$

AR is the abnormal return and $\mathcal{R}_i$ is the return of an individual firm which is reduced by the normal return approximated by the respective market return $\mathcal{R}_M$.

In order to calculate the CARs, the following formula was applied:

$$CAR = \sum_{t=-1}^{\tau=-1} AR_{i\tau} \tag{4}$$

Next, in order to identify the optimal event window, the existence of abnormal returns for the event window is checked. This is done using the T-test with the following null hypothesis:

$$H_0 : CAR_t = 0 \tag{5}$$

The hypothesis states that the mean of the CAR is equal to 0. A rejection of the hypothesis means that the abnormal returns are significantly different from 0, which means that the market reacted significantly to the respective announcement events. The test was performed using EViews and the underlying formulas for the test are the following:

$$t = \frac{\overline{CAR}(t_1, t_2)}{\sqrt{Var[\overline{CAR}(t_1 t_2)]}} \tag{6}$$

$$t = \frac{\overline{AR_t}}{\sqrt{Var[\overline{AR_t}]}} \tag{7}$$

3.1.2.2 Independent Variables

The independent variables are distinguished into variable of interest and control variables as presented in the following sections.

Variable of Interest

The variable of interest is the SR-measurement as the purpose is to answer Hypothesis 1, which states that M&As of high-level SR-targets should outperform takeovers of low SR-targets. In order to measure the level of social responsibility, the ESG-score was used. The score has been used in previous research to assess the level of social responsibility for SRI funds (Auer, Schuhmacher 2016; Utz, Wimmer et al. 2014; Wimmer 2012). Since the measurement has developed into an industry standard for evaluating CSR, it was considered a valid measure. The score ranges from 0-100% where the higher the score the better SR-rating the firm has achieved (Utz, Wimmer et al. 2014).

ESG_TARGET = Year-end ESG-score of target one year prior to deal announcement

Control Variables

Several control variables were used in congruence with previous research by Deng et al. (2013) and Aktas, de Bodt et al. (2011) reflecting acquirer- and deal-specific characteristics. This study uses a relatively broad set of control variables in order to reduce the omitted variables bias, but due to unobservable or unavailable omitted variables, the regression may still be endogenic (Deng, Kang et al. 2013). For instance, firms that are investing in high-level SR-targets could be firms with high-quality financial performance. However, additional control variables such as deal nature were added in order to further align the regression with theory and to aim for higher validity. Definitions of the different control variables identified in literature are outlined in Table 6.

Table 6 - Definition of control variables

Control Variable	Description	Equation
Relative size	Relative size is a common M&A control variable (Aktas, de Bodt et al. 2011; Deng, Kang et al. 2013) which fits into M&A theory suggesting that relative size matters (Tetenbaum 1999).	*RELATIVE_SIZE = Total deal value/Total assets of the acquirer*
Dummy	This variable addresses the findings suggesting that geographic	*DUM_CROSS_COUNT*

cross-border transaction	relatedness influences the post-deal performance (Uddin, Boateng 2009; Gregory, McCorriston 2005; Gugler, Mueller et al. 2003). The dummy also incorporates cultural fit to a certain extent which is difficult to classify and to measure into more detail.	*RY = 1 if the deal is domestic and 0 if the deal is cross-border*
Dummy related industry	This dummy tests if the industries in which the merging firms operate in are related. This is aligned with findings suggesting that industry relatedness is a critical factor for M&A performance (Uddin, Boateng 2009; King, Dalton et al. 2004; Gugler, Mueller et al. 2003).	*DUM_RELATED_INDU STRY = 1if the industries are classified as related and otherwise 0*
Dummy payment method	This variable accounts for the payment method which is claimed to have an influence on performance (Uddin, Boateng 2009; Gregory 1997).	*DUM_PAYMENT = 1 if the deal is a cash only deal and otherwise 0*
Dummy premium	This dummy intends to account for the price paid suggesting that theory holds and that managers exaggerate the premium paid. Thus, premiums are assumed to be unreasonable and miscalculated (Ghosal, Sokol 2013) because managers are unable to incorporate everything into their calculations (Clayton 2010) or it is simply due to overconfidence (Banal-Estañol, Seldeslachts 2011).	*DUM_PREMIUM = 1 if a premium is paid and otherwise 0*
Natural logarithm of deal value	The deal size is commonly used as a logged control variable among researchers (Aktas, de Bodt et al. 2011). It is the total value paid by the acquirer in million USD and accounts for deal-specific characteristics (Deng, Kang et al. 2013).	*LOG_DEAL_VALUE = Natural logarithm of the announced total deal value in million USD*
Dummy control transaction	This variable explains the percentage of the target firm owned by the acquirer prior to the transaction and tests if the acquirer already had control prior to the acquisition (owned more than 50% of the company). The measurement has also been used in other research of M&As in relation to SRIs (Aktas, de Bodt et al. 2011).	*DUM_CONTROL_TRA NSACTION = 1 if the acquirer had control over the target prior to the deal and otherwise 0*
Leverage	Leverage is a control variable widely used among researchers as it provides acquirer-specific characteristics about a firm's financial situation (Deng, Kang et al. 2013). According to theory, leverage is an indication of access to capital markets and thereby reveals the investment capacity of a firm (Ogden, Jen et al. 2003). This specific leverage ratio shows the total assets financed by creditors and was used due to data availability reasons.	*DUM_CONTROL_TRA NSACTION = 1 if the acquirer had control over the target prior to the deal and otherwise 0*
Dummy deal nature	This dummy accounts for the different bidding forms claimed to be of interest by researchers (Cartwright, Schoenberg 2006; Gregory 1997; Gregory, McCorriston 2005).	*DUM_DEAL_NATURE = 1 if the bid is hostile and 0 if the bid is friendly or neutral*

3.1.2.3 The Regression Model

This section covers an explanation of the final regression which was performed in the econometrics software program EViews. In the regression, α is the intercept and the different βs represent the coefficients. These parameters are estimated using the Ordinary Least Square (OLS) method which assumes linearity. The multivariate regression model shaping the basis of this study is set up as follows:

$$CAR = \alpha + \beta_1 ESG\_TARGET + \beta_2 RELATIVE\_SIZE + \beta_3 DUM\_CROSS\_COUNTRY \qquad (8)$$
$$+ \beta_4 DUM\_RELATED\_INDUSTRY + \beta_5 DUM\_PAYMENT$$
$$+ \beta_6 DUM\_PREMIUM + \beta_7 LOG\_DEAL\_VALUE$$
$$+ \beta_8 DUM\_CONTROL\_TRANSACTION + \beta_9 LEVERAGE$$
$$+ \beta_{10} DUM\_DEAL\_NATURE$$

Statistical Tests

Several tests are performed in EViews in order to fulfill the assumptions of OLS.

Zero Mean

According to theory, the average value of the error term equals zero when α is part of the regression, representing a constant intercept (Brooks 2002). Thus, since the mean of the error term is zero, the first assumption of the classic linear regression model holds.

Heteroskedasticity

Heteroskedasticity is the second hypothesis tested which evaluates if the variance of the errors is constant. There are various ways to statistically test for heteroskedasticity where White's (1980) general test for heteroskedasticity is used (Brooks 2014). Other options were considered but rejected due to the practicability of the popular White test. In order to account for heteroskedasticity in the data, the regression is performed using Huber-White-Hinkley heteroskedasticity consistent standard errors. This was chosen as it ensures robustness of the standard error estimates for heteroskedasticity. Further, this generates optimal results as it minimizes variance in the OLS estimators (Brooks 2014).

Normality

The sample was adjusted for some outliers in accordance with literature. First, an attempt was made to winsorize the control variables but it was decided to manually remove the most

extreme outliers since this yielded a better result in comparison. This procedure is further explained in the Empirical Results section. Since the sample size is relatively large, this suggests that one can assume normality for the population due to the central limit theorem (Brooks 2002). However, a normality test was performed confirming a relatively normal distribution with a non-significant Jarque-Bera value of 55.95.

Multicollinearity

The sample has to be tested for multicollinearity with the assumption that independent variables are not correlated. This assumption should hold when using the OLS method. Variables tend to be correlated but this is only acceptable to a certain extent. Beyond the critical value of 0.8, it is difficult to get an output with small standard errors and as a result, significance might not be easily reached (Brooks 2002). The variance-covariance matrix was therefore derived to test if the correlation is below the threshold of 0.8. In order to support the findings, auxiliary regressions were run where each independent variable is treated as dependent variable. Then it is tested if one of the auxiliary regressions yields a higher R-squared compared to the original model.

Autocorrelation

The Durbin-Watson statistic was tested in order to check for spatial autocorrelation. There cannot be series autocorrelation as the sample does not include a time series.

Linearity

As previously mentioned, the OLS model assumes linearity between the independent variable and the dependent variable. Ramsey's (1969) RESET Test was performed to check for linearity in the model and thereby validate the result. This is a common test to discover misspecification of functional form. It produces a second auxiliary regression with the original regression's dependent variable regressed on powers of the fitted values of the dependent variable, along with the explanatory variables from the original regression. The Ramsey RESET Test allows for the higher order powers of the fitted values to capture non-linearity (Brooks 2014).

3.2 Validity

This is a prominent criterion for evaluating business research which questions the integrity of the conclusions drawn from the research. There are several types of validity but for the purpose of this study, measurement-, internal- and external validity are examined (Bryman, Bell 2011).

3.2.1 Measurement Validity

It is crucial to consider the problem of measurement validity in the research as this incorporates whether or not the concept metric really measures the concept tested (Bryman, Bell 2011). Thus, the metric of measuring abnormal returns is used to test the impact of an acquisition of a SR-target, based on the target's ESG-score. Abnormal returns are a good measure as they are commonly used in research and therefore highly acknowledged. Further, the impact should be immediately visible in the stock price when assuming an efficient and unbiased market (Ogden, Jen et al. 2003).

3.2.1.1 Internal Validity

In this research one needs to question if the year-end ESG-score of target one year prior to deal announcement variable of interest has a causal impact on the dependent variable CAR. Internal validity is thereby tested to assure that the independent variable explains the variation identified in the dependent variable, and that it is not something else accounting for the causal relationship (Bryman, Bell 2011).

3.2.1.2 External Validity

External validity raises the question of whether or not the results of a study can be observed beyond the explicit context of the study itself (Bryman, Bell 2011). In this study, selection criteria and the issue of how M&A deals were selected to participate in the research (Bryman, Bell 2011) are previously outlined into detail.

3.3 Reliability & Replicability

The choice of methodology is closely related to the one of Aktas et al. (2011). This allows for a rather high degree of reliability as this research incorporates almost identical control variables, comparable independent- and dependent variables as well as reliable ESG-scores extracted from Thomson Reuters.

The reliability of the study is further strengthened by the decision to include data with a longer and more recent time horizon ranging from 01.01.2003 to 31.03.2018. This mitigates the risk of erroneous- or irregular data impacting the results. It also decreases the influence of economic up- and downturns which is criticized by researchers in the SRI field (Deng, Kang et al. 2013). In addition, previous research measured CARs for SR-M&As, which is the identical metric used in this study (Aktas et al. 2011). All the databases used are acknowledged and widely used by academic researchers in the field of finance, thus

enhancing reliability. The selection criteria applied by this study is clearly outlined which further enables replicability. Moreover, comparable results can be replicated due to the relatedness of this study and the Aktas et al. (2011) study. Table 7 summarizes the differences.

Table 7 - Differences to Aktas et al. 2010

	This Study	**Aktas et al. 2010**
Sample period	01.01.2003 - 31.03.2018	01.01.1997 - 01.01.2007
Sample size	118	106
SR-measure	ESG-scores	IVA ratings
Abnormal Return calculation	Adjusted Market Model	Market Model

3.3.1 SR-Characteristics of the Acquirers and Targets

In order to gain an in-depth understanding of the regression results the SRI proxy was analyzed in detail to gain a holistic perspective. To see if there is an improvement of the SR-level following the deal event, the acquirer's ESG-score was derived from the year before the acquisition as well as for the year after the acquisition. The purpose is thus not only to increase the understanding of the findings, but also to test the findings of Aktas, de Bodt et al. (2011) who claimed the existence of corporate learning from high-level SR-targets' practices.

Table 8 - Classification ranges for ESG-scores

Classification	**ESG-score Range**
Low	0% - 50%
Medium	51% - 70%
High	71% - 100%

The classifications used in this study were set in ranges as displayed in Table 8. The sample was slightly shifted upwards as the lower end of the ESG-score range was less populated than the upper range. It was however attempted to create three classification samples containing a comparable number of observations. In addition, a time-related analysis was performed by creating a graph with trend lines in order to get implications about future trends.

4. Empirical Results

The empirical findings are outlined in the following chapter. First, performance is evaluated followed by a presentation of the regression which shows the influencing factors. At the end of the chapter, an analysis of the rationale behind which acquirers invest in high-level SR-targets is presented as well as the impact of such an M&A on the future development of the SR-classification.

4.1 SR-M&A Performance
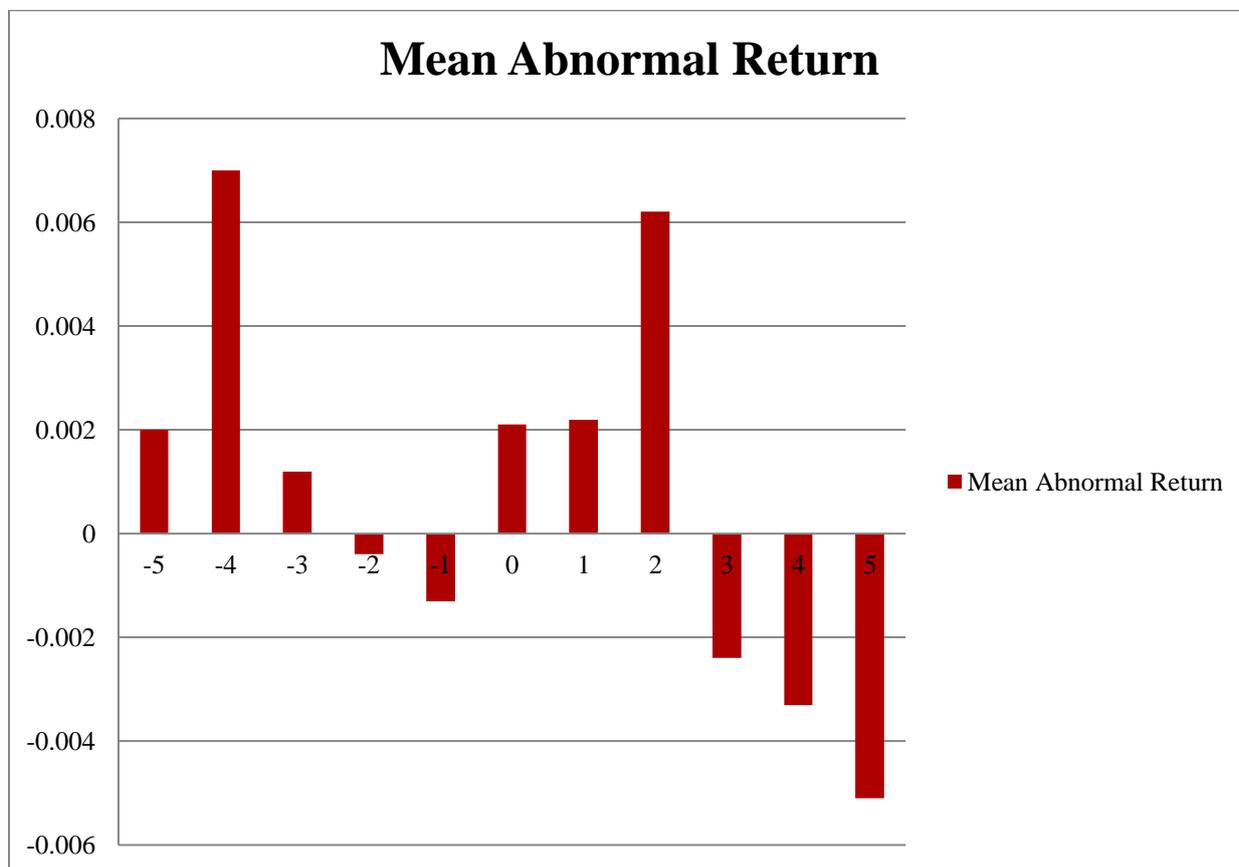
**Figure 3 - Mean Abnormal Return per day**

Figure 3 shows the value creation per day of the deal. It is obvious that the market reacts very positively prior to the event and then slightly adjusts its reaction two days before the event. On the event day and the following two days, the reaction is again positive while it becomes very negative again three days after the announcement. However, it is important to

keep in mind that the reaction of the market is solely based on expectations and the actual value is not captured yet. Further, the market reaction is not significant for all days.

Table 9 - Overview of Abnormal Returns

Event Day	Average Abnormal Return	p-value
-5	0.0020	0.09
-4	0.0070	0.03
-3	0.0012	0.39
-2	-0.0004	0.81
-1	-0.0013	0.49
0	0.0021	0.22
+1	0.0022	0.42
+2	0.0062	0.01
+3	-0.0024	0.19
+4	-0.0033	0.21
+5	-0.0051	0.01
CAR1	0.0106	0.01
CAR2	0.0068	0.12
CAR3	0.0031	0.52
CAR4	0.0095	0.06
CAR5	0.0119	0.01

Table 9 shows the average abnormal return per event day with the respective probability. The low p-values for five- and four days prior to the event day show that the market starts to react. The significant abnormal returns two- and five days after the event day show that the market needs time to react to the announcement. Thus, the short-term event window from one day prior to the announcement to one day after the announcement is too narrow as both five days prior to- and after the event show abnormal returns significant on a 10% level and a 1% level respectively.

Further, the CAR for the five days event window appears to be significant and the five day event window is therefore used. The five day event window is the most common choice in research (Oler, Harrison et al. 2007). A longer event window was not selected as a larger event window increases noise as other factors are then incorporated into the share price leading to a biased regression outcome. However, regressions for the shorter event windows were performed as well in order to support or challenge the findings of the -5 to +5 event window.

Next, the T-test is used in order to test if the CARs are different from zero for the chosen event window (-5 to +5). The test results in a mean of 0.01 for the sample showing a slightly

positive abnormal return for the event days. Thus, this is highly significant on a 5% level. The standard deviation of 5.2% further indicates that the returns are relatively volatile. Table 10 shows all relevant figures.

Table 10 - Results of the T-Test

Included observations	118
Sample mean	0.0119
Sample standard deviation	0.052
T-statistic value	2.5
T-statistic probability	0.014
Minimum CAR	-12.4%
Maximum CAR	+22.7%

The null hypothesis can be rejected which implies that the CARs of the sample are significantly different from zero and the regression has validity.

4.2 Regression

First, adjustments and the statistical testing are presented to illustrate how the model developed into the final regression.

4.2.1 Analysis of the Variables

In order to reach a better understanding of the sample and to identify potential problems, the variables are analyzed in this chapter using descriptive statistics.

Table 11 - Descriptive statistics dummy variables

	Deal Nature		Payment Method		Related Industry		Cross-border Transaction		Control Transaction		Premium	
	0	**1**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**1**
2005	2		1	1		2		2	2		2	
2006	7		6	1	3	4	2	5	7		3	4
2007	12		8	4	5	7	6	6	11	1	4	8
2008	7		4	3	3	4	3	4	7		3	4
2009	6		4	2	3	3	4	2	5	1	4	2
2010	4		2	2	4		4		4		1	3
2011	8	2	6	4	4	6	6	4	9	1	3	7
2012	7		5	2	5	2	5	2	6	1	4	3
2013	10		4	6	4	6	5	5	10		3	7
2014	10		8	2	4	6	5	5	9	1	7	3
2015	12		7	5	7	5	7	5	12		3	9

2016	12		5	7	7	5	6	6	12		3	9
2017	14		6	8	7	7	9	5	11	3	2	12
2018	5		1	4	1	4	2	3	3	2		5
Grand total	116	2	67	51	57	61	64	54	108	10	42	76

Table 11 shows the obvious skewness of the deal nature dummy. Only 2 out of 118 observed deals in the sample are hostile. Thus, this dummy variable has no explanatory power and was therefore not included further in the regression. This unfortunately leads to a loss of generality as there is no other way to circumvent this problem. The dummy control transaction was excluded for the same reasons. 108 out of 118 transactions are control transactions which limits the explanatory power as the dummy is remarkably skewed.

4.2.1.1 Removing Outliers

The control variables are presented in a scatter plot to enhance validity. This helps to clearly define the outliers that were removed.
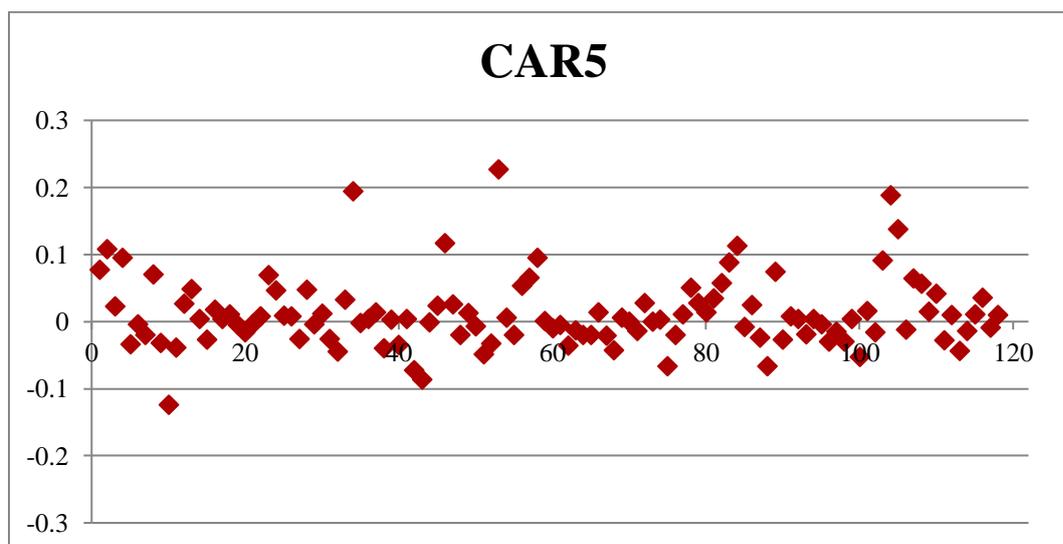
Figure 4 - CAR5 scatter plot showing the returns as percentages of the full dataset

It is not possible to identify any clear outliers in Figure 4.
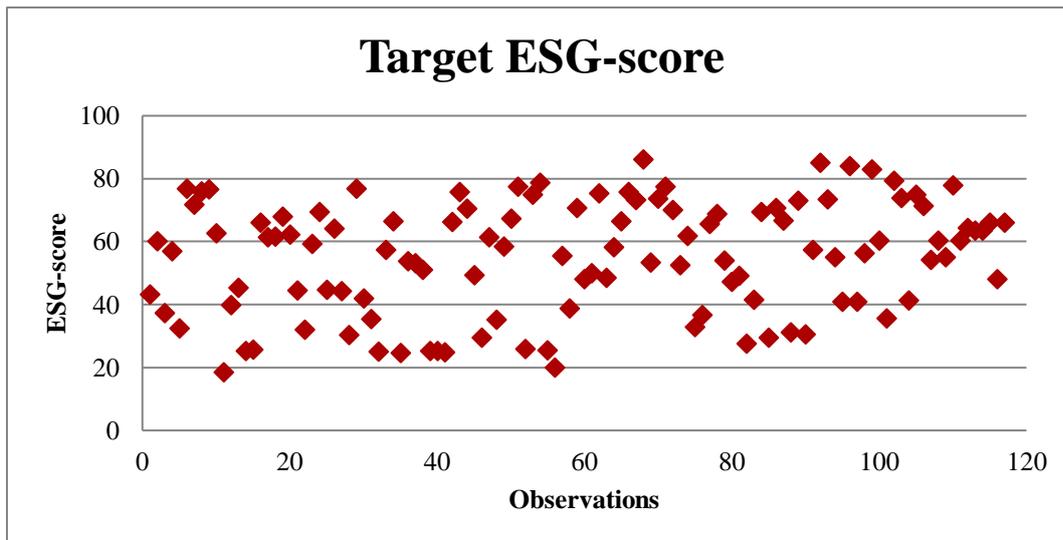
Figure 5 - Target ESG-score scatter plot

Figure 5 shows no significant outliers and no removals were necessary.
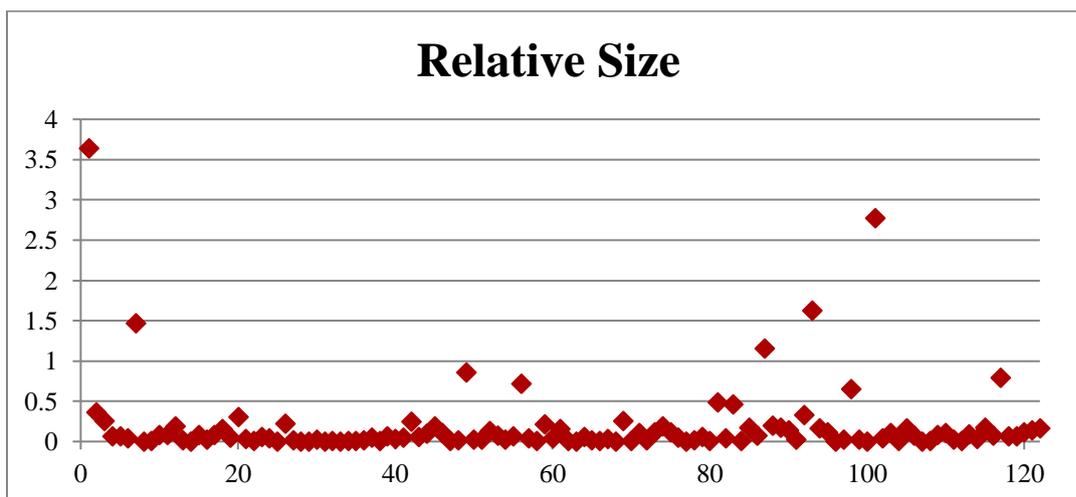
Figure 6 - Relative size scatter plot

The relative size has two major outliers which were removed in order to avoid undue impacts.
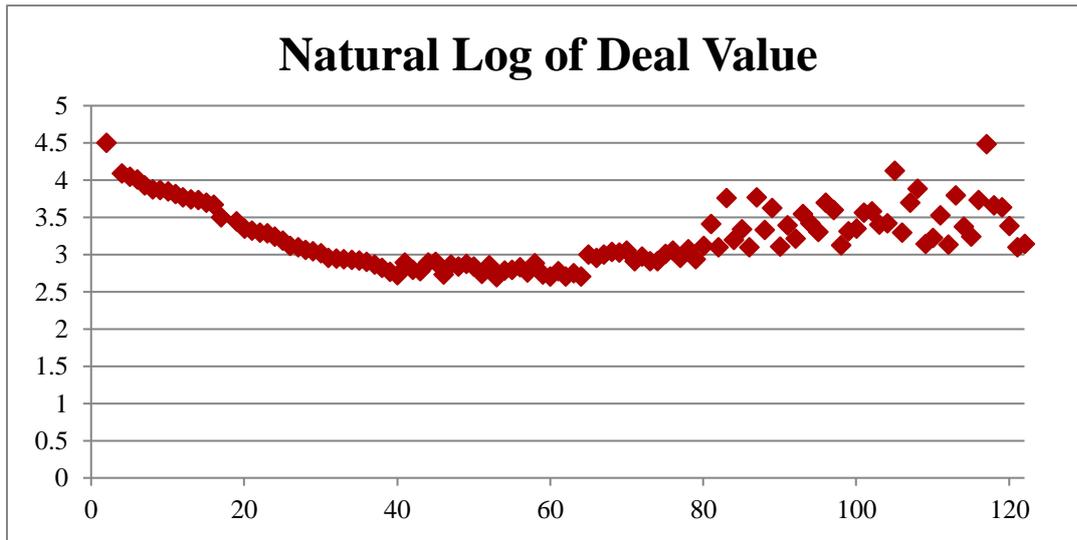
Figure 7 - Deal size scatter plot

Figure 7 of the logged deal value shows no clear outliers and no removals were necessary.
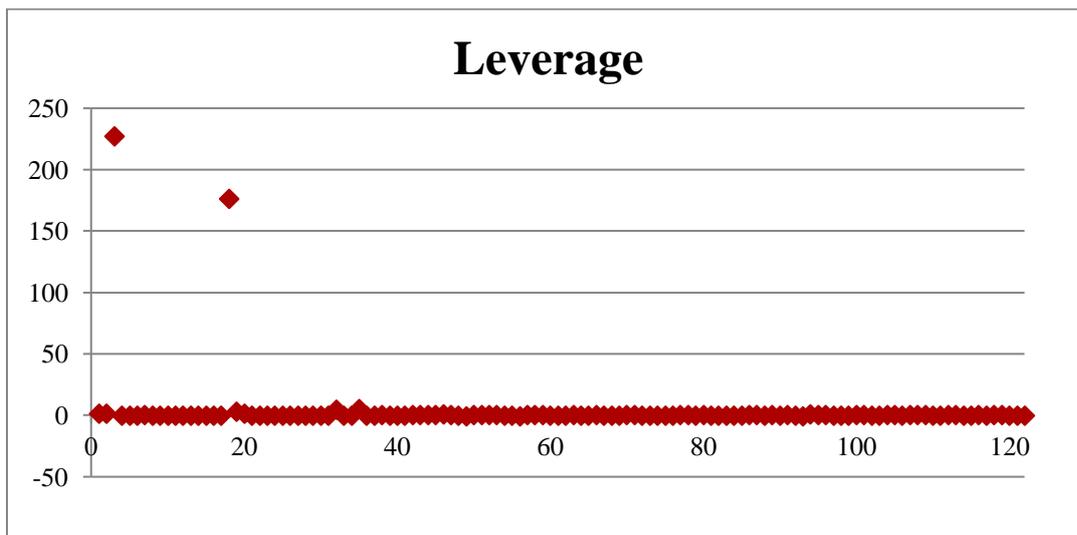
Figure 8 - Leverage scatter plot

As there are two clear outliers, these were removed from the sample.

In total, four observations were removed which are shown in Table 12.

Table 12 - Removed outliers

Announcement Date	Acquirer	Target
11.04.2007	Acciona SA, Enel SpA	Endesa SA
21.06.2010	Biovail Corp	Valeant Pharmaceuticals International Inc
20.04.2015	SK Holdings Co Ltd	SK Holdings Co Ltd/Old
13.01.2016	Investor Group, Brookfield Renewable Partners LP	Isagen SA ESP

There is a trade-off between the benefits of removing the observations and the loss of information. However, this study considers the lost information less critical than the undue impact on parameter estimates which would be caused by the outliers. Thus, the total sample for the final regression contains 118 observations.

4.2.1.2 Statistical Testing

There is moreover a problem of reverse causality which is common among regressions of returns (Krüger 2015) which was previously discussed in related literature (Aktas, de Bodt et al. 2011; Deng, Kang et al. 2013). The issue discussed is that a company investing in sustainability has good financials and therefore one cannot justify that an investment in sustainability results in good financials (Deng, Kang et al. 2013). However, this study looks at the sustainability ratio of the target but on the stock price of the acquirer. Thus, reverse causality is circumvented. However, the problem of endogeneity bias cannot be fully eliminated due to unobservable omitted variables (Deng, Kang et al. 2013).

As previously outlined, the regression was tested for heteroskedasticity, normality, multicollinearity, autocorrelation and linearity. As financial models are commonly suffering from heteroskedasticity, the regressions were run with the Huber-White-Hinkley test. The normal distribution was tested using the Jarque-Bera value. This value implies a weaker normality but based on the central limit theorem, one can assume normality due to the relatively big sample size. Further, the variance-covariance matrix does not show any indication of multicollinearity and there is no evidence of autocorrelation by the Durbin-Watson statistic test. The Ramsey RESET Test was performed in order to assure linearity which further validates the regression as the hypothesis of incorrect specifications can be rejected. Thus, the regression is linear and the overall final regression is statistically robust.

4.2.2 Final Regression

The final regression is the following:

$$CAR = \alpha + \beta_1 ESG\_TARGET + \beta_2 RELATIVE\_SIZE + \tag{9}$$
$$\beta_3 DUM\_CROSS\_COUNTRY + \beta_4 DUM\_RELATED\_INDUSTRY +$$
$$\beta_5 DUM\_PAYMENT + \beta_6 DUM\_PREMIUM + \beta_7 LOG\_DEAL\_VALUE +$$
$$\beta_8 LEVERAGE$$

The regression estimations are presented in Table 13.

Table 13 - Estimations of the final regression

	CAR5	
Variable	*Coefficient*	*Probabaility*
C	-0,0020	0,97
ESG_TARGET	-0,0004	0,08
RELATIVE_SIZE	0,0142	0,65
DUM_CROSS_COUNTRY	0,0032	0,73
DUM_RELATED_INDUSTRY	0,0023	0,81
DUM_PAYMENT	0,0102	0,31
DUM_PREMIUM	0,0081	0,42
LOG_DEAL_VALUE	0,0036	0,59
LEVERAGE	-0,0087	0,04
R-squared	0,07	

The only statistical significance among the variables is given for the variable of interest; the ESG-score of the target. The control variables do not show statistical significance which explains the relatively low R-squared. However, such low significance and low R-squared are common in M&A research. The model has low economic power although it is statistically robust. The low economic explanation power is further supported by the lack of significance of the F-test indicating that the model does not fit the data better compared to a model without independent variables. However, the model can still indicate some trends that are analyzed in further detail in the following section.

4.2.3 Supporting Regressions

In order to support or question the findings, the regressions for the other event windows were performed and tested as well.

Table 14 - Estimations of the alternative event windows

	CAR1		CAR2		CAR3		CAR4	
Variable	Coefficient	Probability	Coefficient	Probability	Coefficient	Probability	Coefficient	Probability
C	-0,0149	0,74	-0,0032	0,95	0,0023	0,96	-0,0215	0,62
ESG_TARGET	-0,0005	0,02	-0,0004	0,07	-0,0005	0,09	-0,0004	0,20
RELATIVE_SIZE	0,0203	0,39	0,0311	0,28	0,0104	0,61	0,0108	0,61
DUM_CROSS_COUNTRY	0,0063	0,42	-0,0022	0,79	-0,0003	0,98	-0,0045	0,67
DUM_RELATED_INDUSTRY	0,0068	0,39	0,0091	0,31	0,0065	0,53	-0,0007	0,95
DUM_PAYMENT	0,0036	0,69	0,0070	0,47	-0,0015	0,89	-0,0012	0,92
DUM_PREMIUM	0,0046	0,57	-0,0002	0,99	0,0059	0,59	0,0023	0,84
LOG_DEAL_VALUE	0,0050	0,42	0,0029	0,65	0,0026	0,65	0,0071	0,23
LEVERAGE	0,0000	1,00	0,0002	0,96	0,0005	0,94	-0,0032	0,64
R-squared	0,09		0,08		0,04		0,04	

It is important to mention that the regression using CAR2 as dependent variable shows misspecifications and a linearity problem. The regression using CAR3 indicates the best fit among the supporting regressions as it has the highest R-squared. In addition, the probability of the F-statistic shows significance which indicates that the model is improved by using the modeled independent variables, compared to just using a model with only the intercept.

4.3 Connecting Social Responsibility, Target Selection and SR-Performance

To increase the understanding of the findings, an analysis was performed concerning which acquirers invest in which type of targets from a social responsibility perspective.

4.3.1 ESG-score Differences – Acquirer vs. Target

Table 15 shows the average, standard deviation, minimum and maximum ESG-score for both acquirers and targets per sample. Thereby, it compares the ESG-score of the target at year-end before the deal with the ESG-score of the acquirer at year-end before the deal as well as the year-end ESG-score of the acquirer after the deal.

Table 15 - ESG-information for acquirers and targets

	Target Pre-deal	Acquirer Pre-deal	Acquirer Post-deal
Sample size	118	66	70
Average	55.25	64.68	64.80
Standard deviation	17.62	19.04	19.14
Minimum	18.54	15.54	15.94
Maximum	86.17	95.85	94.07

It is obvious that the average improvement of the ESG-score is close to zero for the acquirer. The target sample has a lower average ESG-score compared to the acquirers. However, the standard deviation is lower as well which indicates that the sample is less deviating from the mean in comparison.
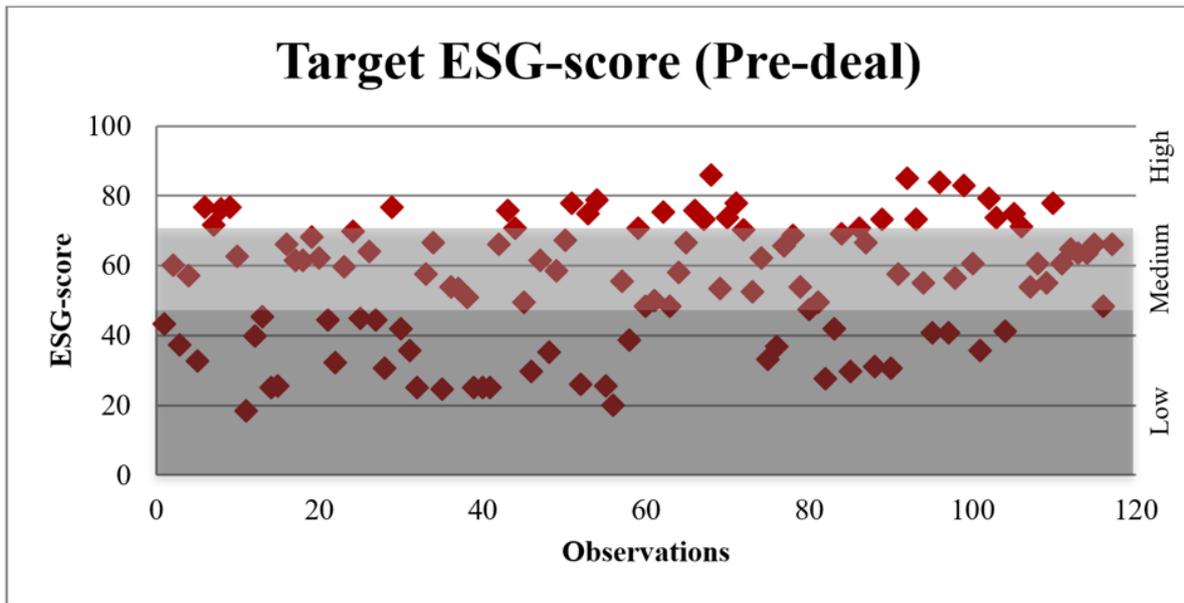
**Figure 9 - ESG-scores target pre-deal**
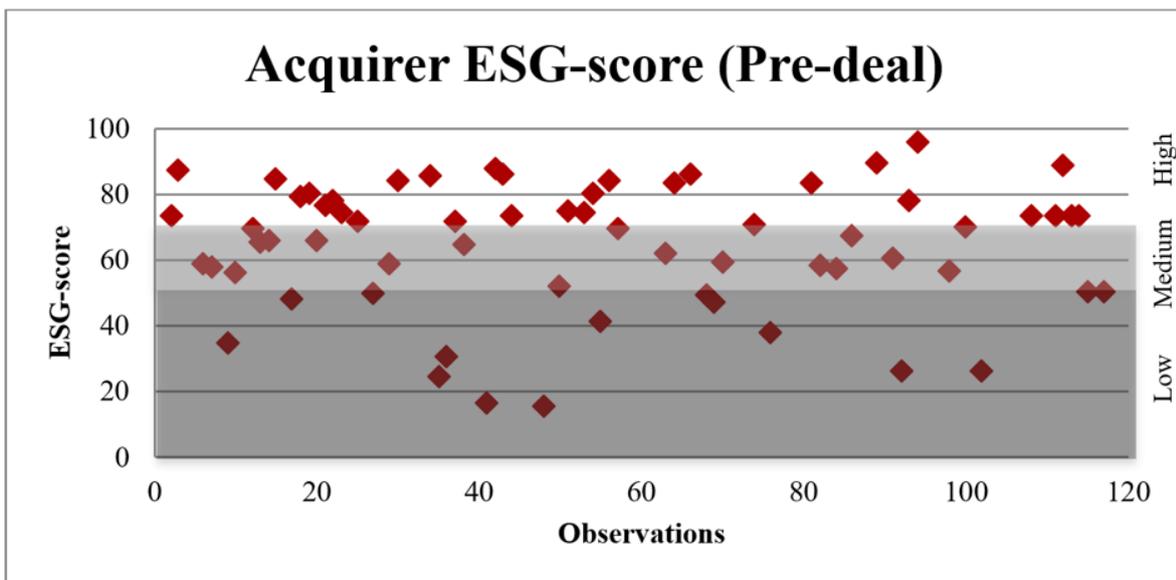
Figure 10 - ESG-scores acquirer pre-deal

The ESG-scores of the targets seem to be very diverse while it appears to be rather difficult to get a score close to 0% as well as close to 100%. The ESG-score of the acquirer includes less observations but the scatter plot supports the descriptive statistics suggesting more acquirers in the upper ESG-score range.

These findings are reflected in Table 16 with the classifications identified in this research.

Table 16 - Classification overview

	Target Pre-deal	%	Acquirer Pre-deal	%	Acquirer Post-deal	%
Low SR-classification	44	37%	12	18%	11	16%
Medium SR-classification	45	38%	22	33%	26	37%
High SR-classification	29	25%	32	48%	33	47%
Grand total	**118**	**100%**	**66**	**100%**	**70**	**100%**

Nearly 50% of the acquirers in the sample are classified as high-level SR-companies in both the year before and after the deal and a low number of acquirers are classified as low-level SR-companies. On the other hand, most targets are classified as medium- or low-level SR-companies, where only one fourth qualifies as high-level SR-companies.

4.3.2 Relationship ESG-score Acquirer vs. ESG-score Target

In order to understand the motivations for acquisitions more in depth, an analysis was made of which acquirers are choosing a specifically rated target.

Table 17 - Classification overview of the M&As

Acquirer SR-classification	Target SR-classification	Improved Post-deal ESG-Score	Worsened Post-deal ESG-Score	Total
High	Low	5	3	8
High	Medium	8	8	16
High	High	1	7	8
Medium	Low	5	2	7
Medium	Medium	7	3	10
Medium	High	5	0	5
Low	Low	4	1	5
Low	Medium	2	1	3
Low	High	3	1	4
Higher-classified SR-target		10	2	12
Equally-classified SR-target		12	11	23
Lower-classified SR-target		18	13	31
Grand total		**40**	**26**	**66**

As shown in Table 17, most acquisitions are made of targets with a lower SR-classification. Slightly fewer companies acquire targets of an equal SR-classification. In total, 12 out of 66 acquisitions were made of a higher SR-classified target. Out of the 12 acquisitions of a higher-classified SR-target, 10 acquirers were able to improve their score by year-end of the announcement year. Further, half of the companies acquiring an equally-classified SR-target or a lower-classified SR-target respectively were able to improve their score by the end of the announcement year.

4.3.3 Improvement of the Score
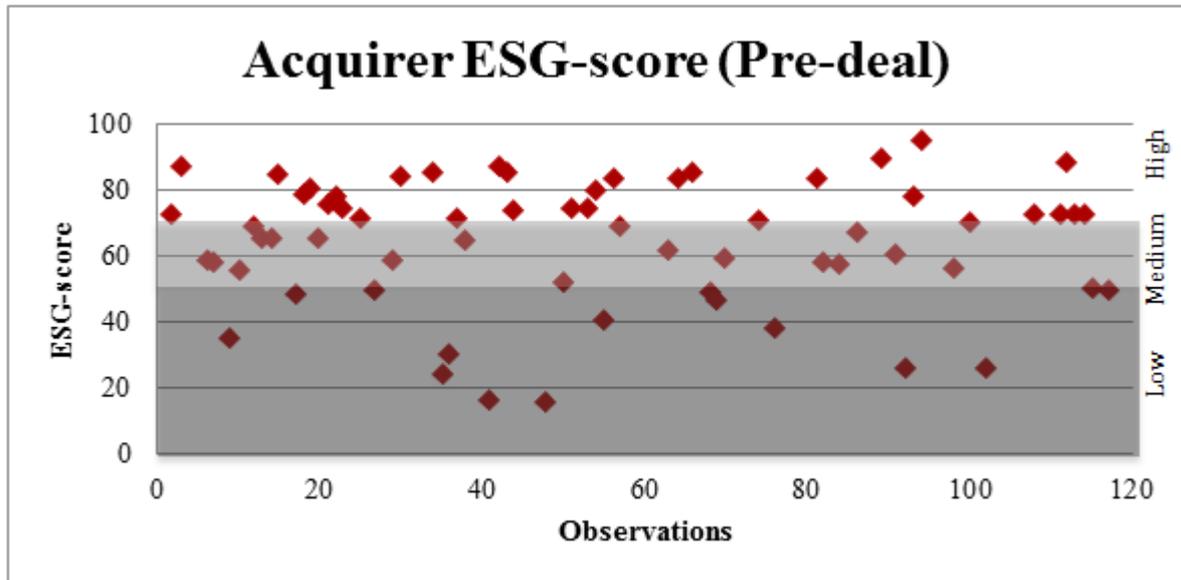
Figure 11 - ESG-scores acquirer pre-deal
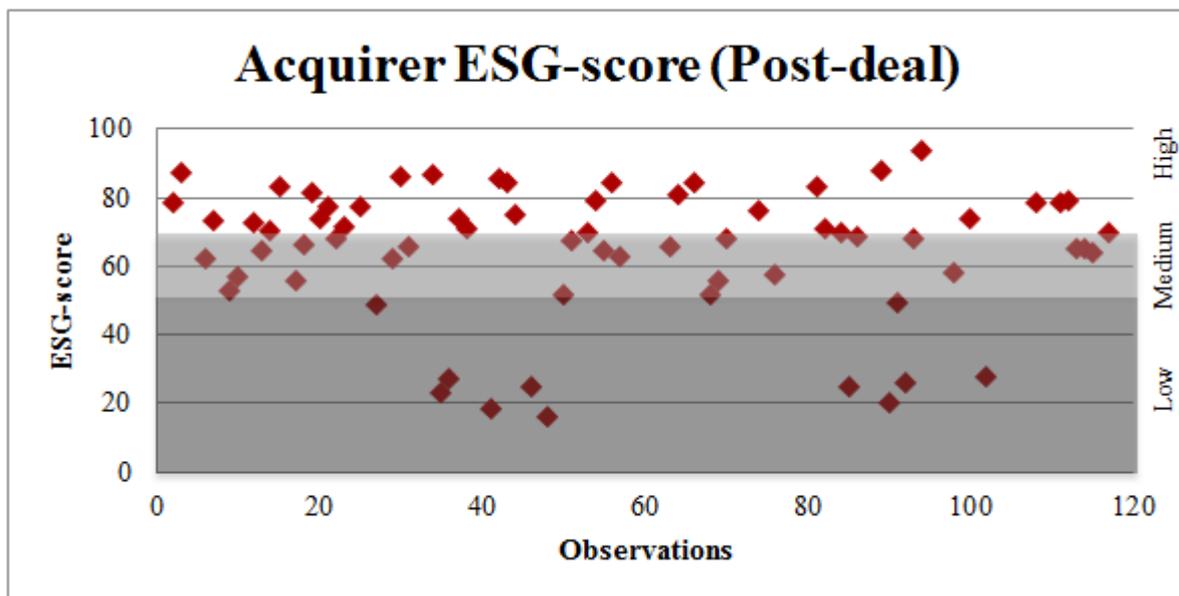
Figure 12 - ESG-scores acquirer post-deal

No significant improvement is visible when comparing the post-deal ESG-score graph to the pre-deal ESG-score graph. However, the density of observations in the upper range of the scatter plot increased and the observations with a lower ESG-score appear more as outliers.
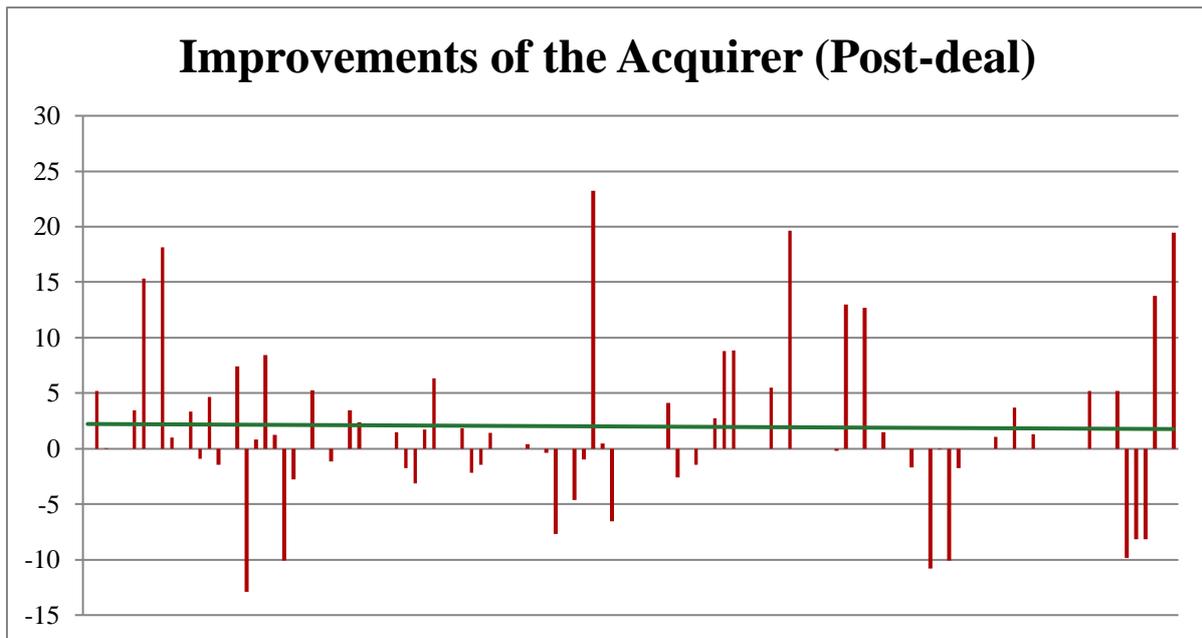
Figure 13 - Improvements of acquirer post-deal

Although the upside potential of the ESG-score seems greater as indicated by the red upward deviations shown in the chart above, the average improvement is not significantly different from zero which is indicated by the green horizontal trend line.

4.3.4 The Time Component of a SRI

As sustainability and social responsibility are becoming increasingly important (Renneboog, Ter Horst et al. 2008) it was decided to look at potential time-specific trends in the sample. This is visualized in Figure 14.
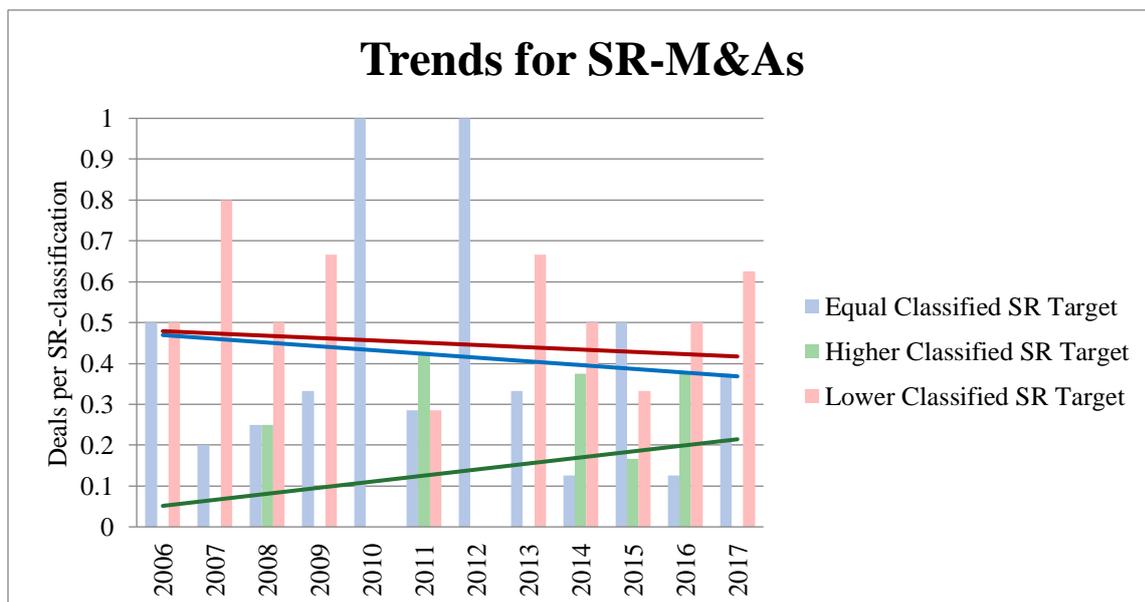
Figure 14 - Trends for SR-M&As

The different bars reflect the percentage of deals completed of a target classified in a higher-, equal- or lower SR-classification. Trend lines were added for each classification in order to enhance the visualization of the development. This shows that investments in equal- (blue) and lower-classified (red) SR-targets are slightly decreasing while investments in higher-classified SR-targets are significantly increasing as indicated by the green trend line.

5. Analysis

In this chapter, the results are analyzed and reflected upon in relation to previous research and established theories. First, the abnormal returns are analyzed followed by the control variables in order to set the framework for an in-depth discussion of the hypotheses and the research questions.

5.1 Analysis of Abnormal Returns

The average abnormal returns are significant for both five- and four days prior to the deal announcement. This indicates that information was leaked prior to the event day and the market might have already reacted when the announcement was made. This might explain why there is no significant reaction on the announcement day. Further, there are significant reactions two- and five days after the announcement which implies that reactions by investors are delayed. Thus, the market efficiency hypothesis (Ogden, Jen et al. 2003) does not fully hold as the market reacts with a slight delay of one day. It seems like the market has overreacted on the days prior to and right after the announcement day. The market then adjusts the overreaction by correcting the price in the days after the second day post-announcement. This conclusion might be drawn due to predominantly positive returns for the five days prior to the announcement until two days after announcement. This is followed by three days of negative returns where two of the days yield negative returns with a high significance level. This is in line with research stating that initial market responses might be biased as the market fails to fully interpret complex information, such as an M&A deal announcement, immediately (Oler, Harrison et al. 2007). A SR-M&A is claimed to be an event involving complex information. Researchers found this information to only be fully incorporated into the stock price after some time (Deng, Kang et al. 2013).

The CARs are statistically significant slightly above zero (mean: 0.01). This is contradictory to some research claiming a negative return (Gugler, Mueller et al. 2003; Gregory 1997). However, the close to zero mean appears to be reasonable in relation to the findings suggesting post-acquisition returns equal to zero (Cartwright, Schoenberg 2006; Uddin, Boateng 2009; Gregory, McCorriston 2005). The differences among various research findings can be explained by the different measures of abnormal returns, event windows and time frames used. Further, the sample in this study could be biased as the ESG-score might only be available for companies with certain characteristics. For example, high performing

companies with the money to invest in sustainability may disclose sustainability information, which is then used by rating agencies to assign ESG-scores. With this in mind, the drivers of the CARs are analyzed carefully in the next section followed by an analysis of the hypotheses.

5.2 Analysis of the Control Variables

Most of the independent control variables in the regression are insignificant. However, the variables are shortly analyzed in Table 18 as the coefficients can still be indicators for potential future trends.

Table 18 - Analysis of the control variables

Control Variable	Analysis
Relative size	The relative size variable shows a positive coefficient which is in contrast to findings of some researchers as a smaller target should theoretically ease the integration process. It can therefore be assumed that the market does not consider this fact yet, as integration is too far in the future from the deal announcement date. Some researchers further found no impact due to size (Uddin, Boateng 2009; Child, Pitkethly et al. 1999) which is aligned with the findings in this research as the coefficient is insignificant.
Dummy cross-border transaction	The dummy variable indicating cross-border acquisitions is highly insignificant as well. Theory suggests that there should be a negative impact on cross-border acquisitions due to the cultural clash (Tetenbaum 1999) and different organizational cultures (Banal-Estañol, Seldeslachts 2011). However, as the results on cross-border acquisitions appear to be mixed (Cartwright, Schoenberg 2006), combined with the low significance of this coefficient and the small sample size, this difference to previous research is explainable.
Dummy related industry	In line with literature, the coefficient for the dummy accounting for the relatedness of the industries is positive. The positive sign indicates that an acquisition of a firm in a related industry performs better (Child, Pitkethly et al. 1999; Gugler, Mueller et al. 2003; King, Dalton et al. 2004; Uddin, Boateng 2009). However, the results are statistically insignificant which could be caused by a biased sample. Some industries may put more effort into SR-disclosures and thus, are more likely to have an ESG-score.
Dummy payment method	The positive sign of the coefficient for the payment method dummy implies that cash transactions are favorable. This is in line with literature presenting cash offers outperforming other options (Uddin, Boateng 2009). The differences are however statistically insignificant (King, Dalton et al. 2004).
Dummy premium	The dummy for the premium shows a positive sign which is contradictory to previous research where a premium is seen as an indicator for overpayment. According to literature, the price is often overestimated (Donker, Zahir 2007) and miscalculated (Ghosal, Sokol 2013). Thus, decreasing post-deal performance (Dănescu 2011). Using Jensen's Free Cash Flow Hypothesis (1986) one might argue that a higher premium reduces cash holdings and financial flexibility.

	Managers have less financial slack to make investments serving their own interests and agency costs will decrease. Another explanation might be that a high premium signals management's confidence in a successful deal outcome. However, the support for these speculations is rather weak due to the insignificance of the coefficient.
Natural logarithm of deal value	The natural logarithm of the deal value which is a proxy for the deal size shows no significance. This is aligned with researchers who claim that deal size is insignificant (Uddin, Boateng 2009; Child, Pitkethly et al. 1999).
Leverage	Leverage shows a negative coefficient with significance which is reasonable as the acquirer is more financially constrained when a higher ratio of the asset base is financed with debt (Ogden, Jen et al. 2003). This seems to be valued by the market as it increases the investment capacity of the acquirer.

5.3 Hypotheses Analysis and Discussion of the Research Questions

In the following section, the hypotheses are rejected or accepted and the potential implications of the findings are discussed with consideration of the research questions.

Table 19 - Summary of the hypotheses

Hypotheses	Rejected	Accepted
H1: A socially responsible acquisition results in a better post-deal performance than a non-socially responsible acquisition.	X	
H2: The effect of a socially responsible acquisition is disturbed by other factors and is therefore low.		X
H3: The interest in socially responsible targets increases and low-level socially responsible acquirers seek to invest in high-level socially responsible targets.	X	X

5.3.1 H1 – Impact of Target's SR-level on Performance

Research question 1: Does an investment in a socially responsible M&A target make a difference on the post-deal performance?

Hypothesis 1: A socially responsible acquisition results in a better post-deal performance than a non-socially responsible acquisition.

The presented empirical findings contradict the hypothesis that acquiring a SR-target improves the post-deal performance. This is shown by the negative coefficient of the target's ESG-score. The negative explanatory power is statistically significant on a 10% level arguing

that a higher ESG-score has a negative impact on post-deal performance for the specified event window. The negative relationship seems to hold for the shorter event windows used to support the findings. This is not surprising considering previous findings arguing that investors respond slightly negatively to positive SR-events (Krüger 2015). Aktas, de Bodt et al. (2011) and Deng, Kang et al. (2013) however found a positive relationship between high-level SR-targets and post-deal performance. Despite some similarities between their studies and this one, the contrasting findings can be the result of the differences. For example, CSR was used as social responsibility measure in their studies along with different event windows.

Agency Argument

The findings of this research might accordingly support arguments against outperformance of SRIs. The negative impact of the target's SR-level on performance is in line with the argument that investors pay a premium on ethics (Renneboog, Ter Horst et al. 2011) and the findings could be explained by the agency theory. It could be an indication that managers invest in SR-targets mainly because they have excess cash that can be utilized for personal gains. Thus, acquiring high-level SR-targets could be a way for the management to either entrench themselves (Aktas, de Bodt et al. 2011; Deng, Kang et al. 2013) or to build an empire (Ogden, Jen et al. 2003). Another explanation could be that managers simply send a signal in order to enhance their own reputation (Wang, Moini 2016). As negative SR-events result in an adverse reaction (Krüger 2015), one could assume that acquirers value a high SR-classification to avoid negative signals to stakeholders. The rational shareholder might however react adversely as value maximization is not the only focus (Aktas, de Bodt et al. 2011).

Investment Opportunities

Further, the number of potential investments is limited if there is a minimum threshold for the acquirer in respect to ESG-score. This might exclude high NPV M&As and wealth is shifted from shareholders to stakeholders who might value social responsibility higher than value maximization.

Premium on Ethics

According to literature, socially irresponsible firms face a higher spread when it comes to bank loans (Goss, Roberts 2011). This introduces a counter argument to the findings of this study. The negative reaction might be justified as even though monitoring might bring better contract terms with credit holders due to social responsibility, the stock market may fear increased monitoring costs. Evidence for such monitoring costs was found for SRI funds (El Ghoul, Guedhami et al. 2011).

Reputation/Contract Theory

Furthermore, the empirical findings do not support the contract theory in the sense of a positive relationship between the SR-level and post-deal performance due to a higher commitment because of fulfilled implicit contracts leading to stakeholder satisfaction (Deng, Kang et al. 2013).

Investor Reaction

However, it is important to keep in mind that the stock price only reflects the expectations of shareholders. Stakeholders might increase their commitment based on implicit contracts but this is not incorporated into the expectations of investors. Despite significance, the negative relationship between the SR-level of the target and post-deal performance may be distorted by other factors, which leads to the second hypothesis.

5.3.2 H2 – Monetary Impact of the Target's SR-level

Research question 2: If there is an impact by the sustainability level of the target in respect to post-deal performance, how influential is it?

Hypothesis 2: The effect of a socially responsible acquisition is disturbed by other factors and is therefore low.

The regression shows a coefficient for the SR-level of the target of -0.0004 which supports the hypothesis. An increase of the ESG-score by one percent would result in a decrease of the CAR by 0.4‰. Thus, there is a low impact in monetary terms in comparison to the other control variables and thereby the effect appears to be rather small. This is in opposition to the findings of Aktas, de Bodt et al. (2011) who claim that the monetary impact of an acquisition of a SR- versus a non-SR-target is high. The definition of a high monetary impact is subjective and the impact was therefore analyzed relative to other variables in this research.

Further, the multiple factors analyzed in the literature and proved to impact performance support the claim that M&As are very complex (Deng, Kang et al. 2013). Although all variables were confirmed to be significant by previous research, this cannot be fully supported by the empirical results in this study as none of the control variables shows significance. The reason for this might be potential omitted variables, a limited- or biased sample or differences in the measurement of variables.

5.3.3 H3 – SR-level Preferences of Acquirers and Development of the Interest

Research question 3: What drives SRIs and do acquirers have the intention to become more socially aware when acquiring a high-level SR-target?

Hypothesis 3: The interest in socially responsible targets increases and low-level socially responsible acquirers seek to invest in high-level socially responsible targets.

The findings show an upward trend of the relative popularity of acquisitions of higher-classified SR-targets. The number of acquisitions within the same- or lower SR-classification appears to be slightly decreasing. Thus, the first part of Hypothesis 3 can be supported by the data. However, investments in equal- or lower-classified SR-targets are still more common compared to investments in higher-classified SR-targets. According to theory, growth is the main motive for M&As (Gaughan 2015). This is supported as becoming more socially responsible is not seen as a predominant motive despite the increasing sustainability awareness (Renneboog, Ter Horst et al. 2008). However, the findings might suggest that this motive is increasingly important and popular due to the upward trend of acquiring higher-classified SR-targets.

An acquisition of a higher-classified SR-target increased the ESG-score of the acquirer in 10 out of 12 cases, which supports the argument of corporate learning from the target's SR-practices (Aktas, de Bodt et al. 2011). However, acquirers investing in equal- or lower-classified SR-targets improved their ESG-scores in more than 50% of the cases. In total, 40 out of 66 companies improved their ESG-score by the year-end of the announcement year. Thus, an enhancement of the ESG-score appears to be a general trend and not solely the result of an investment into a more socially responsible target.

Furthermore, the second part of the hypothesis is not supported by the findings. Only 12 out of 65 deals were completed by a lower-classified SR-acquirer of a higher-classified SR-target. Nearly half of the deals were made by an acquirer with a higher score than the target. This is reasonable from a corporate finance point of view as the main aim of corporations is to increase shareholder value (Aktas, de Bodt et al. 2011) regardless of social responsibility scores.

Reputation/Contract Theory
This contradicts contract theory as stakeholders may expect the company to engage in SRIs. A major investment such as an acquisition of a non-SR-target might violate an implicit

contract which could in turn lead to decreased contribution by stakeholders. In addition, according to signaling theory this type of investment does not signal willingness to engage in social responsibility and should be perceived negatively by the stock market (Krüger 2015). Thus, it does not contribute to a good reputation among stakeholders. For the few companies investing in a higher-classified SR-target, this signal might be very powerful as a deal is costly and the signal is not easily replicable (Ogden, Jen et al. 2003). It would therefore be reasonable for lower- or medium-classified SR-acquirers to engage in acquisitions of high-classified SR-targets. However, only nine out of 34 low- or medium-classified SR-acquirers invested in a high-classified SR-target where eight improved their ESG-score. This might imply that the lower-classified SR-acquirer intentionally bought a higher-classified SR-target to signal willingness to improve the level of social responsibility. Thus, the high improvement rate might support the high quality of the deal as a powerful signal.

Investor Reaction

Shifting back to the investor perspective, this trend seems to be in line with research that ethical aspects are increasingly more important than monetary performance for some investor clienteles (Renneboog, Ter Horst et al. 2011). Maybe the trend is towards a higher valuation of ethical aspects and this investor clientele might become increasingly predominant. The rising trend of acquisitions of higher-classified SR-targets could thereby be the result of the increased interest in ethics. However, the validity of this argumentation needs to be further researched.

5.4 Identification of Potential Trends

One might argue that the social responsibility proxy appears to have a negative impact on returns because the market is not yet ready to fully acknowledge sustainability. This would mean that the market nearly exclusively values events in monetary terms without valuing social responsibility and ethics highly. However, the trend is towards becoming more sustainable (Renneboog, Ter Horst et al. 2008; Auer, Schuhmacher 2016). It is assumed that sustainability is still in the early stage of its development which is why this study claims that SRIs are not yet fully valued by the market. Investors might need more time to accept a lower risk premium (Lee, Humphrey et al. 2010) for SRIs which would lower the WACC (Ogden, Jen et al. 2003). However, this is not the case in practice (Auer, Schuhmacher 2016). The claim that more time is required before shareholders are willing to accept a lower risk premium for high-level SR-firms might also apply to debt holders in the bond market. This is based on arguments that there is still a higher spread for high-level CSR-firms (Menz 2010).

Further, investors might still be skeptical to whether or not the signal is positive. The signal should have a positive association as increasing the screening and becoming more socially responsible signals quality and good governance (Fombrun, Shanley 1990). However, signals might be misinterpreted by recipients such as investors. This argumentation is supported by the findings that the market seems unable to fully interpret the complex deal information in an effective way (Deng, Kang et al. 2013; Oler, Harrison et al. 2007).

This now raises the question if the market is unwilling to value social responsibility or if the market is unable to do that yet. As experienced in the data collection process of this study, social responsibility indicators are still scarce. Thus, one could speculate that investors do not yet have the opportunity to assess ethical investments easily and therefore the market is not as efficient as when only focusing on monetary information.

6. Conclusion

There is a huge debate whether SRI funds outperform conventional funds as well as on what drives post-deal performance. This research combines these areas and addresses outperformance, inferior performance or indifference by changing the perspective to corporate investments in the area of M&As. The empirical findings of this research indicate that a higher ESG-score symbolizing a high level of social responsibility has a negative impact on post-deal performance. This implies that acquirers pay a premium on ethics. Further, the study shows that this negative impact is relatively small in monetary terms. In accordance with the current development of sustainability awareness, a trend was identified where acquirers invest in high-level SR-targets at an increasing rate. Among the acquisitions of these SR-targets, the majority appears to result in an improvement of sustainability as indicated by a higher post-deal ESG-score. This suggests a signaling effect when it comes to signaling willingness to become more socially responsible. Further, the study argues that the market is not yet ready to fully interpret the complexity of SRIs in form of M&A deals or that investors are not yet valuing ethics highly compared to financial performance. Therefore, monetary rewards are almost exclusively considered which might change in the future.

6.2 Contribution and Practical Implications

This thesis contributes to previous research because it discusses a research gap. Compared to the few studies conducted within this area, this research uses a more recent sample and the term SRI is defined in a more holistic way. This is considered to be contributing as it captures more of the recent sustainability trend and requires overall responsibility from the firm.

For practitioners, this study might provide valuable insights into the investors' expectations. It seems like shareholders do not value ethics as investing in a high-level SR-target appears to affect stock returns negatively. There might however be a tradeoff between short-term losses and long-term success. It must however be considered that the results need to be confirmed in further research in order to increase validity for practitioners. This highlights the limited research within this area and thus the enormous potential for future research. This leads to the next chapter which summarizes future research suggestions.

6.1 Suggestions for Future Research

This research shows that there seems to be a significant impact by social responsibility on post-deal M&A performance. However, the underlying factors for such an impact are unknown. This research tries to provide some potential and theoretical explanations which need to be empirically evaluated in future studies.

The problems with data availability for SR-indicators might become less constraining in the future due to the increased awareness of this ethical issue by legislation. For example, in the light of Directive 2014/95/EU concerning the disclosure of non-financial information, one can predict to see a large increase in non-financial reporting in Europe concerning environmental-, social- and governance factors. This should logically result in an increase of ESG-data for M&As. It is therefore reasonable to conduct this study in a few years again as a larger sample would increase the validity as one of the major limitations of the study was the lack of ESG-data. This would also allow digging deeper into the topic as due to limited data availability as well as limited previous research, the analysis is more focused on exploring the topic in a holistic way instead of analyzing a specific area in depth.

Taking a long-term perspective might be value-adding as well as one might assume that becoming more sustainable and efficient after an event could take more time than anticipated by this study.

In addition, instead of using stock returns, looking at accounting returns might add value. Stock returns appear to be biased as the market seems to fail to efficiently interpret complex SR-M&As (Deng, Kang et al. 2013). Thus, using accounting returns would help eliminate the expectations of investors on ethical investments. This is considered very important as ethics is a very subjective topic and a relatively new trend which might indicate that the market is not very experienced in evaluating and measuring it.

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7. Appendices

APPENDIX A

FINAL CAR5 REGRESSION

Dependent Variable: CAR5_WW

Method: Least Squares

Date: 05/15/18   Time: 14:35

Sample: 1 118

Included observations: 118

Huber-White-Hinkley (HC1) heteroskedasticity consistent standard errors
    and covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.002009	0.051632	-0.038908	0.9690
ESG_TARGET	-0.000447	0.000251	-1.781124	0.0777
RELATIVE_SIZE	0.014195	0.030929	0.458965	0.6472
DUM_CROSS_COUNTR Y	0.003176	0.009322	0.340746	0.7340
DUM_RELATED_INDUS TRY	0.002271	0.009670	0.234871	0.8147
DUM_PAYMENT	0.010181	0.009927	1.025594	0.3074
DUM_PREMIUM	0.008133	0.010029	0.810943	0.4192
LOG_DEAL_VALUE	0.003599	0.006609	0.544531	0.5872
LEVERAGE	-0.008677	0.004146	-2.092799	0.0387

R-squared	0.070396	Mean dependent var	0.011940
Adjusted R-squared	0.002168	S.D. dependent var	0.051691
S.E. of regression	0.051634	Akaike info criterion	-3.016049
Sum squared resid	0.290607	Schwarz criterion	-2.804726
Log likelihood	186.9469	Hannan-Quinn criter.	-2.930246
F-statistic	1.031771	Durbin-Watson stat	1.493420
Prob(F-statistic)	0.416795	Wald F-statistic	1.527367
Prob(Wald F-statistic)	0.155957		

Source: created by authors using EViews

APPENDIX B

T-TEST TO TEST FOR THE EXISTENCE OF ABNORMAL RETURNS

$$\hat{Var}\left[\overline{CAR}(\tau_1,\tau_2)\right] = \frac{1}{N^2}\sum_{i=1}^{N}\left(CAR_i(\tau_1,\tau_2) - \overline{CAR}(\tau_1,\tau_2)\right)^2$$

$$t = \frac{\overline{CAR}(\tau_1,\tau_2)}{\sqrt{\hat{Var}\left[\overline{CAR}(\tau_1,\tau_2)\right]}}$$

Hypothesis Testing for CAR5_WW

Date: 05/15/18   Time: 22:00

Sample: 1 118

Included observations: 118

Test of Hypothesis: Mean = 0.000000

Sample Mean = 0.011940

Sample Std. Dev. = 0.051691

Method	Value	Probability
t-statistic	2.509177	0.0135

Source: created by authors using EViews

APPENDIX C

HUBER-WHITE-HINKLEY HETEROSKEDASTICITY CONSISTENT STANDARD
ERRORS AND COVARIANCE TEST

Heteroskedasticity Test: White

Null hypothesis: Homoskedasticity

F-statistic	1.376438	Prob. F(40,77)	0.1150
Obs*R-squared	49.19665	Prob. Chi-Square(40)	0.1511
Scaled explained SS	95.95866	Prob. Chi-Square(40)	0.0000

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 05/15/18   Time: 21:50

Sample: 1 118

Included observations: 118

Huber-White-Hinkley (HC1) heteroskedasticity consistent standard errors
    and covariance

Collinear test regressors dropped from specification

| Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.058282	0.038077	1.530638	0.1300
ESG_TARGET^2	-1.52E-06	1.79E-06	-0.848699	0.3987
ESG_TARGET*RELATIVE_SIZE	-0.000322	0.000115	-2.806462	0.0063
ESG_TARGET*DUM_CROSS_COUN TRY	1.79E-05	4.17E-05	0.429963	0.6684
ESG_TARGET*DUM_RELATED_IND USTRY	7.28E-06	6.08E-05	0.119729	0.9050
ESG_TARGET*DUM_PAYMENT	4.20E-05	7.31E-05	0.574467	0.5673
ESG_TARGET*DUM_PREMIUM	-7.58E-06	4.62E-05	-0.163967	0.8702
ESG_TARGET*LOG_DEAL_VALUE	3.92E-05	4.19E-05	0.934673	0.3529
ESG_TARGET*LEVERAGE	8.91E-07	4.81E-05	0.018520	0.9853
ESG_TARGET	-0.000138	0.000418	-0.330350	0.7420
RELATIVE_SIZE^2	0.021289	0.010116	2.104600	0.0386
RELATIVE_SIZE*DUM_CROSS_COU NTRY	0.004224	0.005166	0.817679	0.4161
RELATIVE_SIZE*DUM_RELATED_I	0.011548	0.008152	1.416472	0.1607

NDUSTRY				
RELATIVE_SIZE*DUM_PAYMENT	-0.012320	0.005643	-2.183204	0.0321
RELATIVE_SIZE*DUM_PREMIUM	-0.019872	0.007491	-2.652598	0.0097
RELATIVE_SIZE*LOG_DEAL_VALU E	-0.000175	0.004395	-0.039721	0.9684
RELATIVE_SIZE*LEVERAGE	-0.007949	0.008388	-0.947739	0.3462
RELATIVE_SIZE	0.019092	0.034746	0.549484	0.5843
DUM_CROSS_COUNTRY^2	-0.004660	0.009699	-0.480491	0.6322
DUM_CROSS_COUNTRY*DUM_REL ATED_INDUSTRY	-0.001376	0.001416	-0.971628	0.3343
DUM_CROSS_COUNTRY*DUM_PAY MENT	0.000851	0.001683	0.505825	0.6144
DUM_CROSS_COUNTRY*DUM_PRE MIUM	-0.000680	0.001755	-0.387091	0.6998
DUM_CROSS_COUNTRY*LOG_DEA L_VALUE	0.000512	0.001283	0.399232	0.6908
DUM_CROSS_COUNTRY*LEVERAG E	-0.001607	0.001720	-0.933976	0.3532
DUM_RELATED_INDUSTRY^2	-0.002378	0.015630	-0.152133	0.8795
DUM_RELATED_INDUSTRY*DUM_ PAYMENT	-0.001003	0.002435	-0.412046	0.6815
DUM_RELATED_INDUSTRY*DUM_ PREMIUM	0.001891	0.001519	1.245067	0.2169
DUM_RELATED_INDUSTRY*LOG_ DEAL_VALUE	0.000161	0.001841	0.087619	0.9304
DUM_RELATED_INDUSTRY*LEVER AGE	0.002217	0.002756	0.804147	0.4238
DUM_PAYMENT^2	-0.000659	0.009207	-0.071581	0.9431
DUM_PAYMENT*DUM_PREMIUM	0.002034	0.003332	0.610584	0.5433
DUM_PAYMENT*LOG_DEAL_VALU E	9.57E-05	0.001173	0.081596	0.9352
DUM_PAYMENT*LEVERAGE	-0.002328	0.001961	-1.187453	0.2387
DUM_PREMIUM^2	0.014272	0.015729	0.907374	0.3670
DUM_PREMIUM*LOG_DEAL_VALU E	-0.001801	0.001927	-0.934791	0.3528
DUM_PREMIUM*LEVERAGE	0.001822	0.002679	0.680088	0.4985
LOG_DEAL_VALUE^2	0.000853	0.000629	1.355040	0.1794
LOG_DEAL_VALUE*LEVERAGE	0.000435	0.001372	0.317200	0.7520
LOG_DEAL_VALUE	-0.014577	0.009393	-1.551776	0.1248
LEVERAGE^2	0.000214	0.000694	0.308583	0.7585
LEVERAGE	-0.004556	0.011595	-0.392954	0.6954

R-squared	0.416921	Mean dependent var	0.002463
Adjusted R-squared	0.114022	S.D. dependent var	0.005288
S.E. of regression	0.004978	Akaike info criterion	-7.499665
Sum squared resid	0.001908	Schwarz criterion	-6.536970
Log likelihood	483.4802	Hannan-Quinn criter.	-7.108782
F-statistic	1.376438	Durbin-Watson stat	1.749530
Prob(F-statistic)	0.114975		

Source: created by authors using EViews

APPENDIX D

NORMALITY TEST TO TEST FOR NORMAL DISTRIBUTION
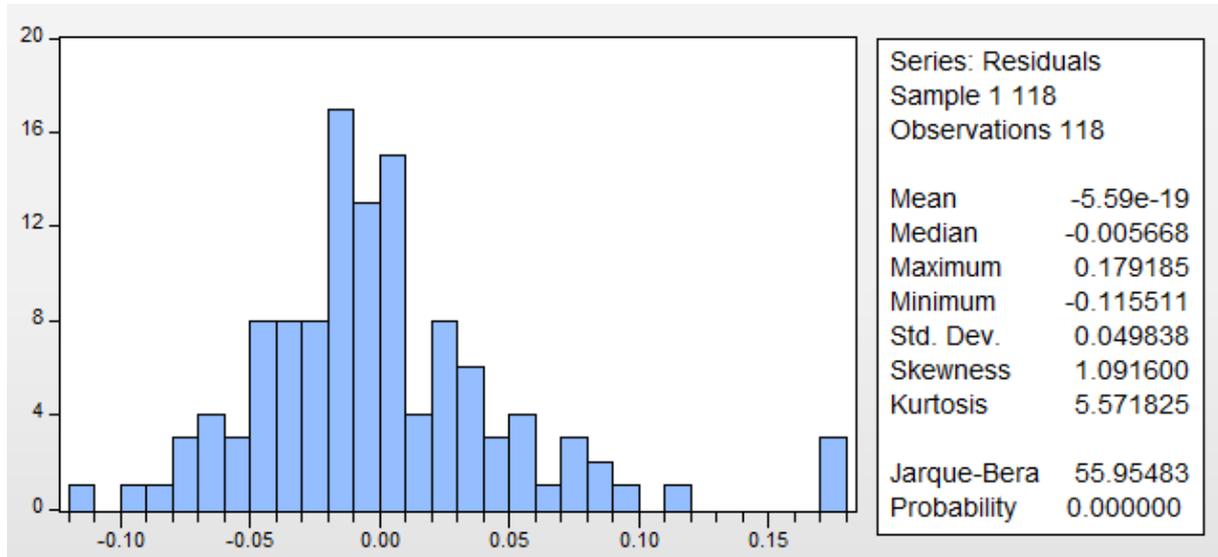
Source: created by authors using EViews

APPENDIX E

VARIANCE-COVARIANCE MATRIX TO TEST FOR MULTICOLLINEARITY

Covariance Analysis: Ordinary
Date: 05/15/18   Time: 21:55
Sample: 1 118
Included observations: 118

Correlation Probability	ESG_ TARGET	RELATI VE_SIZE	DUM_CROSS_C OUNTRY	DUM_RELATED_I NDUSTRY	DUM_PA YMENT	DUM_P REMIUM	LOG_DEAL _VALUE	LEV ERAGE
ESG_TARGET	1.0000 00 -----							
RELATIVE_SIZE	- 0.093156 0.3157	1.000000 -----						
DUM_CROSS_COU NTRY	0.0401 05 0.6663	- 0.023852 0.7977	1.000000 -----					
DUM_RELATED_I NDUSTRY	- 0.071885 0.4392	- 0.132757 0.1518	-0.065196 0.4830	1.000000 -----				
DUM_PAYMENT	0.0911 70 0.3262	0.061416 0.5088	-0.080316 0.3873	-0.217879 0.0178	1.000000 -----			
DUM_PREMIUM	0.0661 35 0.4767	0.127027 0.1705	0.043355 0.6411	-0.081046 0.3830	0.255557 0.0052	1.000000 -----		
LOG_DEAL_VALU E	0.1143 65 0.2175	0.237627 0.0096	-0.066311 0.4756	0.046784 0.6149	0.178450 0.0532	0.256263 0.0051	1.000000 -----	
LEVERAGE	0.0089 22 0.9236	- 0.098101 0.2906	0.027347 0.7688	-0.009544 0.9183	0.064156 0.4901	0.133571 0.1493	-0.014577 0.8755	1.00 0000 -----

Source: created by authors using EViews

APPENDIX F

RAMSEY RESET TEST TO TEST FOR LINEARITY

Ramsey RESET Test

Equation: REG_CAR5

Specification: CAR5_WW C ESG_TARGET RELATIVE_SIZE

    DUM_CROSS_COUNTRY DUM_RELATED_INDUSTRY

    DUM_PAYMENT DUM_PREMIUM LOG_DEAL_VALUE LEVERAGE

Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	1.141113	108	0.2563
F-statistic	1.302138	(1, 108)	0.2563
Likelihood ratio	1.414198	1	0.2344

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	0.003462	1	0.003462
Restricted SSR	0.290607	109	0.002666
Unrestricted SSR	0.287145	108	0.002659

LR test summary:

	Value
Restricted LogL	186.9469
Unrestricted LogL	187.6540

Unrestricted Test Equation:

Dependent Variable: CAR5_WW

Method: Least Squares

Date: 05/15/18   Time: 21:59

Sample: 1 118

Included observations: 118

Huber-White-Hinkley (HC1) heteroskedasticity consistent standard errors

    and covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.

C	-0.000121	0.051411	-0.002363	0.9981
ESG_TARGET	-0.000729	0.000320	-2.280739	0.0245
RELATIVE_SIZE	0.037351	0.033694	1.108549	0.2701
DUM_CROSS_COUNTRY	0.003043	0.009405	0.323534	0.7469
DUM_RELATED_INDUSTRY	0.002300	0.009665	0.238034	0.8123
DUM_PAYMENT	0.017832	0.011346	1.571735	0.1189
DUM_PREMIUM	0.012538	0.011188	1.120689	0.2649
LOG_DEAL_VALUE	0.005320	0.006648	0.800270	0.4253
LEVERAGE	-0.006256	0.004456	-1.403868	0.1632
FITTED^2	-28.26905	21.85672	-1.293380	0.1986

R-squared	0.081470	Mean dependent var	0.011940
Adjusted R-squared	0.004926	S.D. dependent var	0.051691
S.E. of regression	0.051563	Akaike info criterion	-3.011085
Sum squared resid	0.287145	Schwarz criterion	-2.776281
Log likelihood	187.6540	Hannan-Quinn criter.	-2.915748
F-statistic	1.064354	Durbin-Watson stat	1.436839
Prob(F-statistic)	0.394997	Wald F-statistic	1.274450
Prob(Wald F-statistic)	0.259072		

Source: created by authors using EViews

APPENDIX G

SUPPORTING REGRESSIONS USING OTHER EVENT WINDOWS TO SUPPORT OR QUESTION THE FINDINGS

CAR1

Dependent Variable: CAR1

Method: Least Squares

Date: 05/15/18   Time: 14:33

Sample: 1 118

Included observations: 118

Huber-White-Hinkley (HC1) heteroskedasticity consistent standard errors
    and covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.014863	0.043482	-0.361727	0.7374
ESG_TARGET	-0.000464	0.000199	-2.267640	0.0212
RELATIVE_SIZE	0.020257	0.023775	0.876453	0.3910
DUM_CROSS_COUNTRY	0.006306	0.007771	0.875960	0.4168
DUM_RELATED_INDUSTRY	0.006768	0.007869	0.842091	0.3900
DUM_PAYMENT	0.003634	0.008562	0.500103	0.6894
DUM_PREMIUM	0.004580	0.000156	0.401253	0.5707
LOG_DEAL_VALUE	0.004986	0.005998	0.881386	0.4189
LEVERAGE	0.000026	0.005065	0.069405	0.9959

R-squared	0.086669	Mean dependent var		0.010569
Adjusted R-squared	0.018264	S.D. dependent var		0.042717
S.E. of regression	0.042325	Akaike info criterion		-3.413655
Sum squared resid	0.195267	Schwarz criterion		-3.202331
Log likelihood	210.4056	Hannan-Quinn criter.		-3.327851
F-statistic	1.272074	Durbin-Watson stat		1.580461
Prob(F-statistic)	0.265520	Wald F-statistic		1.114742
Prob(Wald F-statistic)	0.359056			

CAR2

Dependent Variable: CAR2

Method: Least Squares

Date: 05/15/18   Time: 13:23

Sample: 1 118

Included observations: 118

Huber-White-Hinkley (HC1) heteroskedasticity consistent standard errors

and covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.003150	0.047536	-0.066261	0.9473
ESG_TARGET	-0.000409	0.000224	-1.827742	0.0703
RELATIVE_SIZE	0.031074	0.028647	1.084733	0.2804
DUM_CROSS_COUNTRY	-0.002210	0.008419	-0.262456	0.7935
DUM_RELATED_INDUSTRY	0.009069	0.008806	1.029820	0.3054
DUM_PAYMENT	0.006998	0.009672	0.723503	0.4709
DUM_PREMIUM	-0.000174	0.009348	-0.018643	0.9852
LOG_DEAL_VALUE	0.002877	0.006261	0.459427	0.6468
LEVERAGE	0.000193	0.003945	0.048933	0.9611

R-squared	0.077440	Mean dependent var	0.006805
Adjusted R-squared	0.009730	S.D. dependent var	0.046871
S.E. of regression	0.046643	Akaike info criterion	-3.219389
Sum squared resid	0.237135	Schwarz criterion	-3.008066
Log likelihood	198.9440	Hannan-Quinn criter.	-3.133586
F-statistic	1.143695	Durbin-Watson stat	1.744551
Prob(F-statistic)	0.340262	Wald F-statistic	0.781863
Prob(Wald F-statistic)	0.619542		

CAR3

Dependent Variable: CAR3

Method: Least Squares

Date: 05/15/18   Time: 13:07

Sample: 1 118

Included observations: 118

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.002295	0.042300	0.054256	0.9568
ESG_TARGET	-0.000484	0.000286	-1.694324	0.0931
RELATIVE_SIZE	0.010414	0.020194	0.515706	0.6071
DUM_CROSS_COUNTRY	-0.000255	0.010032	-0.025381	0.9798
DUM_RELATED_INDUSTRY	0.006466	0.010348	0.624804	0.5334
DUM_PAYMENT	-0.001529	0.010715	-0.142700	0.8868
DUM_PREMIUM	0.005947	0.011111	0.535212	0.5936
LOG_DEAL_VALUE	0.002607	0.005704	0.457126	0.6485
LEVERAGE	0.000493	0.006666	0.073882	0.9412

R-squared	0.040419	Mean dependent var	0.003134
Adjusted R-squared	-0.030009	S.D. dependent var	0.052840
S.E. of regression	0.053627	Akaike info criterion	-2.940308
Sum squared resid	0.313473	Schwarz criterion	-2.728985
Log likelihood	182.4782	Hannan-Quinn criter.	-2.854505
F-statistic	0.573903	Durbin-Watson stat	1.858154
Prob(F-statistic)	0.797353		

CAR4

Dependent Variable: CAR4

Method: Least Squares

Date: 05/15/18   Time: 13:06

Sample: 1 118

Included observations: 118

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.021484	0.043782	-0.490692	0.6246
ESG_TARGET	-0.000382	0.000296	-1.293451	0.1986
RELATIVE_SIZE	0.010765	0.020901	0.515016	0.6076
DUM_CROSS_COUNTRY	-0.004453	0.010384	-0.428852	0.6689
DUM_RELATED_INDUSTRY	-0.000702	0.010711	-0.065537	0.9479
DUM_PAYMENT	-0.001172	0.011090	-0.105695	0.9160
DUM_PREMIUM	0.002272	0.011500	0.197516	0.8438
LOG_DEAL_VALUE	0.007085	0.005903	1.200075	0.2327
LEVERAGE	-0.003239	0.006900	-0.469422	0.6397

R-squared	0.040195	Mean dependent var		0.009475
Adjusted R-squared	-0.030249	S.D. dependent var		0.054686
S.E. of regression	0.055507	Akaike info criterion		-2.871403
Sum squared resid	0.335834	Schwarz criterion		-2.660079
Log likelihood	178.4128	Hannan-Quinn criter.		-2.785599
F-statistic	0.570592	Durbin-Watson stat		1.643879
Prob(F-statistic)	0.800009			

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APPENDIX H

SCATTER PLOTS FOR CONTROL VARIABLES DEFINING REMOVED OUTLIERS

CAR5_WW vs. Variables (Partialled on Regressors)

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