Lauri Hiltunen

Value creation through sustainable deals

Incorporation of ESG criteria in M&A

School of Accounting and Finance
Master's thesis in Finance

Vaasa 2024

University of Vaasa	
School of Accounting and Finance	
Author:	Lauri Hiltunen
Title of the Thesis:	Value creation through sustainable deals: Incorporation of ESG criteria in M&A
Degree:	Master of Science in Economics and Business Administration
Programme:	Finance
Supervisor:	Timothy King
Year:	2024 **Pages:** 75

Abstract:

This study explores the impact of ESG on mergers and acquisitions announcement returns and the subsequent financial performance in the United States. Using a dataset covering the New York Stock Exchange and Nasdaq, the research aims to contribute to the contradictory existing literature. The study includes 429 transactions spanning from 2010 to 2023 and target companies from ten different countries. The event study methodology is applied to cover the announcement returns on a three-, five- and eleven-day window. Further, multivariate regressions are conducted to encapsulate the effect of the ESG-performance on the cumulative abnormal returns and the financial performance. The results indicate statistically significant negative abnormal returns across all ESG-levels. Moreover, the acquirers with high-ESG ratings accumulate higher abnormal returns compared to the low-ESG counterparts, especially when the target also exhibits good ESG performance. The findings are aligned with the sustainable finance principles and the stakeholder theory. However, the multivariate regressions show economic and statistical insignificance on the ESG variables, undermining the findings from the event study.

Vaasan yliopisto	
Laskentatoimen ja Rahoituksen yksikkö	
Tekijä:	Lauri Hiltunen
Työn nimi:	Arvon luominen kestävillä kaupoilla: ESG-kriteeristön sisällyttäminen yrityskauppoihin
Tutkinto:	Kauppatieteiden maisteri
Koulutusohjelma:	Rahoitus
Työn ohjaaja:	Timothy King
Valmistumisvuosi:	2024 **Sivumäärä:** 75

Tiivistelmä:

Tässä tutkimuksessa tarkastellaan ESG:n vaikutusta yritysjärjestelyiden julkistamisilmoitusten tuottoihin ja yrityksen myöhempään taloudelliseen suoritukseen Yhdysvalloissa. Tutkimuksessa käytetään New Yorkin pörssin ja Nasdaqin kattavaa dataa, ja sen tavoitteena on täydentää olemassa olevaa ristiriitaista kirjallisuutta. Tutkimuksessa on mukana 429 yrityskauppaa vuosilta 2010–2023 ja kohdeyrityksiä kymmenestä eri maasta. Tapahtumatutkimusmenetelmää käytetään analysoimaan julkistamisilmoituksen tuottoja kolmen, viiden ja yhdentoista päivän aikajänteillä. Lisäksi tutkimuksessa hyödynnetään monimuuttujaregressioita, joiden avulla kartoitetaan ESG-tuloksen vaikutusta kumulatiivisiin ylituottoihin ja taloudelliseen suorituskykyyn. Tulokset osoittavat tilastollisesti merkitseviä negatiivisia epänormaaleja tuottoja kaikilla ESG-tasoilla. Lisäksi korkean ESG-luokituksen omaavat ostajat kerryttävät korkeampia epänormaaleja tuottoja kuin matalan ESG-luokituksen omaavat ostajat, erityisesti silloin, kun myös ostokohteella on hyvä ESG-luokitus. Tulokset ovat linjassa kestävän rahoituksen periaatteiden ja sidosryhmäteorian kanssa. Monimuuttujaregressiot osoittavat kuitenkin, että ESG-muuttujat ovat taloudellisesti ja tilastollisesti merkityksettömiä, mikä heikentää tapahtumatutkimuksen tuloksia.

Contents

Figures

Tables

Abbreviations

BHAR   Buy-and-Hold Abnormal Returns

CAPM   Capital Asset Pricing Model

CAR   Cumulative Abnormal Returns

CSDR   Central Securities Depository Regulation

CSP   Corporate Social Performance

EMH   Efficient Market Hypothesis

ESG   Environmental, Social, and Governance

LSEG   London Stock Exchange Group

M&A   Mergers and Acquisitions

NYSE	New York Stock Exchange
PRI	Principles of Responsible Investing
SDG	Sustainable Development Goals
SME	Small and medium-sized enterprises
SRI	Socially Responsible Investing
SPI	Stock Price Informativeness
TRESGCS	Thomson Reuters ESG Combined Score
UN	United Nations

1 Introduction

Mergers and acquisitions (M&A) represent critical strategic initiatives for firms aiming to achieve inorganic growth, leverage synergies, and expand market presence. They serve as catalysts for strategic renewal and competitive repositioning, offering avenues for accessing new markets, optimizing resources, and driving value creation. Despite their potential benefits, M&A transactions entail complexities and challenges such as cultural integration, regulatory scrutiny, and stakeholder resistance, necessitating careful planning to maximize their success and realize sustainable value. The advantages of M&A activities are frequently attributed to the synergistic effects that arise from the operational efficiencies of the combined entity (Renneboog & Vansteenkiste, 2019). In other words, it is argued that the collective value of the merged firms exceeds the sum of their parts (Ismail, 2011). Kitching (1967) provides common justifications for the proposed increase in value post-M&A, including eliminating overlapping and redundant activities, improved profitability, efficiency in cost structure, and an improved position within the newly shaped competitive landscape.

The significance of research on mergers and acquisitions is underscored by findings from Netter et al. (2011), which reveal that 91.4% of all public companies in the US have participated in at least one M&A transaction during the 1990-2010 timeframe. However, empirical studies generally indicate that M&A transactions do not favor the shareholders of the acquiring company (Renneboog & Vansteenkiste, 2019). Since the primary objective of management should be to maximize shareholder value according to Friedman (1970), M&A activities require meticulous planning. However, for a long time, academics have acknowledged that, over extended periods, the cumulative abnormal returns (CAR) associated with M&A tend to be negative (Jensen & Ruback, 1983; Agrawal & Mandelker, 1992; Akdoğu, 2009; Alexandridis et al., 2013; Renneboog & Vansteenkiste, 2019).

Regardless of the potential issues with value creation through M&A, PwC (2023) reports a global increase in M&A activities. As depicted in Figure 1, following the subsidence of COVID-19 pandemic-related hesitations, the subsequent year has witnessed a surge in

new deals, predominately in mega-deals valued at over US$ 1 billion. The current year has seen increases in inflation and cost of financing, which influenced the eagerness for M&A transactions. The role of market timing and merger waves influencing deal flow is high and tends to coincide with economic, political, and regulatory revisions (Martynova & Renneboog, 2008). The relevance of market timing is further emphasized by Nguyen et al. (2012), who find that market timing considerations impact 73% of M&A deals and the underlying valuations.
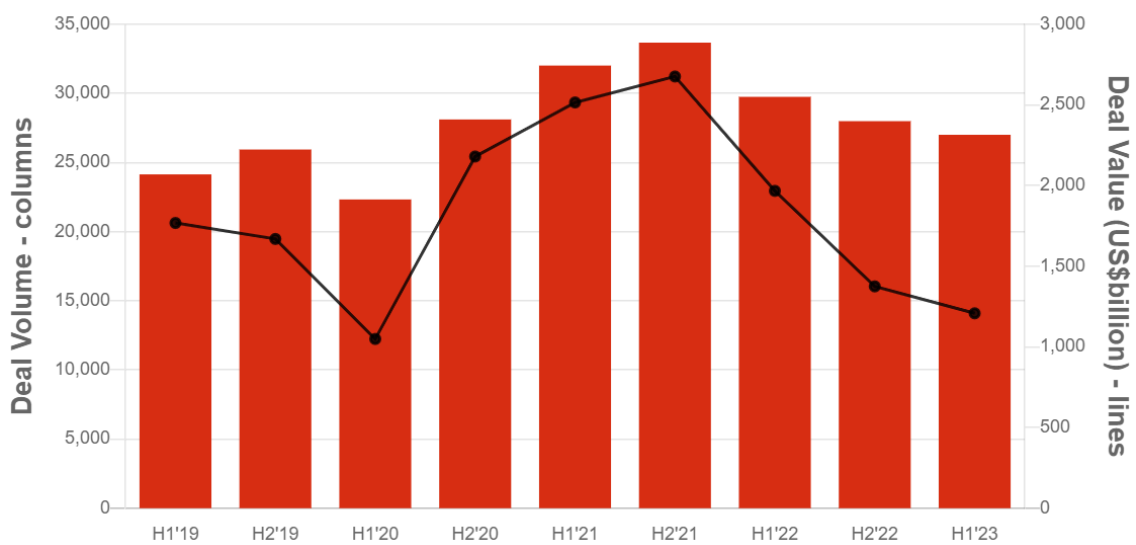
Figure 1. Global M&A volumes (PwC, 2023).

The intersection of M&A with environmental, social, and governance (ESG) considerations represents a pivotal frontier in contemporary corporate strategy and sustainable development discourse. Over the past twenty years, the concepts of accountability and sustainability have evolved within the realm of investments with initiatives like the United Nations' Principles of Responsible Investing (PRI), EU Taxonomy, and the Central Securities Depository Regulation (CSDR) are gaining broad acceptance among corporations and investors (Eurosif, 2023). Further, in 2018, sustainability or corporate responsibility reports were published by 86% of companies included in the S&P 500 index, a significant increase from the under 20% reported in 2011 (Gillan et al., 2021). As firms increasingly recognize the importance of integrating ESG principles into their operational

frameworks, M&A transactions emerge as potent vehicles for driving transformative change and advancing sustainability agendas. ESG encompasses three non-financial categories about a company's environmental impact, social performance, and corporate governance practices. Various agreements and directives mandate companies to divulge this information, such as the EU Taxonomy and CSDR. Following disclosure, numerous private rating agencies can derive ESG scores and other non-financial metrics from the reported information (Christensen et al., 2022).

By embedding ESG criteria into the due diligence process, acquirers can assess target firms' environmental impact, social responsibility practices, and governance structures, thereby mitigating risks and uncovering potential synergies (KPMG, 2022). Moreover, M&A activities offer opportunities for firms to realign their strategic priorities, enhance stakeholder engagement, and foster long-term value creation in alignment with ESG objectives. Firms can improve their sustainability credentials through strategic acquisitions and even create industry-wide shifts towards more responsible business practices.

ESG investing has gained growing significance for corporations, politicians, investors, and nations. It is argued that the substantial advancements in global economic growth and societal prosperity have come at the expense of environmental harm, and absolute decoupling is challenging (EEA, 2023). One of the first major global attempts to prevent further damage from natural resource depletion caused by exploitation dates back to 1949 by the United Nations (UN) (United Nations, 1951). Beyond localized issues such as drought, freshwater scarcity, land degradation, and biodiversity loss, climate change is highlighted as one of the greatest challenges, with adverse impacts on global temperature, coastal areas, and sea levels (United Nations, 2023). According to the United Nations (2023), the survival of societies and the biological support systems of the planet are at risk. The issue is topical, as NOAA (2023) points out, the year 2023 is more than likely to be the hottest year in history, implying that global warming has not slowed down. To combat climate warming, the United Nation's Conference of the Parties 28th session

decided to accelerate the decrease in fossil fuel usage further (European Commission, 2023).

1.1 Objectives and research questions

The purpose of this thesis is to explore and contribute to the academic understanding of the relationship between ESG considerations and mergers and acquisitions. Specifically, the study aims to investigate the impact of ESG factors on M&A outcomes and firm performance, focusing on the financial implications of incorporating sustainability and responsible business practices into M&A considerations. The thesis tries to discover whether shareholders of an acquiring company can avoid losses and even benefit financially from each M&A transaction. The number of studies conducted specifically on ESG contributions in M&A contexts is scarce and this thesis further contributes to the existing literature. As the corporate landscape continues to evolve rapidly, with shifts in market conditions, regulatory frameworks, and stakeholder expectations, the research addresses a timely and topical area.

The first hypothesis is similar to Wang et al. (2021), who find that acquiring a high-CSR target leads to lower announcement returns and deteriorating performance. The study therefore attempts to discover if ESG performance contributes to M&A performance and the first hypothesis is as follows:

H_1: Acquirers bidding on high-ESG targets underperform in M&A announcement returns and post-M&A financial performance

The motivation for the second hypothesis arises from the previous literature on social responsibility and firm performance, as it is mixed. Buchanan et al. (2018) find that, on average, high-CSR firms exhibit higher firm value than low-CSR firms before the financial crisis. However, in the post-crisis period, high-CSR firms experience a larger decrease in value. They attribute the effect of CSR overinvesting, similar to Wang et al. (2021).

Renneboog et al. (2008) argue that investors might prioritize social or ethical objectives over superior financial performance.

Contrary to the previously mentioned, Zheng et al. (2023) find that high-ESG acquirers are inclined to have better post-M&A performance compared to low-ESG firms. The study by Gillan et al. (2021) summarizes the existing research on ESG and firm performance and states that there are conflicting results and further research is needed. Therefore, this study aims to contribute to the research with the following hypothesis:

H_2: The adverse effects of purchasing high-ESG targets on acquirer performance are more pronounced in acquirers with high-ESG performance

1.2 Scope

The intended purpose of this thesis is to contribute to the academic literature by providing a comprehensive analysis of the effect of ESG considerations in M&A transactions in the United States through domestic and cross-border deals. By delving into this topic, the research aims to shed light on how ESG considerations can impact the financial aspects of mergers and acquisitions, including the profitability and overall performance of the involved firms. Through comprehensive data analysis and statistical methods, the study seeks to identify and quantify the specific effects of ESG factors on M&A transactions, providing valuable insights into the financial consequences of incorporating sustainability and responsible business practices into M&A activities. By utilizing a methodology that incorporates an event study and regression analysis, the research aims to offer robust insights into the relationship between ESG and M&A. Additionally, the study seeks to provide practical implications for industry practitioners, policymakers, and investors by informing decision-making processes and facilitating a deeper understanding of the potential risks and benefits associated with sustainability-focused activities.

The existing literature suggests that M&As are not, on average, beneficial for acquiring company shareholders (Jensen & Ruback, 1983; Agrawal & Mandelker, 1992; Akdoğu, 2009; Alexandridis et al., 2013; Renneboog & Vansteenkiste, 2019). Nevertheless, over time, M&A volumes have not decreased (PwC, 2023). Therefore, either acquiring company shareholders are unaware of these results, the general result is wrong, or some other force is pushing the average M&A acquiring company management and shareholders to ignore the basic economic fundamental outcome and carry out these transactions regardless.

However, the studies on ESG's impact on shareholder wealth in the context of M&A are contradictory. Chapter 3.2 introduces papers covering this specific topic, most notably the studies by Wang et al. (2021) and Zheng et al. (2023), which have a profound influence on this thesis. The impact of ESG is not universally clear and the papers have mixed results regarding shareholder value impact. This thesis seeks to shed light on the contradictions in that aspect.

ESG ratings, despite their increasing popularity and relevance, are subject to two main limitations. Firstly, variation among rating agencies in their measurement methodologies for ESG reporting (Christensen et al., 2022). The discrepancy in ratings can result in inconsistencies in the assessment and comparison of corporations' environmental, social, and governance practices. Christensen et al. (2022) argue that such variations can lead to the measurement of factors that are not aligned with the intended objectives of ESG ratings. Further, the authors note that improvements in firms' sustainability disclosure and reporting can have contradictory impacts on the rating disagreement between rating agencies. To overcome this issue, the study will use only one source of ratings, Thomson Reuters. Secondly, ESG ratings heavily rely on the quality and quantity of ESG reporting provided by companies. Inaccurate or incomplete reporting can skew the ratings and potentially misrepresent a company's true ESG performance.

1.3 Structure of the study

This thesis comprises six primary chapters and the second chapter delves into the relevant theoretical frameworks of the study. The third chapter introduces the existing literature regarding M&A and ESG. The next chapter is dedicated to detailing the data and methodology employed in this thesis. Afterward, the study presents the empirical results of the study. The last chapter undertakes the interpretation and conclusions drawn from the empirical findings. It discusses the implications of the results and addresses limitations, concluding with ideas for future research.

2   Literature review and theoretical framework

This chapter introduces the essential frameworks and theories related to the study. The first part focuses on the standalone M&A concepts and characteristics while highlighting the fundamentals affecting the rationale behind the transactions. The chapter then introduces the frameworks around ESG and sustainability. The final chapters recognizes opportunities and potential issues regarding the sustainable frameworks integration to investment considerations and businesses.

2.1   M&A characteristics

Extensive research has been conducted on M&A transactions, with current academic literature indicating that shareholders of the acquiring company experience, on average, close to zero or even negative abnormal returns in the short term (Moeller et al., 2004). Despite this, M&A transactions remain a major component of a companies' life cycle. Further, PwC (2023) reports that M&A spending has remained consistently high in recent years.

While it is important to identify factors that create value, Nguyen et al. (2012) find that 80% of M&A transactions have multiple motivations behind them. The underlying motives include both value-increasing and value-decreasing factors, making it difficult to predict outcomes based on the factors. Ma et al. (2011) study changes in the acquirer's industry-adjusted intrinsic value 36 months before and after the announcement of an acquisition. They discover that the pattern follows existing literature, which shows that ratios tend to increase before an acquisition and decline afterward. However, the authors note that, on average, intrinsic value falls below the industry median within three years of the transaction.

Limiting the value creation to the stock price movements alone does not provide an accurate representation of the total value creation. Further variables should be factored in,

such as the synergy gains resulting from M&A transactions, which are further discussed in Chapter 2.4.3. According to Fu et al. (2013), accounting-based measures of performance, such as ROA, operating margins, sales, and cash flow, provide a more direct metric of the synergistic value gains or losses. They argue that these measures are better at representing the value generated from the transaction than stock prices alone. Renneboog and Vansteenkiste (2019) note that these metrics face similar complications as CAR and buy-and-hold abnormal returns (BHAR) since it is difficult to differentiate the consequent effects of the transaction from other improvements or deteriorations within the company.

2.2 Fundamental elements for successful transactions

Efficiency in the market is important particularly when the bidder is using shares as a means of payment in a transaction. The study by Rhodes-Kropf et al. (2005) highlights that during periods of high merger activity and overheated equity markets, shares tend to become overvalued. According to Amel-Zadeh and Meeks (2019), this is due to information asymmetry between the acquiring firm's management and their shareholders, which is further compounded between the bidder and the target. The authors note that equity-financed acquisitions require all parties to evaluate the transaction's post-acquisition success. Consequently, assessing the expected value of the acquisition accurately proves challenging due to the information asymmetry.

Rhodes-Kropf and Viswanathan (2005) argue that upon announcement of the acquisition, the bidder's share price is adjusted based on the market's response to new information. Similarly, the target should also consider price changes post-closing as they affect the purchase price. According to the efficient market hypothesis (EMH), the price adjustment should be immediate and precise (Fama, 1970).

2.3 Merger waves and market timing

Mergers and acquisitions have historically occurred in waves, with Figure 1 illustrating the current, seventh wave of activity reaching a historically high level. The Covid-19 pandemic impacts the most recent merger wave and resulting uncertainty leads to postponed investments. Previous M&A waves have been observed during the 1900s, 1920s, 1960s, 1980s, 1990s, and 2000s. Martynova and Renneboog (2008) argue that these waves coincide with economic, political, and regulatory changes. Each wave is typically characterized by economic recovery from a previous disruption, increasing credit expansion, and a thriving stock market. Additionally, Nguyen et al. (2012) find that 73% of M&A transactions are related to market timing. Their empirical study includes 3,520 US acquirers, but the authors note that 80% of these firms have multiple motives for their M&A deals.

The studies by Rhodes-Kropf and Viswanathan (2005) and Rhodes-Kropf et al. (2005) both argue that during merger waves, assets tend to be misvalued at a high rate. While, on average, the target company's transactions are usually valued correctly, the payment during such waves is often overvalued, even if the target's equity is affected by the same overvaluation of the market. Even rational participants tend to evaluate equity incorrectly, and identifying the intrinsic value of assets during an overheated market presents a challenge (Rhodes-Kropf & Viswanathan, 2005; Rhodes-Kropf et al., 2005). Furthermore, in times of overvaluation, the medium of exchange often contains a greater allocation of equity offers, whereas successful transactions are completed with cash during an undervalued market. Additionally, cash acquirers are considered undervalued, while stock acquirers are overvalued. The authors argue that M&A waves are driven by the high valuation of equity, as shares are exchanged for cash flow.

According to Harford (2005), industry merger waves are driven by economic, regulatory, and technological shocks. These shocks require an increase in capital liquidity and a reduction of financial constraints to propagate a wave in the market. The decrease in interest rates makes financial leveraging cheaper and more accessible, consequently

fueling investments. The authors argue that although managers do not create merger waves by timing the market, their increased incentive for market timing is concentrated around these waves.

Harford (2005) states that the neoclassical hypothesis suggests that the collective reaction to M&A activity clusters over time, leading to competitive asset reallocation, thus fueling the merger wave further. Duchin and Schmidt (2013) find evidence that transactions carried out during a merger wave, lead to managerial herding and agency-related problems. As acquisition volumes grow, pressure builds to engage in M&A activity, resulting in uncertainty and a lack of quality analyses. Additionally, managers are subject to career concerns, which push them to follow their peers even if it negatively affects shareholder value.

According to Vermaelen and Xu (2014), M&As often involve equity-financed acquisitions during times of increased activity, particularly when market valuations are high. If the equity is overvalued, shares can be an attractive payment method for M&A deals. However, the authors contend that overvalued equity must be justifiable as a payment method. One such justification is that highly leveraged bidders restructure their capital by distributing the equity. Conversely, if the proposal cannot be rationalized, the target firm's management may demand a higher amount of equity as their intrinsic value does not align with the offer price. This demand for a higher equity amount negates the advantage of using overvalued equity as payment and may result in an increase in the premium demanded.

A study by Jory et al. (2020) reinforces the market timing and agency theories, revealing that companies that offer stocks as payment for acquisitions are more susceptible to post-acquisition stock price crashes compared to bidders utilizing cash. Moreover, the findings suggest that the risk of price crashes is particularly high for overvalued companies with positive industry-adjusted market-to-book ratios. To mitigate the issue of price crash risk, Amel-Zadeh and Meeks (2019) argue that the transparency of voluntary

earnings forecasts can minimize the risk by reducing information asymmetry. The authors note that this is beneficial to the shareholders given that the profitability expectations of the transaction directly impact its success. On average, acquisitions with disclosed forecasts experience a 12% lower premium. However, the authors further note that acquirers may have a motive to withhold information if they believe their firm is overvalued at the time of the transaction.

Becher et al. (2020) examine the influence of funding conditions on M&A transactions. Their research highlights how access to capital can impact investment decisions, particularly for smaller firms facing financial constraints. The findings reveal that favorable funding conditions lead to a 77% increase in deal activity for such financially constraint firms, as opposed to unfavorable conditions. In contrast, larger firms only experience a 4% increase in deal activity. Becher et al. (2020) further emphasize the critical role of adequate aggregate capital in triggering merger waves, concurring with the findings of Harford (2005).

During periods of heightened M&A activity, competition in takeover bid situations tends to intensify. In order to execute a successful and profitable acquisition, accurately assessing the value of the target is crucial. The theory of winner's curse becomes relevant in these situations, particularly during merger waves. The theory is introduced by Capen et al. (1971) through their analysis of oil and gas lease auctions and their fundamental valuations. According to the authors, as bidders determine and analyze the amount of oil independently from one another, yielding a range of valuations for the lease is created. The authors argue that the average valuation represents the lease's fundamental value, hence the highest estimates typically exceed it. Consequently, the winning bidder may end up overpaying for the lease, as their perceived value is higher than its fundamental value. The premium paid for the lease may not materialize into profits (Capen et al., 1971).

Researchers have examined the winner's curse in the context of M&A deals since the introduction of the theory and Betton et al. (2009) find that acquirers pay an average premium of 45% above the stock price of publicly listed targets. Betton et al. (2009) also discover that public target acquisitions result in negative announcement returns on average. However, Brander and Egan (2017) conduct a study on private targets and find that the average returns are positive. They argue that negative returns may indicate irrational behavior, and the existence of the winner's curse requires returns to be below the efficient level. The study find that 46% of private target acquisitions had statistically significant negative CAR, which suggests that the winner's curse may also exist in private acquisitions. The authors concluded that while the winner's curse is stronger in public acquisitions, it is still present in private acquisitions.

2.4   Underlying motives

Trautwein (1990) posits that behavioral theories can explain the underlying motives guiding the investment decisions of managers. In M&A transactions, these biases can be observed on both the acquirer and target sides, and they have a significant impact. Additionally, Trautwein (1990) notes that CEOs and other executives hold a substantial amount of power in the M&A process, and their preferences often influence the outcome. Given that shareholders have limited direct control over investment decisions, it is crucial to have a competent set of managers in place.

2.4.1   Agency theory

Mergers and acquisitions are often utilized as a strategic initiative to facilitate business growth. M&A-related decisions usually involve compensation, as many corporations offer incentive programs to their executives based on the performance of the firm. The ultimate goal of these programs is to ensure that the interests of shareholders and executives are aligned. However, Jensen and Meckling (1976) suggest that executives should

always prioritize the shareholders' best interests, which contradicts the agency theory. According to Roll (1986), the hubris theory distinguishes itself from the agency theory, as it asserts that executives may believe they are acting in the shareholders' best interest, but their overconfidence can cloud their judgment.

According to Jensen (1986), managers' desire for growth can lead to a conflict of interest due to their self-interest. They may be motivated to expand their resources and increase their power, which can be rationalized through business growth. However, this can create issues with the allocation of free cash flow between shareholders and managers. Jensen (1986) notes that if the capital is allocated to shareholders, external debt may be needed for investments in growth, efficiency, or research and development. Additionally, high amounts of free cash flow may incentivize managers to overinvest inefficiently for the sake of empire-building.

The concept of agency theory is closely linked to the surplus cash held by companies. According to Huang et al. (2018), debt with short maturity is an effective way to reduce agency costs and increase the likelihood of successful acquisitions. The authors argue that for cash-rich companies with weak corporate governance and limited access to public debt markets, short-maturity debt helps to improve corporate governance and prevent subpar acquisitions. Huang et al. (2018) further argue that the financial structure of a company can enhance shareholder value and mitigate agency costs.

Concurring with the findings of Huang et al. (2018), Gao and Mohamed (2018) argue that financially constrained acquirers with large cash reserves often make better investment decisions than unrestricted ones. Cash holdings provide companies with greater financial flexibility and increase hedging possibilities against risks. Moreover, Gao and Mohamed (2018) find that post-acquisition performance is often stronger when access to debt is limited, thus reducing agency costs.

2.4.2 Hubris hypothesis

When it comes to M&A decisions, the CEO and other directors of a company wield considerable influence. Although management teams are typically highly competent, their own expertise can occasionally obscure their shortcomings. Introduces by Roll (1986), the hubris hypothesis suggests that acquiring company management may overvalue their capabilities, leading to overpaying to the extent that abnormal returns on the transaction become negative. While measuring overconfidence can be a difficult task, the effects can be profound on the decision-making process.

The concept of using overconfidence to rationalize failed M&A deals has been challenged in recent years. While it is a plausible explanation, it cannot be solely attributed to the negative CARs that often follow M&A deals. Research conducted by Aktas et al. (2009) suggests that declining CARs could be a result of factors such as budget constraints, increasing competition during merger waves, or declining investment opportunities.

In a subsequent study, Aktas et al. (2011) find that serial acquisitions often result in declining returns due to CEO learning. CEOs react to the market feedback to their acquisition announcements, which is used to adjust the consequent offers. The study provides empirical evidence to support the learning hypothesis, however, the sample size is limited, thus the results cannot be universally applied.

According to Chung and Hribar (2021), CEO overconfidence has an impact on goodwill impairment, which can be interpreted as a signal for unfavorable M&A transaction decisions. The authors argue that goodwill impairments are indicative of an overvaluation of the target in M&A deals. The study suggests that hubris is a key factor that contributes to unsuccessful M&A deals.

Consistent with the research of Chung and Hribar, Malmendier and Tate (2005) discover that CEOs with excessive confidence tend to overvalue investment decisions, resulting in negative abnormal returns. They find a strong correlation between the level of

overconfidence and investment cash flows. The authors continue to argue that as confidence in future investment returns grows, the desire to pursue M&A deals intensifies. Additionally, the authors note that an influx of internal funds can lead to adjustments in corporate investment policies.

According to Jaffe et al. (2013), variations in skill levels among acquiring firms have a significant influence on the results of M&A transactions. They find that if the CEO remains the same between consecutive transactions, and the previous transaction was successful, the evidence shows that the positive performance trend will persist. Their study revealed that successful acquirers who retained their CEOs gained an average of 1.02% more on their subsequent M&A deals. These findings suggest that hubris is not the root cause of value-diminishing conduct among CEOs and can be mitigated.

2.4.3 Synergy theory

According to the synergy theory, the combination of two individual companies' present values is greater than their values separately. Kitching (1967) argues that the resulting combined corporation is more efficient, have reduced overlapping activities, decreased overheads, and an improved cost structure, ultimately leading to increased potential profitability. Additionally, if the two companies have related R&D projects, they can share knowledge and technology between them, creating more efficient departments (Kitching, 1967).

The study by Bena and Li (2013) examines R&D expenditure and its implications on M&A transactions, finding that R&D-intensive firms with low growth rates are more likely to be acquired, and vice versa. This concept of corporate innovation synergy is particularly relevant in the healthcare sector, where large pharmaceutical corporations may acquire smaller firms with patents for new products.

The concept of synergies arises from the collective progress in the competitive environ-ment and gaining a competitive edge through combined operations. Mukherjee et al. (2004) argue that the determinants of a competitive edge are attributed to factors such as the combined talent pool, limiting stakeholder involvement during the production process, consolidated negotiation power, innovations, and tax benefits.

Ismail (2011) argues that the classical theory of the value of a combined company is calculated with the following equation:

$$PV_{Combined} = PV_{Bidder} + PV_{Target} + Synergy \tag{1}$$

According to Ismail (2011), the equation should yield the premium paid by the acquiring company. However, his empirical evidence suggests otherwise. The findings indicate that synergies do not seem to have a significant impact on completing or engaging in M&A transactions. The author argues that the findings can be partly attributed to managerial hubris.

Although operational synergies are typically the primary focus of transaction benefits, Williamson and Yang (2021) suggest that financial synergies have become increasingly important, particularly for financially constrained companies. These limitations can im-pede a firm from reaching its full potential, especially if it is unable to secure the neces-sary financing for an M&A investment opportunity. The window of an M&A opportunity can be missed, and the potential target might be acquired by a direct competitor, leading to a further decreased competitive position.

Erel et al. (2014) find that financial constraints among targets can be alleviated when acquired by unconstrained bidders. The owners of the financially limited target can be motivated to engage in an M&A transaction to increase the growth potential through access to investments. Williamson and Yang (2021) expand on this concept by examining the financial synergy gains of the acquirer and discovering strong evidence of eased

financial constraints post-acquisition. While there are other reasons to acquire or merge with a target, the alleviation of financial constraints is a crucial factor to consider when evaluating the benefits of the transaction (Williamson and Yang, 2021).

2.5 ESG framework

ESG principles are centered around three fundamental areas of a company's practices. The environmental component pertains to how companies address environmental issues such as climate change, resource depletion, and pollution. The social aspect of ESG concerns the relationship between employers and employees, the fight against racism and child labor, and the assurance of safety and health in the workplace, among other things. Governance, the third factor, examines a company's management practices, including dealing with bribery, corruption, board diversity, and excessive CEO compensation.

The role of ESG factors in investment decisions has become increasingly significant. The push to incorporate ESG principles into business operations has grown across various sectors (Zheng et al., 2023). The rise in ESG's popularity over the past twenty years can be attributed to several factors. Notably, the increase in accessible information for investors, along with improved data from social research organizations, has enabled companies to make more informed decisions. Already in 2020, more than 90% of the companies included in the S&P 500 published ESG reports (Zheng et al., 2023). As the knowledge base grows, investors are more likely to adopt responsible practices. Since the conception of ESG, researchers have been investigating the relationship between ESG performance and financial results (Gillan et al., 2021). Despite the growing interest in understanding ESG factors, its exploration of the investment processes within the M&A context is relatively scarce.

It is argued that the role of government is crucial to sustainability in the corporate world. As Friedman (1970) argues, the sole purpose of a corporation, unless explicitly stated otherwise, is to maximize the shareholder's value and the profit it generates, thus the

average firm is not keen to spend excess capital to benefit others. Therefore, motives to invest in ESG-related issues more than the optimal amount must be external rather than internal. Horizontal stakeholders of a corporation can exhibit pressure to ensure that the values are aligned throughout the supply chain.

However, the top-down approach is noticeable, for example, a sovereign state fund investing the capital under the principles set by the government. The fund subsequently invests under the principles of sustainable private equity funds, which set out to seek investments with sustainable practices in place or create them in portfolio companies. As the companies must, under the principles of the owners, incorporate sustainable practices throughout the supply chain, the effect trickles down from the top to the smallest entrepreneurs. Sustainable practices therefore are implicitly extended to most of the companies, either directly through initiatives, such as CSDR and EU taxonomy, or indirectly through the stakeholders.

2.5.1 Corporate Social Responsibility

Corporate social responsibility (CSR) and ESG represent two distinct yet interconnected approaches to evaluating a company's commitment to sustainability. CSR involves a wide spectrum of socially responsible activities undertaken by companies, including reducing the carbon footprint, enhancing labor practices, and participating in charitable endeavors (Gillan et al., 2021). According to O'Neill (2023), CSR plays a critical role in brand management, conveying a company's dedication to social responsibility and sustainability. The author further characterizes CSR as more qualitative and self-regulated, with activities varying across companies. While it serves as a framework to inform the public about a business's values and goals, it can be challenging to define and measure concretely.

In contrast, ESG focuses specifically on three key areas, based on the reporting of the companies. These aspects are considered more quantifiable, allowing rating agencies to

assess a company's performance and provide a standardized score (Berg et al., 2022). ESG has become a popular measure for investors seeking to evaluate a company's sustainability. By offering measurable goals and scores based on environmental, social, and governance criteria, ESG provides investors with tangible and numeric insights into a company's sustainability performance. This approach allows for a clearer evaluation of a company's practices in these crucial areas.

However, Berg et al. (2022) and Christensen et al. (2022) both find discrepancies in the ESG ratings, which implies that the rating agencies interpret the information available in various ways. The studies note that the differences make it difficult to evaluate the ESG performance of companies, funds, and portfolios, which is the primary purpose of ESG ratings. Further, they argue that ESG rating divergence decreases companies' incentives to improve their ESG performance.

2.5.2   Sustainable development goals

Initiated by the United Nations in 2015, the Sustainable Development Goals (SDG) represent a global initiative urging collective efforts to forge a more sustainable world for all by 2030 (United Nations, 2023). The UN notes that the SDGs comprise of seventeen goals and 169 associated targets. The SDGs aspire to eradicate poverty, safeguard the environment, foster peace, and prosperity, and further confront global challenges through international collaboration.

These goals establish a comprehensive framework for global sustainability and development, encompassing environmental responsibility, social inclusivity, and economic advancement. Prioritizing enhanced health and well-being, quality education, environmental conservation, climate action, and gender equality, the SDGs carry profound implications. It is argued that the ESG pillars overlap with SDGs, as ESG covers specific aspects highlighted in the SDGs. The potential benefits are diverse, ranging from the creation of improved job opportunities and sustainable employment growth to the fortification of

economic stability and the instillation of hope for future generations (United Nations, 2023).

2.5.3 Responsible and sustainable investing

Sustainable finance is an approach to financial decision-making that ESG factors into investment strategies, to promote sustainable development (Edmans & Kacperczyk, 2022). Trahan and Jantz (2023) note that due to the differences in ESG investment strategies and ESG ratings, it is difficult to pinpoint exactly what ESG investing is. Edmans and Kacperczyk (2022) continue to argue that ESG investing goes beyond the traditional focus on financial returns and it incorporates broader considerations related to environmental risks, social impacts, and governance practices, such as climate change, equal pay, and human rights. Integrating ESG factors into financial decision-making is a key principle in sustainable finance (Edmans & Kacperczyk, 2022).

Other key principles in sustainable finance include risk management for identifying sustainability-related risks and opportunities to achieve better financial performance, and stakeholder management for addressing sustainability-related challenges and promoting sustainable practices (Cunha et al., 2021). Reporting can also be seen as a key principle, as it enables quantifying and measuring impact and provides transparency for investors (Cunha et al., 2021). All these principles influence sustainable finance in achieving a more responsible approach to financial decision-making.

2.5.4 Opportunities in incorporating sustainable frameworks

ESG considerations can have positive tangible effects, for example, alleviating financing constraints. According to Hartzmark and Sussman (2019), funds with higher incorporation of sustainable practices receive increased fund flows, as opposed to reductions in the funds with low sustainability ratings. They argue that investors expect the higher

sustainability-ranked funds to perform better and to have a more favorable risk profile. This phenomenon is attributed to the halo effect by the authors, where an impression formed on a specific area impacts the overall evaluation. Hartzmark and Sussman (2019) note that the sustainability rating is not directly related to the fund's fundamental performance or the risk profile, but the investors' perceptions under the halo effect allow the funds to receive higher inflows. Therefore, the market implicitly views sustainability practices as a positive attribute.

Humphrey et al. (2012) research the relationship between a company's social performance (CSP) and its financial performance, with a particular focus on its impact on the cost of capital and risk. The research reveals that firms with high and low CSP ratings demonstrate insignificant differences in risk-adjusted performance, suggesting that CSP does not influence overall risk or idiosyncratic risk profile.

The findings of Humphrey et al. (2012) reveal implications for both managers and investors. For managers, implementing ESG practices does not appear to compromise shareholder value, as there is no discernible impact on financial performance. This suggests that companies can integrate sustainable practices without incurring financial disadvantages. However, for investors relying solely on ESG analysis may not lead to identifying better investment opportunities, and the authors emphasize the need for comprehensive research to explore the relationship between ESG and financial performance. The ESG analyses should be considered as complementary to the traditional financial analysis, rather than an alternative (Humphrey et al., 2012).

Ng and Rezaee (2020) study the relationship between business sustainability performance, disclosure factors, and stock price informativeness (SPI), measured by idiosyncratic volatility. The research finds a positive correlation between ESG performance factors and SPI, even when controlling for economic performance. The findings imply that investors value not only environmental stewardship but also social and governance practices. Additionally, the study shows that ESG sustainability disclosure strengthens the

connection between performance factors and SPI, suggesting that transparent reporting of ESG efforts enhances investor perception and stock price informativeness, particularly during weaker economic periods.

Ng and Rezaee (2020) highlight the importance of considering both economic and ESG factors when making investment decisions and advocate for policymakers to develop regulations and standards for ESG disclosure, similar to existing financial reporting frameworks. The authors continue to encourage corporations to integrate ESG performance and disclosure into their reporting strategies to address investor preferences and potentially mitigate risk during economic challenges. While the study acknowledges limitations, such as potential variations in sustainability performance definitions, it underscores the increasing importance of financial and non-financial factors in investor decision-making. Moreover, Ng and Rezaee (2020) promote standardized and comprehensive ESG disclosure practices to navigate continuously evolving investor preferences and regulatory landscapes.

Nofsinger et al. (2019) study the relationship between institutional investors' perceptions of CSR and their investment decisions, with a specific focus on environmental and social aspects. Their findings highlight institutional investors' risk-averse approach, as demonstrated by their tendency to underweight stocks displaying weaknesses in ESG criteria. Moreover, investors display indifference towards stocks with ESG strengths. Nofsinger et al. (2019) continue to argue that investors with long-term horizons exhibit a heightened aversion to ESG weaknesses, indicative of their focus on long-term viability and risk management.

The findings of Nofsinger et al. (2019) demonstrate the economic rationale for risk management, as stocks with ESG weaknesses are associated with increased downside risks, crash risk, and the likelihood of negative events. According to the authors, portfolios with lower fractions of stocks containing ESG weaknesses achieve higher alphas, underscoring the link between CSR and financial value for institutional investors. The study also sheds

light on the dynamic nature of institutional investments in controversial products, such as tobacco, firearms, and gambling, revealing shifts in ownership patterns based on economic dynamics rather than static social norms.

2.5.5 Issues in incorporating sustainable frameworks

Gutierrez and Fallon (2021) study factors used in determining ESG ratings and the main focus of their paper is to study ESG factors in sin stocks. They note that even in ethically controversial industries such as alcohol or gambling, past good ESG performance correlates with better future ESG performance. This key finding leads Gutierrez and Fallon (2021) to hypothesize about a possible phenomenon called social cleaning. Gutierrez and Fallon (2021) define "social cleaning" as when a company's only goal in engaging in ESG operations is to lower the risk to its reputation while attempting to draw in a larger pool of socially conscious investors.

ESG ratings can also direct investments to environmentally questionable corporations or be used to mislead investors. According to Bloomberg (2023) Aramco, the largest oil company in the world, raised capital through special purpose vehicles (SPV) and having no direct link to the fossil-fuel industry, managed to acquire above-average ESG scores through third-party sustainability screening. Unsuspecting investors acquire these bonds, as they are ESG-rated, and include them in the sustainable portfolios (Bloomberg, 2023). On a related case, Tennessee (2023) reports that Attorney General Jonathan Skrmetti files a lawsuit against Blackrock, a $9.1 trillion asset manager, for the overstatement and misrepresentations of the extent to which ESG considerations affect companies' financial performance and outlook.

ESG, as a standard of responsible investing, has its problems. Due to its three-dimensional nature, a company with a high ESG rating may rank exceptionally high in just one of the criteria. According to Larcker et al. (2022), it is not easy to discern if a project by a company is genuinely responsible, which adds to the difficulty of evaluating its ESG

impact. The authors give an example of Bank of America's US\$ 1.25 billion initiative to advance racial equality and economic opportunity through health, job training, affordable housing, and small business investment. According to the authors, the Community Reinvestment Act mandates that Bank of America, like other federally licensed U.S. banks, provide services to low- and moderate-income communities where it conducts business. Further, Larcker et al. (2022) argue that Bank of America is reclassifying routine, ongoing expenditure activities as socially responsible investments.

Larcker et al. (2022) continue to criticize the inclusion of governance in ESG, which ensures that corporate management makes choices that are best for the company. The idea behind the necessity of governance is that managers are self-interested and will tend to make decisions that serve their interests, even when they conflict with the organization's interests if the right incentives and controls are not in place. Several control mechanisms are implemented to counteract this tendency, such as compensation incentives awarded to executives for meeting the targets, internal controls that guarantee the integrity of financial reporting, and an independent board of directors that provides advice and oversight to executives (Larcker et al., 2022).

2.5.6   Stakeholder theory

The instrumental stakeholder theory, introduced by Jones (1995), is based on a synthesis of the stakeholder concept, economic theory, behavioral science, and ethics. It proposes that a subset of ethical principles, such as trust, trustworthiness, and cooperativeness, can result in a competitive advantage. The theory considers the performance consequences for firms of highly ethical relationships with stakeholders, characterized by high levels of trust, cooperation, and information sharing.

Zheng et al. (2023) utilizes this theory in their rationale for the findings in the context of M&A. They find that the high-ESG rated corporations earns higher CARs and the subsequent financial performance is improved. The authors argue that firms exhibiting high

ESG standards can increase the operative performance through their commitment to socially responsible practices, increase trust among their stakeholders, which include employees, capital providers, and regulatory authorities. According to Zheng et al. (2023), this trust is cultivated through the firm's reputation for adhering to implicit contracts. Stakeholders, in turn, reciprocate this trust by investing their resources and efforts into the operations of the firm. The created relationship ultimately leads to improved firm performance (Zheng et al., 2023).

The shareholder value maximization theory by Friedman (1970) proposes that the primary responsibility of a corporation is to its shareholders, and the main goal of the corporation should be to maximize shareholder value. The stakeholder theory by Jones (1995) suggests that corporations should consider the interests of all stakeholders, not just shareholders. The theory proposes that ethical relationships with stakeholders can result in significant competitive advantage and can be seen as the opposite of the shareholder theory.

However, all researchers do not see that either is the optimal solution and Jensen (2002) proposes a synthesis of these two theories, called enlightened value maximization theory. This theory utilizes much of the structure of the stakeholder theory but accepts the maximization of the long-run value of the firm as the criterion for making trade-offs among its stakeholders. It specifies long-term value maximization as the firm's primary objective. Jensen (2002) argues that traditional stakeholder theory presents multiple objectives, which can lead to confusion and inefficiency. This approach aims to reconcile the focus on financial performance with the need to consider the interests of all stakeholders (Jensen, 2002).

3   Prior empirical evidence

This chapter introduces a review of previous literature regarding important topics for the thesis. In addition, understanding the previous literature is of great interest since it builds a basic understanding of the topic and reviews the main contributions done so far. The chapter is organized to first review standalone M&A studies, and afterward to introduce major studies, where ESG considerations are factored into the M&A decision-making process.

To highlight the current literature, Gillan et al. (2021) offer a comprehensive analysis of the literature on ESG and CSR within the realm of corporate finance. The authors argue that the relationship between ESG/CSR practices and firm performance is a highly debated topic in literature. Researchers question whether management decisions regarding corporate responsibility impact firm performance and conversely, whether performance or valuations drive ESG/CSR decisions. Gillan et al. (2021) note that the literature includes findings suggesting both positive and negative causal effects of ESG/CSR attributes on firm value. According to the authors, previous studies propose mechanisms through which ESG/CSR activities enhance firm value, including increasing shareholder wealth by improving cash flows and reducing discount rates, or by maximizing shareholder utility through the production of environmental or social goods. Conversely, some researchers argue that ESG/CSR activities may reflect managerial agency problems, suggesting that firms engage in ESG activities to enhance managerial utility rather than shareholder value. To conclude, corporate finance studies present mixed results regarding the relationship between firm performance or value and ESG/CSR considerations, with various methodologies and performance metrics employed to investigate this relationship (Gillan et al., 2021).

3.1 Shareholder wealth effects through M&A

In academic literature, it is commonly acknowledged that mergers and acquisitions do not, on average, result in positive abnormal returns for acquiring company shareholders. Renneboog and Vansteenkste (2019) suggest that, on average, M&A transactions are expected to generate value, which is reflected in the positive abnormal returns of the announcement. However, this value is not typically accumulated on the buy-side, as acquirers' announcement returns are typically negative or close to zero. According to Nguyen et al. (2012), acquirers' shareholders often experience negative CARs, yet M&A decisions are still made despite this information. Andrade et al. (2001) argue that M&A transactions are motivated by the desire to create market power, horizontal and vertical expansion, or similar synergy gains.

According to research by Jaffe et al. (2019), a significant portion of M&A deals, up to 83%, involve unlisted targets. The authors also discuss the potential discounts associated with private targets, as public company valuation is simpler due to daily market evaluation. This can lead to higher premiums, resulting in private targets being sold at a discount. However, the study finds no conclusive evidence of such discounts, and the negative CARs remained consistent across both target types.

In their study, Ma et al. (2011) aim to discover if M&A transactions result in long-term value creation. Rather than relying on the commonly used method of examining CARs, they focus on the intrinsic value of the combined entity. They argue that interpreting stock returns of stock-for-stock deals can create difficulties in resolving the misvaluation of stock prices. The study's empirical evidence suggests that M&A deals, on average, destroy intrinsic value in the long run, regardless of whether the destruction of value is measured as stock returns or changes in intrinsic value. Additionally, companies with higher initial intrinsic values experience more significant decreases than those with lower values. The authors attribute the decrease in intrinsic value to a decrease in forecasted earnings and an increase in the estimated cost of capital. As Amel-Zadeh and

Meeks (2019) note, transparency in forecasts can help mitigate the risk of post-transaction price crashes.

According to the research by Ghosh (2001), the combined entity's operating performance does not show any evidence of superior performance after acquisition. The study is based on the hypothesis that cash flows would increase post-transaction when compared to industry-median firms. However, the findings suggest that the positive findings are biased due to the research methods. Once adjusted for superior pre-acquisition performance and size differences, the results show a deterioration in operating performance. Similarly, Larkin and Lyandres (2022) find evidence of inefficiency in M&A transactions. They argue that not all targets are acquired by the most complementary bidder, leading to synergistic inefficiencies.

According to Akbulut (2013), utilizing overvalued equity as payment to generate wealth can have negative long-term consequences. His study reveals that over a period of three years, stock-for-stock acquisitions involving overvalued equity results in a significant underperformance of 17.8% BHAR. To account for any inaccuracies in valuation, Akbulut (2013) compares the results to similarly overvalued firms that did not undertake any acquisitions. Additionally, he notes that announcement returns are negative at 0.82% CAR, which is partially due to the correction of initial misvaluation. In a recent example of a stock-for-stock acquisition, YLE (2022) reports that the deal value of the acquisition of Wolt by Doordash almost halved in the time between announcement and completion due to the stock price crashing. A notable mention in the report of YLE (2002), is that the stock price reaction to the announcement is positive by 15 percent. However, statistical significance is not disclosed.

3.2 ESG criteria incorporation in M&A

The study by Bose et al. (2021) explores the connection between a company's carbon risk and its decisions to acquire other companies, as well as the market's response to

such announcements. Further, the study also examines whether CSR can alleviate or amplify the effects of carbon risk. Carbon emissions served as a proxy for measuring carbon risk. The results reveal that companies with high carbon risk tend to transfer their risks to foreign targets. Bose et al. (2021) note that acquiring companies with high carbon emissions are more likely to choose targets in less regulated, poorer countries with weaker shareholder protection and environmental controls. This trend is particularly noticeable when the acquiring company's home country has robust shareholder protection laws. Furthermore, the study discovers that focusing on CSR in this context can exacerbate the negative impact of carbon risk, leading to unfavorable market reactions, especially when the target country has strong governance or environmental protection and is affluent.

The study by Wang et al. (2021) highlights a critical balance that must be maintained in CSR investments to ensure they are beneficial rather than detrimental to shareholder value. The study suggests that while CSR initiatives can enhance a company's reputation and potentially lead to increased shareholder wealth, there is a tipping point beyond which additional investment does not yield further benefits and may even erode value. This phenomenon is attributed to agency conflicts, where managers may pursue CSR overinvestment to bolster their reputations at the expense of shareholders' interests (Wang et al., 2021). The findings imply the diminishing marginal utility of CSR investments.

The findings of Wang et al. (2021) provide evidence, which indicates that firms acquiring targets with excessive CSR commitments experience a decline in market reactions to M&A announcements, as well as a subsequent deterioration in financial performance. This outcome is particularly pronounced in firms with retiring CEOs or weak corporate governance structures, suggesting that these entities may be more susceptible to making value-destroying decisions related to CSR. Moreover, the study observes a correlation between increased CSR ratings and CEO compensation, implying that CEOs may have incentives to pursue high-CSR acquisitions, even if such actions are misaligned with

shareholder wealth maximization. This finding underscores the potential for agency problems to drive CSR overinvestment (Wang et al., 2021).

Zheng et al. (2023) research the financial effects of ESG practices in the context of M&As in China. Their study analyzes the overall level of ESG and its changes prior to M&As, and the results indicated that acquiring firms with robust ESG practices tend to exhibit better post-M&A performance compared to those with weaker ESG frameworks, supporting the instrumental stakeholder theory. This theory suggests that a high ESG rating fosters trust and stakeholder support, facilitating smoother integration processes and ultimately contributing to improved performance outcomes (Zheng et al., 2023).

According to Zheng et al. (2023), firms with low initial ESG levels experience performance improvements post-M&A upon enhancing their ESG practices. However, those with high initial ESG levels face performance declines if their ESG practices deteriorate before the transaction. This underscores the importance of sustained ESG commitment throughout the M&A process. Moreover, the research reveals that acquiring firms with a high ESG rating or those exhibiting improvement from a low initial level are more likely to successfully complete M&A deals, suggesting that strong ESG practices not only enhance performance but also bolster a firm's attractiveness and facilitate deal approval processes. The study further emphasizes the positive impact of the social and governance components of ESG on post-M&A performance, highlighting the multifaceted nature of ESG's benefits beyond environmental considerations.

Deng et al. (2013) investigate the relationship between CSR and merger outcomes, shedding light on the debate over stakeholder value maximization theory versus shareholder's. The authors find that high CSR acquirers experience higher announcement returns, improved long-term operating performance, and increased stock returns compared to low CSR acquirers. Additionally, Deng et al. (2013) argue that mergers conducted by high CSR acquirers are more likely to be completed and the completion is done

in a shorter period, indicating a positive relationship between CSR and overall merger outcomes.

According to Deng et al. (2013), the perspective of stakeholder value maximization suggests that companies with a strong focus on CSR are inclined to pursue mergers that serve the interests of shareholders and simultaneously prioritize the value of other stakeholders. The approach predicts that such mergers would enhance overall stakeholder value, consequently yielding increased positive outcomes for shareholders in the long run. However, the authors note that caution is needed when generalizing these findings beyond US mergers, as industry and geographic biases may exist.

Arouri et al. (2019) argue that high acquirer CSR leads to lower M&A uncertainty. Their study analyze 726 international M&A deals from 2004-2016 and challenged the shareholder-centric perspective. The study reveals a negative correlation between acquirer CSR and completion uncertainty, measured arbitrage spreads. Thus, the authors argue that by fostering trust and collaboration with the stakeholders, higher CSR ultimately facilitates smoother M&A processes with reduced uncertainty and disruption. The findings of Arouri et al. (2019) suggest that high-CSR acquirers face narrower arbitrage spreads, indicating stronger market confidence in deal completion. Furthermore, individual CSR dimensions contribute separately to decreased uncertainty, highlighting the multifaceted impact of responsible business practices. These findings imply a competitive edge in the M&A market as a risk mitigation strategy and potentially enhance deal success rates.

Crifo et al. (2015) examine the impact of disclosing ESG practices on private equity financing. The authors utilize an unconventional method to the existing literature, by researching professional private equity investors in simulated firm auctions and analyzing the effect of disclosing positive and negative ESG practices. The findings suggest that investors consider non-financial ESG information as valuable insight when making investment decisions. Moreover, the investors tend to react negatively towards unfavorable

ESG practices, leading to reduced bidding and lower firm valuation. The findings of Crifo et al. (2015) highlight the significance of implementing ESG practices as companies without responsible processes in place may face difficulties in accessing private equity financing and higher capital costs, ultimately harming the shareholders by reducing firm value. The irresponsible ESG practices have a negative impact on the perceived exit potential, thus private equity firms are more likely to allocate capital elsewhere (Crifo et al., 2015)

The existing literature presents multiple views on ESG investments and levels of CSR. However, the economic significance of the effect of ESG is not the main focus of the discussions. The findings of Zheng et al. (2023) and Wang et al. (2021) contradict each other, but the economic significance is near zero. The study by Wang et al. (2021) finds a negative effect on ROA of 0.8%, while the findings of Zheng et al. (2023) suggest a positive effect of 0.9%. To put the economic significance into perspective, according to EY (2023), the average integration costs of a transaction range from 1% to 4%. Further, Chen and Wu (2021) find that the average advisor fees are up to 0.72% of the deal value.

Wang et al. (2021) note that the economic significance of the findings might be low, but the level of CSR in the company subsequently increases post-transaction. The authors argue that the acquirers learn from the targets' CSR practices and experiences. They claim that low CSR acquirers are more inclined to buy CSR-overinvesting targets to improve their CSR performance. However, as pointed out by Buchanan et al. (2018), the CSR performance's impact on the valuation is dependent on the economic cycle and thus implying that the strategic acquisition to improve the level of CSR might not be beneficial depending on the timing of the acquisition.

Further, Wang et al. (2021) find that there is a positive correlation between CEO pay and the acquisitions of targets with excessive CSR investments. Thus, the decision to invest in high-CSR targets, even at the expense of the shareholders, could be influenced by the CEO's ambition to enhance the firm's CSR performance, as well as their compensation (Wang et al., 2021). However, as Nguyen et al. (2012) note, the majority of M&A

activities have multiple motives rationalizing the acquisition, implying that the CSR might be one of many reasons to engage in the transaction. Moreover, the agency problems within the company are heightened during merger waves according to Duchin and Schmidt (2013), attaching the timing of the acquisition to the equation.

The study by Zheng et al. (2023) does not provide a rationale for the results, but further studies the impact of ESG on deal completion. They find that both high-ESG acquirers and low-ESG bidders, with an increase in ESG performance prior to the transaction, are more likely to complete a deal. The findings concur with Arouri et al. (2019), who find that high-CSR acquirers face narrower arbitrage spreads, indicating stronger market confidence in deal completion. As the transaction fees are substantial according to Chen and Wu (2021), successful completion of the deal is preferrable to all participating sides of the transaction, oppose to tanking the fees for essentially nothing.

Zheng et al. (2023) continue to argue that their results support the instrumental stakeholder theory, implying that good ESG performance increases the relationship with the stakeholders, concurring with the findings of Deng et al. (2013). Additionally, it is argued that in the current economy of increasing sustainability requirements, as noted by Eurosif (2023), it is not a viable option to opt out of ESG-related investments completely. Most companies have, at least to some degree, ESG requirements to comply with, including the stakeholders of a company. Securing a contract from a stakeholder can be difficult, for example, if the customer requires a defined level of sustainability from the supplier and any competitive edge can be lost if the requirement is not met.

4 Data and methodology

This chapter introduces the data and methodologies to test the hypotheses. First, data collection and sources are reviewed. Secondly, the variables are showcased. Lastly, the chapter presents the methodologies for analyzing the data and examining the research questions.

4.1 Data description

The data used in this study is collected from the London Stock Exchange Group (LSEG) database, which collects all of the data used in this study from various sources. LSEG database is formerly known as Refinitiv. The study focuses on US acquirers; thus, the transactions are limited to the two largest stock exchanges in the US, the New York Stock Exchange (NYSE) and NASDAQ (Statista, 2023). The full unfiltered dataset consists of 42,076 M&A transactions between 2010 and 2023, with a total of 6,772 unique acquirers.

The studies by Christensen et al. (2022) and Berg et al. (2022) both state that there is variance in the ESG rating, thus the study implements ESG rating from only one source. The chosen source for the ESG ratings to conduct the study is from LSEG (2022), specifically the Thomson Reuters ESG Combined Score (TRESGCS), which is an overall company score based on the reported information in the environmental, social, and corporate governance pillars along with an overlay for ESG controversies. The ESG controversies category measures a company's exposure to environmental, social, and governance controversies, as well as negative events highlighted in global media. Figure 2 illustrates the ESG score considerations further. LSEG (2023) states that the scores range from 0 to 100 and the third and fourth quartiles are considered good and excellent relative ESG performance, respectively. Thus, the thesis considers a rating of fifty to be the dividing score for the split between high and low-ESG-rated firms.
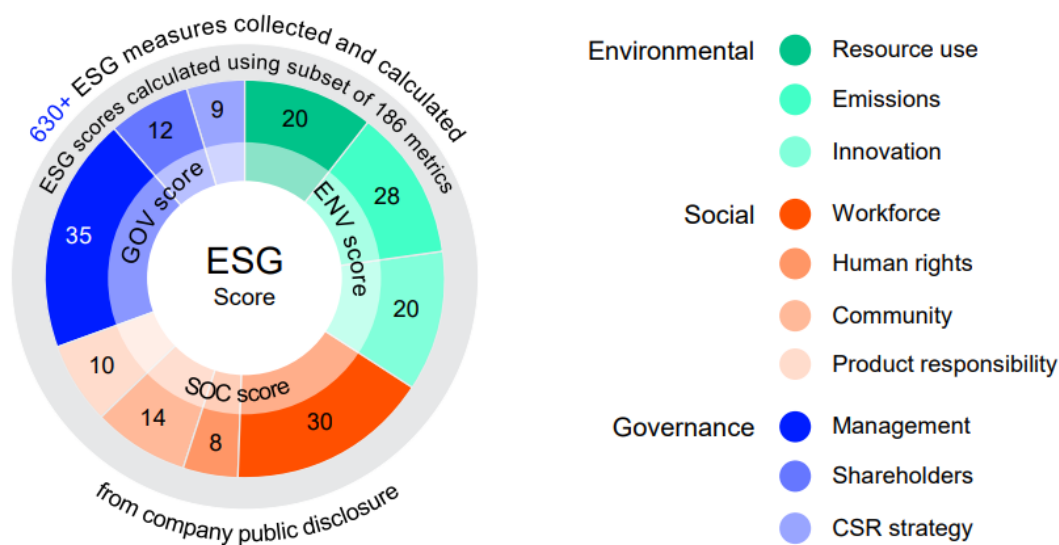
Figure 2. ESG score methodology (LSEG, 2022).

As the study examines the ESG scores and the impact on M&A transactions and the firm performance, the scores are needed from the targets as well as the acquirers. This criterion limits the number of transactions included in the study, as the targets can be small in size, and therefore might not have ESG data available. The final sample includes all M&As that meet the following criteria: The acquirer is publicly listed in NASDAQ or NYSE, the deal value is disclosed and exceeds US $1 million, the acquirer and target are in the LSEG ESG database and through the transaction, a change of control takes place. The change of control means that the final sample includes only transactions, where the acquirer purchases majority interest or a merger takes place. The final sample from implementing the criterion to the full dataset consists of 429 M&A transactions and 348 unique acquirers.

4.2   Methodology

Renneboog and Vansteenkiste (2019) note that measuring the value effects of the transaction can be complicated. They argue that performance can be measured as stock returns or accounting indicators. Still, both are subject to challenges in isolating the effect

of the M&A transaction from other effects within the same period. Andrade et al. (2001) state that the chosen model for calculating the expected returns over three years can differ from 30% to 65%. This study has two empirical approaches for answering the hypotheses and utilizes accounting indicators and stock returns. The first method is to estimate the average returns of the acquirers' experience in the event window around the announcement, as per common practice among M&A literature (Renneboog & Vansteenkiste, 2019; Wang et al., 2021). The second approach is to utilize a multiple linear regression model, where the CARs from the event study are further analyzed, similar to Wang et al. (2021) and Zheng et al. (2023).

4.2.1 Event study

Renneboog and Vansteenkiste (2019) argue that short- and long-term performance is generally measured using event study methodology. Commonly event studies are categorized into two groups. Firstly, cross-sectional models compare the returns of participating firms to benchmark firms of the same characteristics, such as size, industry, or market-to-book ratio. The second group is time-series models, where obtaining alpha coefficients from regressing participating companies returns to market with the market model from Brown and Warner (1985), three or five-factor models by Fama and French (2015), or the capital asset pricing model (CAPM) by Sharpe (1964).

The popular method of measuring long-term abnormal returns is calculating cumulative abnormal returns pre- and post-event windows. Fama (1998) notes that choosing the correct benchmark for the abnormal returns is crucial for the outcome to be reliable and valid. He defines the equation as follows for event window (t_1, t_2):

$$CAR_{(t_1,t_2)} = \sum_{t=t_1}^{t_2} AR_{i,t} \qquad (2)$$

Where, $\quad AR_{i,t}$ = abnormal return of the firm i at time t compared to the benchmark

The alternatively used method is buy-and-hold abnormal returns, where the returns are aggregated geometrically as opposed to CAR's arithmetically aggregated returns. Dutta (2015) defines the equation as follows for an *H*-period BHAR:

$$BHAR_{iH} = \prod_{t=1}^{H}(1 + R_{it}) - \prod_{t=1}^{H}(1 + R_{Bt}) \tag{3}$$

Where, R_{it} = return of the firm *i* at time *t*

R_{Bt} = return of the benchmark at time *t*

Renneboog and Vansteenkiste (2019) argue that the compounding effect is considered in the BHAR, but the effect is insignificant when the bias in the methodology is corrected. The issue with both models is that event studies assume independently distributed returns across the industry.

As Renneboog and Vansteenkiste (2019) note, the established practice in M&A literature is to perform an event study, where the cumulative abnormal returns are calculated. The market effect of an M&A transaction is measured with the abnormal stock returns in percentages around the announcement date. The study follows the approach by Wang et al. (2021), where the abnormal returns are measured by estimating the market model using daily stock returns in the two hundred trading days and ending 11 days before the M&A announcement. The market model, introduced by Brown and Warner (1985) is as follows:

$$AR_{i,t} = R_{i,t} - \hat{\alpha} - \hat{\beta}R_{m,t} \tag{4}$$

Where, $\hat{\alpha} \ and \ \hat{\beta}$ = Ordinary Least Squares values from the estimation period

The S&P 500 returns are used as a proxy for the market return. Daily abnormal stock returns are accumulated to obtain the CAR from day t_1 before the M&A announcement date to day t_2 after the M&A announcement date. This study utilizes multiple event

windows to comprehensively analyze the market reaction to the announcement. The study further utilizes the findings of Brown and Warner (1985) to test the statistical significance of the CARs. The method is widely used in existing literature, where an event study is conducted, and the author notes that the derived t-values consider the cross-sectional dependence in the security-specific excess returns.

4.2.2 Multiple linear regression

The study follows approaches derived from the existing literature, such as Zheng et al. (2023) and Wang et al. (2021). Zheng et al. (2023) define the general multiple linear regression model as follows:

$$Acquirer\ performance_{i,t} = \beta_0 + \beta_k \Sigma ESG_{i,t-1} + \beta_k \Sigma Acquirer\ controls_{i,t-1} + \beta_k Deal\ control_{i,t-1} + \epsilon_{i,t} \tag{5}$$

Where, i = acquirer index

t = time

Acquirer performance = CAR, ROA, or ROE

ESG rating = Acquirer and target ESG ratings or ESG upgrade dummy

Acquirer controls = Size, leverage, and market to book value

Deal control = Deal value

The specifications of the variables used in the study are further discussed in the next chapter.

4.3 Variables

The dependent variables used in the study include multiple variations as Renneboog and Vansteenkiste (2019) note, the use of accounting data alone to measure post-merger

performance suffers from inherent noisiness. Mergers often come with special depreci-
ation or amortization, write-downs, and restatements following divestitures of some ac-
quired assets, or subsequent M&A deals, making it difficult to isolate the effect of a mer-
ger event. Thus, the study utilizes the values derived from the event study as well.

The cumulative abnormal returns, as mentioned in chapter 4.2.1., are computed using
the market model, and CAR (*-1,1*) is the daily abnormal stock returns in percentages,
cumulated from one day before the M&A announcement date to one day after the M&A
announcement date. CARs (*-2,2*) and (*-5,5*) are calculated similarly to CAR (*-1,1*), with
the event window extended to two and five days before and after the transaction date,
respectively. The study also utilizes a binary version of the CARs, where the dummy var-
iable takes the value of 1 if the acquirer CAR is above the mean and zero if otherwise.
Further, in Table 12, the CARs are transformed with a natural logarithm, and if the value
is negative, the values are increased by the largest negative number plus one and then
the value is transformed.

The other dependent variables used in the regression are ROA and ROE, similar to Zheng
et al. (2023). ROA is measured as operating income before depreciation scaled by the
book value of total assets and ROE is measured as operating income before depreciation
scaled by the book value of equity.

The main independent variables include ESG characteristics. ESG ratings used are Thom-
son Reuters ESG Combined Score (TRESGCS) at the end of the fiscal year before the ac-
quisition announcement to capture the ESG performance before the transaction. Further,
the ESG rating is not available for the targets' post-transaction. The other variable used
in the study is ESG upgrade, a binary variable that takes the value of 1 if the acquirer has
an ESG rating upgrade in the year prior to the M&A announcement year, and zero oth-
erwise.

Control variables multiple regression analysis include firm- and industry-specific charac-teristics derived from the literature (Wang et al., 2021; Zheng et al., 2023). The variables include acquirer size (SIZE), calculated as the natural logarithm of the acquirer's book value of assets at the end of the fiscal year before the acquisition announcement, ac-quirer leverage (LEV), calculated as the ratio of total debt to total assets at the end of the fiscal year before the acquisition announcement, MTBV, which is the market value of equity divided by the book value of equity. Additionally, the study includes a transac-tion-specific control variable, the deal size (DSIZE), calculated as the natural logarithm of the deal value, excluding net debt. According to Zheng et al. (2023), these variables have been utilized to examine the relationship between post-M&A performance and ESG in the existing literature.

5   Results and discussion

The chapter shows the results of the empirical analysis. The chapter first shows the descriptive statistics of the data utilized in the study. The study focuses on the event study in the second chapter and examines the first hypothesis. The third chapter shows the regression results with the full sample and the subsequent samples derived from the full sample based on the acquirer ESG rating. The final chapter shows supportive regressions to further analyze the results.

5.1   Descriptive analysis

Table 1 shows the descriptive statistics of the full data sample. The cumulative abnormal returns are presented in percentages and further analyzed in the subsequent chapter. The acquirer ESG ratings are mostly balanced in the range of 0 to 100 and the average acquirer has a rating of 49. Contrarily, the targets have, on average, poor relative ESG performance and an insufficient degree of transparency in reporting material based on the score range by LSEG (2023). The lower ratings are expected, as achieving a high ESG rating requires investments, which might not be a priority in small and medium-sized enterprises (SME).

Table 1. Descriptive statistics.

Variable	N =	Mean	Median	Maximum	Minimum	Std. Dev.
CAR (-1,1)	429	-2.176	-1.592	28.344	-39.124	7.338
CAR (-2,2)	429	-2.165	-1.601	27.505	-40.783	7.940
CAR (-5,5)	429	-2.174	-1.418	35.386	-40.082	8.918
ROA	429	5.052	4.690	48.640	-91.310	10.724
ROE	429	14.072	10.920	92.050	-85.000	20.793
Acquirer ESG	429	48.536	48.750	92.930	0.000	22.751
Target ESG	429	27.686	26.070	86.550	0.000	19.281
Deal Size	429	7.827	7.782	11.341	2.531	1.563
LEV	429	0.292	0.282	0.991	0.000	0.202
MTBV	429	6.420	2.450	49.477	-76.450	28.160
SIZE	429	16.429	16.396	20.874	11.746	1.593
ESGUP	429	0.529	1.000	1.000	0.000	0.500

5.2   Results of the event study

The event study results are presented in Table 2 and the values are the mean cumulative abnormal returns across the sample. The results are consistent with the existing literature, as the abnormal returns are, on average, negative in M&A transactions (Renneboog & Vansteenkiste, 2019). The full sample, in the first row of Table 2, does not consider the ESG status and shows statistically significant negative returns across all event windows. Further, the economic significance holds considerable importance across the samples in Table 2. The similarity of announcement impact across the event windows can be explained through weekends when the stock market is not open. The results imply that the majority of the market reaction is, on average, accumulated in the first days around the announcement.

Table 2. Event study results.

The superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. The t-statistics are in parentheses.

Variable	Obs.	CAR (-1,1)	CAR (-2,2)	CAR (-5,5)
Full sample	N = 429	-2.165***	-2.176***	-2.174***
		(-17.707)	(-13.648)	(-9.239)
High ESG acquirer	N = 188	-1.368***	-1.586***	-1.492***
		(-9.226)	(-6.166)	(-4.532)
Low ESG Acquirer	N = 241	-2.787***	-2.636***	-2.706***
		(-13.596)	(-11.133)	(-7.289)
High ESG Target	N = 61	-1.749***	-1.660***	-1.790***
		(-5.821)	(-4.750)	(-3.278)
Low ESG Target	N = 368	-2.234***	-2.261***	-2.238***
		(-16.156)	(-12.364)	(-8.348)

The event study results in Table 2 show that, on average, high-ESG acquirers M&A transaction performance is better than the low-ESG counterparts. The results show that the CARs are statistically significant, and the mean returns are higher by 1.05 percentage points in the five-day window. However, the CARs are still negative at -1.59%. The last two rows of Table 2 show similar results with the target split, as the five-day window returns of acquirers targeting low-ESG firms are 0.6 percentage points lower than those acquiring high-ESG targets. The results challenge the first hypothesis, as it seems to be beneficial to acquire high-ESG targets, based on Table 2.

Table 3. Scenario event study results.

The superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. The t-statistics are in parentheses.

Variable	Obs.	CAR (-1,1)	CAR (-2,2)	CAR (-5,5)
High ESG Acquirer, Low ESG Target	N = 145	-1.511*** (-8.317)	-1.685*** (-5.778)	-1.596*** (-4.115)
High ESG Acquirer, High ESG Target	N = 43	-0.886* (-3.405)	-1.252*** (-1.868)	-1.14 (-1.617)
Low ESG Acquirer, Low ESG Target	N = 223	-2.704*** (-13.020)	-2.636*** (-10.345)	-2.655*** (-6.847)
Low ESG Acquirer, High ESG Target	N = 18	-3.810*** (-5.007)	-2.637*** (-5.605)	-3.348*** (-3.320)

Table 3 shows a further detailed analysis of the CARs, with the full sample split into categories based on the ESG rating of the transaction parties. The table shows similar results as Table 2, with high-ESG acquirers cumulating higher abnormal returns, regardless of the target status. Moreover, high-ESG acquirers targeting high-ESG firms seem to have superior performance compared to others. The five-day window returns are the only statistically significant at the 1% level but show a clear difference from others in absolute value. However, the sample size is lower in high-ESG targets as noted in Table 1. The results of Table 3 further undermine the first hypothesis and also challenge the second hypothesis.

5.3 Regression results

The chapter utilizes findings from the event studies and further adds financial performance measures to the regressions dependent variables. The first regression of the study is presented in Table 4, where the main independent variables include both acquirer and target ESG ratings. The results indicate that the ESG status of either side of the transaction does not impact the announcement returns or the financial performance. Return on equity does have a statistical significance at the 5% level, but the economic significance is low, especially in comparison to the control variables. Furthermore, the R-squared values indicate that the regression models do not have a good explanatory power.

Table 4. Multivariate regression results.

The superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. The t-statistics are in parentheses.

Sample	*Full sample*				
Variable	**CAR (-1,1)**	**CAR (-2,2)**	**CAR (-5,5)**	**ROA**	**ROE**
N =	429	429	429	429	429
Acquirer ESG	0.010	0.017	0.005	0.039	0.120**
	(0.557)	(0.890)	(0.238)	(1.531)	(2.433)
Target ESG	0.003	0.004	-0.006	0.003	0.004
	(0.170)	(0.200)	(-0.236)	(0.092)	(0.072)
SIZE	0.674**	0.745***	0.668**	0.478	1.848**
	(2.530)	(2.590)	(2.054)	(1.269)	(2.509)
LEV	1.670	1.268	1.724	7.479***	14.979***
	(0.949)	(0.667)	(0.802)	(3.007)	(3.077)
MTBV	0.003	0.005	0.003	0.027	0.028
	(0.275)	(0.396)	(0.177)	(1.542)	(0.810)
Deal Size	-0.346	-0.397	-0.248	0.914**	-0.689
	(-1.262)	(-1.338)	(-0.742)	(2.357)	(-0.907)
R-squared	0.022	0.025	0.014	0.085	0.083
Adjusted R-squared	0.008	0.011	0.000	0.072	0.070
F-statistic	1.568	1.793	0.966	6.571	6.348
S.D. dependent var	7.338	7.940	8.918	10.724	20.793
Akaike info criterion	6.832	6.987	7.231	7.524	8.867
Schwarz criterion	6.898	7.053	7.297	7.590	8.933
Hannan-Quinn criter.	6.858	7.013	7.257	7.550	8.893
Durbin-Watson stat	2.085	2.100	2.072	2.168	2.097

Table 5 shows the same regression as Table 4, with an additional independent variable to improve the regression model's robustness. The added variable is the interaction of the ESG variables, shown in the first row. However, the results persist and do not show an improvement in the model on an R-squared basis or in the p-values of the ESG variables.

Table 5. Multivariate regression results.

The superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. The t-statistics are in parentheses.

Sample	Full sample				
Variable	**CAR (-1,1)**	**CAR (-2,2)**	**CAR (-5,5)**	**ROA**	**ROE**
N =	429	429	429	429	429
Acquirer ESG * Target ESG	0.000	0.000	0.001	-0.001	0.000
	(0.033)	(0.246)	(0.847)	(-0.640)	(0.004)
Acquirer ESG	0.009	0.012	-0.017	0.058	0.120
	(0.334)	(0.386)	(-0.493)	(1.477)	(1.566)
Target ESG	0.002	-0.007	-0.050	0.041	0.003
	(0.040)	(-0.141)	(-0.869)	(0.621)	(0.026)
SIZE	0.674**	0.745**	0.667**	0.478	1.848**
	(2.527)	(2.587)	(2.052)	(1.269)	(2.506)
LEV	1.675	1.310	1.886	7.337***	14.981***
	(0.947)	(0.685)	(0.874)	(2.936)	(3.061)
MTBV	0.003	0.006	0.004	0.027	0.028
	(0.276)	(0.412)	(0.236)	(1.492)	(0.808)
Deal Size	-0.348	-0.406	-0.284	0.945**	-0.689
	(-1.255)	(-1.357)	(-0.841)	(2.417)	(-0.900)
R-squared	0.022	0.025	0.015	0.086	0.068
Adjusted R-squared	0.006	0.009	-0.001	0.071	0.053
F-statistic	1.341	1.542	0.930	5.683	4.400
S.D. dependent var	7.338	7.940	8.918	10.724	20.793
Akaike info criterion	6.837	6.991	7.234	7.528	8.871
Schwarz criterion	6.913	7.067	7.309	7.603	8.947
Hannan-Quinn criter.	6.867	7.021	7.264	7.557	8.901
Durbin-Watson stat	2.085	2.100	2.069	2.167	2.097

Table 6 shows a further attempt to improve the multivariate regression model. The ESG variables are transformed into binary values, where the variable takes a value of 1 if it is above the median and zero if otherwise. The results still indicate that there is no statistically significant effect for ESG variables, except for the regression where the dependent variable is the return on equity. Acquirers ESG is statistically significant in the 5% level and the coefficient suggests that considering ESG ratings could be an important factor in

assessing the potential return on equity of companies. Higher ESG ratings may signal better management practices, reduced risks, and enhanced long-term performance, thereby leading to higher returns on equity. However, considering the explanatory power of the model and the other control variables, especially leverage, the results cannot be generalized. Furthermore, the other regressions do not show any statistically significant results for the ESG variables.

Table 6. Multivariate regression results (dummy).

The superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. The t-statistics are in parentheses.

Sample	*Full sample*				
Variable	**CAR (-1,1)**	**CAR (-2,2)**	**CAR (-5,5)**	**ROA**	**ROE**
N =	429	429	429	429	429
Acquirer ESG (dummy)	0.391	0.721	0.618	1.811	4.583**
	(0.475)	(0.811)	(0.615)	(1.560)	(2.012)
Target ESG (dummy)	0.568	0.356	0.290	1.116	2.390
	(0.519)	(0.301)	(0.217)	(0.722)	(0.788)
SIZE	0.683**	0.753***	0.624*	0.471	1.938***
	(2.551)	(2.602)	(1.910)	(1.247)	(2.614)
LEV	1.681	1.291	1.728	7.530***	15.163***
	(0.956)	(0.679)	(0.805)	(3.031)	(3.112)
MTBV	0.004	0.006	0.003	0.028	0.031
	(0.297)	(0.412)	(0.179)	(1.582)	(0.884)
Deal Size	-0.377	-0.406	-0.320	0.828**	-0.808
	(-1.355)	(-1.348)	(-0.941)	(2.106)	(-1.048)
R-squared	0.022	0.025	0.014	0.087	0.066
Adjusted R-squared	0.008	0.011	0.000	0.074	0.053
F-statistic	1.603	1.788	1.025	6.727	4.990
S.D. dependent var	7.338	7.940	8.918	10.724	20.793
Akaike info criterion	6.832	6.987	7.230	7.522	8.869
Schwarz criterion	6.898	7.053	7.296	7.588	8.935
Hannan-Quinn criter.	6.858	7.013	7.256	7.548	8.895
Durbin-Watson stat	2.085	2.100	2.070	2.146	2.082

Tables 7 and 8 show an additional analysis of the sample, where the sample is split based on the ESG rating of the acquirer. However, the results are similar to the full sample, where the ESG variable does not show any statistical significance and the explanatory power is low.

Table 7. Subsample regression results, high-ESG acquirer.

The superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. The t-statistics are in parentheses.

Sample	*High ESG Acquirer*				
Variable	**CAR (-1,1)**	**CAR (-2,2)**	**CAR (-5,5)**	**ROA**	**ROE**
N =	188	188	188	188	188
Target ESG	0.021	0.025	0.012	-0.015	-0.010
	(1.021)	(1.083)	(0.453)	(-0.500)	(-0.151)
SIZE	0.756**	0.656*	0.757*	-0.951**	-0.394
	(2.453)	(1.875)	(1.893)	(-2.078)	(-0.387)
LEV	5.226**	4.943*	5.854*	3.677	23.618***
	(2.002)	(1.667)	(1.727)	(0.948)	(2.738)
MTBV	0.004	0.007	0.004	0.025*	0.052
	(0.426)	(0.618)	(0.335)	(1.674)	(1.526)
Deal Size	-0.963***	-0.975***	-0.698	0.786	-0.507
	(-2.932)	(-2.613)	(-1.635)	(1.611)	(-0.467)
R-squared	0.069	0.052	0.035	0.052	0.059
Adjusted R-squared	0.043	0.026	0.009	0.026	0.033
F-statistic	2.683	1.987	1.323	2.009	2.291
S.D. dependent var	5.612	6.316	7.161	8.266	18.451
Akaike info criterion	6.275	6.529	6.798	7.067	8.666
Schwarz criterion	6.379	6.633	6.901	7.170	8.769
Hannan-Quinn criter.	6.317	6.571	6.840	7.109	8.707
Durbin-Watson stat	1.907	1.973	1.985	2.214	2.229

Table 8. Subsample regression results, low-ESG acquirer.

The superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

The t-statistics are in parentheses.

Sample	*Low ESG Acquirer*				
Variable	**CAR (-1,1)**	**CAR (-2,2)**	**CAR (-5,5)**	**ROA**	**ROE**
N =	241	241	241	241	241
Target ESG	-0.003	-0.006	-0.018	0.037	0.046
	(-0.084)	(-0.162)	(-0.446)	(0.809)	(0.549)
SIZE	0.717*	0.929**	0.616	1.545***	3.906***
	(1.732)	(2.112)	(1.240)	(2.734)	(3.733)
LEV	-0.052	-0.590	0.076	7.018**	9.930
	(-0.022)	(-0.231)	(0.026)	(2.140)	(1.636)
MTBV	0.004	0.002	-0.003	0.031	-0.099
	(0.094)	(0.054)	(-0.058)	(0.573)	(-0.999)
Deal Size	0.081	0.010	0.013	1.085*	-0.359
	(0.196)	(0.023)	(0.027)	(1.934)	(-0.345)
R-squared	0.015	0.021	0.008	0.104	0.078
Adjusted R-squared	-0.005	0.000	-0.013	0.085	0.058
F-statistic	0.740	1.009	0.380	5.463	3.981
S.D. dependent var	8.425	8.970	10.061	12.054	21.992
Akaike info criterion	7.130	7.250	7.493	7.752	8.984
Schwarz criterion	7.217	7.337	7.580	7.839	9.070
Hannan-Quinn criter.	7.165	7.285	7.528	7.787	9.019
Durbin-Watson stat	1.951	1.987	2.002	2.096	2.112

Table 9 presents regression estimates of ESG rating on one-year post-M&A performance. The full sample is divided into two subsamples by the median of the ESG rating of all acquirers. Acquirers with ESG higher than the median at the initial stage, which is the end of year t-2, are classified into the subsample of high initial ESG acquirers and others are classified into the subsample of low initial ESG acquirers. The dependent variables are ROA and ROE, which are the acquirers' return on assets and return on equity one year later than the year of M&A.

The results of Table 9 indicate that the low initial ESG acquirers, who are able to upgrade their ESG rating prior to the transaction, will receive lower post-M&A performance. The finding contradicts with the findings of Zheng et al. (2023), where the results indicate the opposite. The authors conclude that consistent with the prediction of the law of diminishing utility of stakeholders, the effect of the change in the acquirer's ESG level on post-M&A performance is asymmetric and dependent on the initial ESG performance. However, the sample sizes in the regressions of Table 9 are low and the statistical significance across the regressions for the ESG upgrade variables does undermine the findings.

Table 9. Change in ESG level and post-M&A performance.

The superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. The t-statistics are in parentheses.

Sample	*High initial ESG*		*Low initial ESG*	
Variable	**ROA**	**ROE**	**ROA**	**ROE**
N =	188	188	241	241
ESG upgrade	-2.027	-1.394	-2.859*	-1.479
	(-1.625)	(-0.500)	(-1.878)	(-0.522)
SIZE	-1.121**	-0.511	1.469***	3.872***
	(-2.402)	(-0.489)	(2.607)	(3.689)
LEV	3.976	23.823***	7.464**	10.220*
	(1.031)	(2.762)	(2.287)	(1.682)
MTBV	0.024	0.050	0.034	-0.096
	(1.577)	(1.493)	(0.648)	(-0.968)
Deal Size	0.869*	-0.449	1.247**	-0.231
	(1.884)	(-0.435)	(2.245)	(-0.223)
R-squared	0.065	0.060	0.115	0.078
Adjusted R-squared	0.039	0.035	0.096	0.058
F-statistic	2.513	2.340	6.103	3.975
S.D. dependent var	8.266	18.451	12.054	21.992
Akaike info criterion	7.054	8.664	7.740	8.984
Schwarz criterion	7.157	8.768	7.827	9.070
Hannan-Quinn criter.	7.096	8.706	7.775	9.019
Durbin-Watson stat	2.191	2.229	2.088	2.109

5.4 Additional analyses

Table 10. Scenario High ESG Acquirer, Low ESG Target.

The superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

The t-statistics are in parentheses.

Sample	*High Acquirer Low Target*				
Variable	**CAR (-1,1)**	**CAR (-2,2)**	**CAR (-5,5)**	**ROA**	**ROE**
N =	145	145	145	145	145
Acquirer ESG	0.020	0.042	0.025	0.090	0.254
	(0.425)	(0.801)	(0.407)	(1.266)	(1.646)
Target ESG	-0.012	-0.017	-0.033	-0.087*	-0.153
	(-0.369)	(-0.463)	(-0.782)	(-1.777)	(-1.450)
SIZE	0.865**	0.749*	0.850*	-0.945*	-0.596
	(2.427)	(1.839)	(1.801)	(-1.726)	(-0.503)
LEV	5.773**	5.322	5.237	1.848	18.482*
	(1.932)	(1.559)	(1.323)	(0.403)	(1.862)
MTBV	-0.001	0.002	-0.002	0.016	0.022
	(-0.082)	(0.169)	(-0.150)	(1.009)	(0.622)
Deal Size	-0.777**	-0.798*	-0.505	0.320	-1.289
	(-2.039)	(-1.833)	(-1.001)	(0.547)	(-1.019)
R-squared	0.080	0.064	0.044	0.079	0.099
Adjusted R-squared	0.040	0.023	0.003	0.039	0.060
F-statistic	1.993	1.571	1.060	1.975	2.526
S.D. dependent var	5.542	6.281	7.202	8.506	18.610
Akaike info criterion	6.269	6.536	6.831	7.127	8.671
Schwarz criterion	6.413	6.680	6.975	7.270	8.814
Hannan-Quinn criter.	6.327	6.595	6.890	7.185	8.729
Durbin-Watson stat	1.813	1.828	1.751	2.315	2.293

Table 11. Scenario Low ESG Acquirer, Low ESG Target.

The superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively.

The t-statistics are in parentheses.

Sample	*Low Acquirer Low Target*				
Variable	**CAR (-1,1)**	**CAR (-2,2)**	**CAR (-5,5)**	**ROA**	**ROE**
N =	223	223	223	223	223
Acquirer ESG	-0.009	-0.007	-0.050	0.000	0.051
	(-0.246)	(-0.164)	(-1.064)	(0.000)	(0.504)
Target ESG	0.007	0.013	-0.010	0.054	0.076
	(0.170)	(0.306)	(-0.206)	(0.911)	(0.697)
SIZE	0.801*	1.006**	0.732	1.601***	3.886***
	(1.930)	(2.323)	(1.443)	(2.683)	(3.530)
LEV	-0.113	-0.603	-0.230	7.270**	10.647*
	(-0.047)	(-0.240)	(-0.079)	(2.105)	(1.670)
MTBV	-0.001	-0.004	-0.007	0.026	-0.104
	(-0.022)	(-0.102)	(-0.152)	(0.465)	(-1.014)
Deal Size	0.228	0.158	0.228	1.180*	-0.576
	(0.516)	(0.342)	(0.423)	(1.857)	(-0.491)
R-squared	0.023	0.030	0.018	0.102	0.077
Adjusted R-squared	-0.004	0.003	-0.010	0.077	0.051
F-statistic	0.852	1.108	0.651	4.101	3.009
S.D. dependent var	8.245	8.636	10.047	12.369	22.512
Akaike info criterion	7.092	7.178	7.493	7.819	9.044
Schwarz criterion	7.199	7.285	7.600	7.926	9.151
Hannan-Quinn criter.	7.135	7.221	7.536	7.862	9.087
Durbin-Watson stat	2.076	2.093	2.112	1.939	2.060

Tables 10 and 11 include subsamples, where the acquirer ESG status is split into high and low acquirers, respectively. Further, the sample discards high ESG targets from the sample. Through this regression, the study intends to gain insight into whether the acquirers' ESG status has an impact on the M&A performance when acquiring a low-ESG target. However, the results are similar to the previous regressions, where the overall economic and statistical significance are insignificant for the ESG variables.

Table 12 presents additional regressions, with variations to the multivariate regression presented in Table 4 to increase the robustness of the analysis. The structure is similar to Table 4, with some of the variables transformed into binary values based on the median or transforming variables using the natural logarithm. The natural logarithm transformation variables are indicated by LN in the label and dummy if the variable is a binary value. As the dependent variables have been transformed to binary values in columns 1 and 3, a logit regression is utilized instead of the linear regression. The findings from the regressions presented in Table 12 are consistent with the previous regression findings, where the ESG variables are economically and statistically insignificant.

Table 12. Additional regressions.

The superscripts *, **, and *** denote significance at the 10%, 5%, and 1% level, respectively. The t-statistics are in parentheses. In the case of Logit regression (first and second column), z-statistics are in parentheses.

Sample	*Full sample*				
Variable	**CAR (-1,1) Dummy**	**LN CAR (-2,2)**	**CAR (-5,5) Dummy**	**CAR (-5,5)**	**LN CAR (-3,3)**
N =	429	429	429	429	429
Acquirer ESG	0.005	-0.005			
	(0.960)	(-1.428)			
Target ESG	-0.002	-0.002			
	(-0.325)	(-0.626)			
Acquirer ESG (dummy)			0.373		
			(1.634)		
Target ESG (dummy)			-0.025		
			(-0.081)		
LN Acquirer ESG				-0.679	-0.022
				(-1.336)	(-0.272)
LN Target ESG				-0.042	-0.058
				(-0.131)	(-1.107)
SIZE	0.204***	0.012	0.064	0.750**	-0.010
	(2.669)	(0.224)	(0.860)	(2.419)	(-0.194)
LEV	1.300***	-0.632*	0.965*	1.680	-0.654*
	(2.575)	(-1.817)	(1.958)	(0.784)	(-1.876)
MTBV	-0.002	-0.002	0.000	0.004	-0.002
	(-0.498)	(-0.758)	(0.001)	(0.233)	(-0.854)
Deal Size	-0.139*	0.010	-0.071	-0.183	-0.006
	(-1.784)	(0.189)	(-0.913)	(-0.570)	(-0.112)
McFadden R-squared	0.029		0.015		
LR statistic	17.085		8.618		
R-squared		0.017		0.018	0.014
Adjusted R-squared		0.003		0.004	0.000
F-statistic		1.193		1.254	1.000
S.D. dependent var	0.499	1.446	0.500	7.227	1.446
Akaike info criterion	1.373	3.589	1.395	7.293	3.592
Schwarz criterion	1.439	3.656	1.461	7.253	3.658
Hannan-Quinn criter.	1.399	3.616	1.421	2.082	3.618
Durbin-Watson stat		2.023		0.000	2.024

6 Conclusion

The purpose of this thesis is to contribute to the existing literature on the effect of incorporation of ESG practices on the returns, as it is currently mixed. Thus, the two hypotheses concentrate on the relation between ESG practices, the returns in M&A transactions, and the subsequent financial performance.

The findings of this study on the announcement returns are consistent with the existing literature, where the cumulative abnormal returns are negative on average. The findings imply that mergers and acquisitions are not value accretive on average and should not be conducted. However, the data suggests that the acquirers with high-ESG performance seem to outperform the low-ESG counterparts. Moreover, the market reaction to the acquisitions by high-ESG bidders is the least negative, when the target also has a good ESG performance. These findings align with the principles of sustainable finance and the stakeholder theory.

The findings of the event study imply that high-ESG acquirers are superior acquirers, but it does not answer why that is. In extending the conclusions to the regression analysis, it is noteworthy to observe that while the size and leverage variable coefficients attained statistical significance, the ESG variables do not exhibit the hypothesized outcome. The majority of the regressions show insignificant economic and statistical significance. Despite the initial evidence in the event studies pointing towards the superiority of high-ESG acquirers, the regression results indicate that ESG considerations alone may not serve as reliable predictors of financial outcomes in M&A activities. Thus, both of the hypotheses, although with some degree of uncertainty, are rejected as the findings of the event studies are highly statistically significant and oppose the hypothesized outcomes.

The potential influence of the sample size in the study on the results cannot be overlooked. The limitations imposed by a relatively small sample size might have contributed to the observed outcomes, including the failure to establish statistically significant

relationships between ESG performance and M&A outcomes. The limited sample size may also constrain the generalizability of the findings. The full sample, without constraints, includes over 42,000 transactions from over 6,700 unique acquirers, whereas the filtered dataset only includes 429 transactions. The major limitation to obtaining a broader sample arises from the research question, where the target ESG rating has to be known. The majority of the targets are unlisted, smaller targets and thus the ESG data is scarce. However, the incorporation of ESG-related reporting, such as EU Taxonomy and CSDR, might alleviate these constraints for a similar study in the future. Furthermore, the reliability of the ESG measures, notably ESG ratings, could be increased as they are currently non-standardized (Christensen et al., 2022).

The failure to establish a statistically significant relationship between ESG variables and M&A outcomes prompts a critical re-evaluation of the presumed linkages between corporate sustainability initiatives and financial performance. It suggests that while ESG considerations may remain important for firms from a broader corporate responsibility perspective, their direct impact on M&A performance and financial outcomes may be less pronounced. The significance of the company's size and leverage influencing M&A and financial performance underscores the importance of firm characteristics and financial structure in merger and acquisition activities. Larger firms may possess greater resources and bargaining power, potentially leading to more favorable outcomes in M&A transactions. Similarly, the influence of leverage suggests that the financial leverage of acquirers may impact their ability to generate abnormal returns and enhance financial performance following M&A activities.

Although the study does not find a statistically significant link between ESG and financial performance, the findings have similarities to the studies of Wang et al. (2021) and Zheng et al. (2023) in terms of economic significance. Both of the aforementioned studies find near zero effect on ROA and the studies offer a range of rationale to execute M&A transactions regardless. Wang et al. (2021) propose that acquiring a high-CSR target improves the bidder's CSR practices. However, the management's engagement in

such a transaction might not benefit shareholders as they can be acting in their self-interest to increase compensation. Zheng et al. (2023) argue that ESG performance increases the deal completion likelihood, and the findings imply that the relationships with stakeholders are improved through good ESG practices.

With upcoming reporting requirements such as EU Taxonomy and CSDR, it is difficult to ignore the importance of overall ESG performance, as pointed out by Eurosif (2023). Moreover, as the majority of corporations are increasingly required to consider the sustainability of their business, access to major commercial relationships with stakeholders can be impeded by the lack of good ESG practices. Should the ESG investments be currently economically indifferent from zero, the status might change in the future. The enlightened value maximization theory by Jensen (2002), where both the shareholders and stakeholders are considered, might be the most relevant approach to ESG.

Given these considerations, future research should prioritize efforts to expand the sample size and enhance the robustness of the findings. This may involve aggregating data from multiple sources or extending the study period to mitigate the impact of small sample sizes on the reliability and validity of the findings. Moreover, the economic significance of the findings requires a closer evaluation, as it is in the center of the fundamentals of investments.

On a final note, the existing literature on ESG in M&A is limited and contradictory, which calls for further research on the topic. The importance of sustainability is growing, and conclusive results are necessary for corporations, investors, and nations alike to be able to make informed decisions.

References

Agrawal, A., Jaffe, J. F., & Mandelker, G. N. (1992). The Post-Merger Performance of Acquiring Firms: A Re-examination of an Anomaly. *The Journal of Finance, 47*(4), 1605-1621. https://doi.org/10.1111/j.1540-6261.1992.tb04674.x

Akbulut, M. E. (2013). Do Overvaluation-driven Stock Acquisitions Really Benefit Acquirer Shareholders? *Journal of Financial & Quantitative Analysis, 48*(4), 1025-1055. https://doi.org/10.1017/S0022109013000379

Akdoğu, E. (2009). Gaining a competitive edge through acquisitions: Evidence from the telecommunications industry. *Journal of Corporate Finance, 15*(1), 99-112. https://doi.org/10.1016/j.jcorpfin.2008.09.003

Aktas, N., de Bodt, E., & Roll, R. (2009). Learning, hubris and corporate serial acquisitions. *Journal of Corporate Finance, 15*(5), 543-561. https://doi.org/10.1016/j.jcorpfin.2009.01.006

Aktas, N., de Bodt, E., & Roll, R. (2011). Serial acquirer bidding: An empirical test of the learning hypothesis. *Journal of Corporate Finance, 17*(1), 18-32. https://doi.org/10.1016/j.jcorpfin.2010.07.002

Alexandridis, G., Fuller, K. P., Terhaar, L., & Travlos, N. G. (2013). Deal size, acquisition premia and shareholder gains. *Journal of Corporate Finance, 20*, 1-13. https://doi.org/10.1016/j.jcorpfin.2012.10.006

Amel-Zadeh, A., & Meeks, G. (2019). Bidder earnings forecasts in mergers and acquisitions. *Journal of Corporate Finance, 58*, 373-392. https://doi.org/10.1016/j.jcorpfin.2019.06.002

Andrade, G., Mitchell, M., & Stafford, E. (2001). New Evidence and Perspectives on Mergers. *The Journal of Economic Perspectives, 15*(2), 103-120. https://www.jstor.org/stable/2696594

Arouri, M., Gomes, M., & Pukthuanthong, K. (2019). Corporate social responsibility and M&A uncertainty. *Journal of Corporate Finance, 56*, 176-198. https://doi.org/10.1016/j.jcorpfin.2019.02.002

Becher, D., Jensen, T. K., & Liu, T. (2020). Acquisitions and funding conditions. *Journal of Corporate Finance, 65*. https://doi.org/10.1016/j.jcorpfin.2020.101760

Bena, J., & Li, K. (2013). Corporate Innovations and Mergers and Acquisitions. *The Journal of Finance, 69*(5), 1923-1960. https://doi.org/10.1111/jofi.12059

Berg, F., Kölbel, J. F., & Rigobon, R. (2022). Aggregate Confusion: The Divergence of ESG Ratings. *Review of Finance, 26*(6), 1315-1344. https://doi.org/10.1093/rof/rfac033

Betton, S., Eckbo, B. E., & Thorburn, K. S. (2009). Merger Negotiations and the Toehold Puzzle. *Journal of Financial Economics, 92*(2), 158-178. https://doi.org/10.1016/j.jfineco.2008.02.004

Bloomberg. (2023). *Bloomberg*. Retrieved from https://www.bloomberg.com/news/articles/2023-07-11/saudi-aramco-getting-cash-meant-for-sustainable-investment-reveals-esg-loophole?leadSource=uverify%20wall

Bose, S., Minnick, K., & Shams, S. (2021). Does carbon risk matter for corporate acquisition decisions? *Journal of Corporate Finance, 70*. https://doi.org/10.1016/j.jcorpfin.2021.102058

Brander, J. A., & Egan, E. J. (2017). The winner's curse in acquisitions of privately-held firms. *The Quarterly Review of Economics and Finance, 65*, 249-262. https://doi.org/10.1016/j.qref.2017.01.010

Brown, S. J., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics, 14*(1), 3-31. https://doi.org/10.1016/0304-405X(85)90042-X

Buchanan, B., Cao, C. X., & Chen, C. (2018). Corporate social responsibility, firm value, and influential. *Journal of Corporate Finance, 52*, 73-95. https://doi.org/10.1016/j.jcorpfin.2018.07.004

Capen, E., Clapp, R., & Campbell, W. (1971). Competitive Bidding in High-Risk Situations. *Journal of Petroleum Technology, 23*, 641-653.

Chen, C., & Wu, X. (2021). Winning megadeals: The dual role of acquirer advisors in loan-financed mergers and acquisitions. *Journal of Corporate Finance, 69*. https://doi.org/10.1016/j.jcorpfin.2021.102034

Christensen, D. M., Serafeim, G., & Sikochi, A. (2022). Why is Corporate Virtue in the Eye of The Beholder? *The Accounting Review, 97*(1), 147-175. https://doi.org/10.2308/TAR-2019-0506

Chung, B. H., & Hribar, P. (2021). CEO Overconfidence and the Timeliness of Goodwill Impairments. *Accounting Review, 96*(3), 221-259. https://doi.org/10.2308/TAR-2016-0555

Crifo, P., Forget, V. D., & Teyssier, S. (2015). The price of environmental, social and governance practice disclosure: An experiment with professional private equity investors. *Journal of Corporate Finance, 30*, 168-194. https://doi.org/10.1016/j.jcorpfin.2014.12.006

Cunha, F. A., Meira, E., & Orsato, R. J. (2021). Sustainable finance and investment: Review. *Business Strategy and the Environment, 30*(8), 3821–3838. https://doi.org/10.1002/bse.2842

Deng, X., Kang, J., & Low, B. S. (2013). Corporate social responsibility and stakeholder value maximization: Evidence from mergers. *Journal of Financial Economics, 110*(1), 87-109. https://doi.org/10.1016/j.jfineco.2013.04.014

Duchin, R., & Schmidt, B. (2013). Riding the merger wave: Uncertainty, reduced monitoring, and bad acquisitions. *Journal of Financial Economics, 107*(1), 69-88. https://doi.org/10.1016/j.jfineco.2012.07.003

Dutta, A. (2015). Improved Calendar Time Approach for Measuring Long-Run Anomalies. https://urn.fi/URN:ISBN:978-952-476-614-2

Edmans, A., & Kacperczyk, M. (2022). Sustainable Finance. *Review of Finance, 26*(6), 1309-1313. https://doi.org/10.1093/rof/rfac069

EEA. (2023). *Growth without economic growth*. https://doi.org/10.2800/781165

Erel, I., Jang, Y., & Weisbach, M. S. (2014). Do Acquisitions Relieve Target Firms' Financial Constraints? *The Journal of Finance, 70*(1), 289-328. https://doi.org/10.1111/jofi.12155

European Commission. (2023). *EU at COP28 Climate Change Conference*. Retrieved from https://commission.europa.eu/strategy-and-policy/priorities-2019-

2024/european-green-deal/climate-action-and-green-deal/eu-un-climate-change-conference/eu-cop28-climate-change-conference_en

Eurosif. (2023). *Climate-related Data: The Investors' Perspective.* Eurosif. Retrieved from https://www.eurosif.org/wp-content/uploads/2023/05/Eurosif-Report-on-Climate-related-Data.pdf

EY. (2023). *What drives one-time M&A integration costs and how to estimate them*. Retrieved from EY: https://www.ey.com/en_us/strategy-transactions/four-current-trends-estimating-mergers-acquisitions-integration-costs

Fama, E. F. (1998). Market efficiency, long-term returns, and behavioral finance. *Journal of Financial Economics, 49*(3), 283-306. https://doi.org/10.1016/S0304-405X(98)00026-9

Fama, E. F., & French, K. R. (2015). A five-factor asset pricing model. *Journal of Financial Economics, 116*(1), 1-22. https://doi.org/10.1016/j.jfineco.2014.10.010

Fama, E., & Burton, G. (1970). Efficient Capital Market: A Review of Theory and Empirical Work. *The Journal of Finance, 25*(2), 383-417.

Friedman, M. (1970). *A Friedman doctrine - The Social Responsibility of Business Is to Increase Its Profits*. Retrieved from The New York Times: https://www.nytimes.com/1970/09/13/archives/a-friedman-doctrine-the-social-responsibility-of-business-is-to.html

Fu, F., Lin, L., & Officer, M. S. (2013). Acquisitions driven by stock overvaluation: Are they good deals? *Journal of Financial Economics, 109*(1), 24-39. https://doi.org/10.1016/j.jfineco.2013.02.013

Gao, N., & Mohamed, A. (2018). Cash-rich acquirers do not always make bad acquisitions: New evidence. *Journal of Corporate Finance, 50*, 243-264. https://doi.org/10.1016/j.jcorpfin.2018.04.002

Ghosh, A. (2001). Does operating performance really improve following corporate acquisitions? *Journal of Corporate Finance, 7*(2), 151-178. https://doi.org/10.1016/S0929-1199(01)00018-9

Gillan, S. L., Koch, A., & Starks, L. T. (2021). Firms and social responsibility: A review of ESG and CSR research. *Journal of Corporate Finance, 66*. https://doi.org/10.1016/j.jcorpfin.2021.101889

Gutierrez, J. C., & Cayon Fallon, E. (2021). Sin stocks and ESG scores: Does the nature of your business really matter? *Journal of International Studies, 14*(3), 114-123. https://doi.org/10.14254/2071-8330.2021/14-3/7

Harford, J. (2005). What drives merger waves? *Journal of Financial Economics, 77*(3), 529-560. https://doi.org/10.1016/j.jfineco.2004.05.004

Hartzmark, S. M., & Sussman, A. (2019). Do Investors Value Sustainability? A Natural Experiment Examining Ranking and Fund Flows. *The Journal of Finance, 74*(6), 2789-2837. https://doi.org/10.1111/jofi.12841

Huang, Q., Jiang, F., & Wu, S. (2018). Does short-maturity debt discipline managers? Evidence from cash-rich firms' acquisition decisions. *Journal of Corporate Finance, 53*, 133-154. https://doi.org/10.1016/j.jcorpfin.2018.10.001

Humphrey, J. E., Lee, D., & Shen, Y. (2012). Does it cost to be sustainable? *Journal of Corporate Finance, 18*(3), 626-639. https://doi.org/10.1016/j.jcorpfin.2012.03.002

Ismail, A. (2011). Does the Management's Forecast of Merger Synergies Explain the Premium Paid, the Method of Payment, and Merger Motives? *Financial Management, 40*(4), 879-910. 10.1111/j.1755-053X.2011.01165.x.

Jaffe, J. F., Jindra, J., & Pedersen, D. J. (2019). Do Unlisted Targets Sell at Discounts? *Journal of Financial and Quantitative Analysis, 54*(3), 1371–1401. https://doi.org/10.1017/S0022109018001060

Jaffe, J., Pedersen, D., & Voetmann, T. (2013). Skill differences in corporate acquisitions. *Journal of Corporate Finance, 23*, 166-181. https://doi.org/10.1016/j.jcorpfin.2013.08.007

Jensen, M. C. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *The American Economic Review, 76*(2), 323-29. https://www.jstor.org/stable/1818789

Jensen, M. C. (2002). Value Maximization, Stakeholder Theory, and the Corporate Objective Function. *Business Ethics Quarterly, 12*(2), 235-256. https://doi.org/10.2307/3857812

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305-360. https://doi.org/10.1016/0304-405X(76)90026-X

Jensen, M. C., & Ruback, R. S. (1983). The market for corporate control: The scientific evidence. *Journal of Financial Economics, 11*(1-4), 5-50. https://doi.org/10.1016/0304-405X(83)90004-1

Jones, T. M. (1995). Instrumental Stakeholder Theory: A Synthesis of Ethics and Economics. *The Academy of Management Review, 20*(2), 404-437. https://doi.org/10.2307/258852

Jory, S., Ngo, T., & Susnjara, J. (2020). Stock mergers and acquirers' subsequent stock price crash risk. *Review of Quantitative Finance and Accounting, 54*(1), 359-387. 10.1007/s11156-019-00792-w

Kitching, J. (1967). Why do mergers miscarry? *Harvard Business Review, 45*(6), 84-101.

KPMG. (2022). *2022 EMA ESG Due Diligence Study.* Retrieved from https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2022/11/ema-esg-due-diligence-report.pdf

Larcker, D. F., Tayan, B., & Watts, E. (2022). Seven Myths of ESG. *European Financial Management, 28*(4), 869-882. https://doi.org/10.1111/eufm.12378

Larkin, Y., & Lyandres, E. (2019). Inefficient mergers. *Journal of Banking & Finance, 108*. https://doi.org/10.1016/j.jbankfin.2019.105648

LSEG. (2022). *LSEG Environmental, Social and Corporate Governance - ESG.* Retrieved from https://www.lseg.com/content/dam/data-analytics/en_us/documents/methodology/lseg-esg-scores-methodology.pdf

LSEG. (2023). *LSEG ESG Scores.* Retrieved from https://www.lseg.com/en/data-analytics/sustainable-finance/esg-scores

Ma, Q., Whidbee, D. A., & Zhang, A. W. (2011). Value, valuation, and the long-run performance of merged firms. *Journal of Corporate Finance, 17*(1), 1-17. https://doi.org/10.1016/j.jcorpfin.2010.07.001

Malmendier, U., & Tate, G. (2005). CEO Overconfidence and Corporate Investment. *The Journal of Finance, 60*(6), 2661-2700. https://doi.org/10.1111/j.1540-6261.2005.00813.x

Martynova, M., & Renneboog, L. (2008). A century of corporate takeovers: What have we learned and where do we stand? *Journal of Banking & Finance, 32*(10), 2148-2177. https://doi.org/10.1016/j.jbankfin.2007.12.038

Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2004). Firm size and the gains from acquisitions. *Journal of Financial Economics, 73*(2), 201-228. https://doi.org/10.1016/j.jfineco.2003.07.002

Mukherjee, T. K., Kiymaz, H., & Baker, H. K. (2004). Merger Motives and Target Valuation: A Survey of Evidence from CFOs. *Journal of Applied Finance, 14*(2), 7-24.

Netter, J., Stegemoller, M., & Wintoki, M. B. (2011). Implications of Data Screens on Merger and Acquisition Analysis: A Large Sample Study of Mergers and Acquisitions from 1992 to 2009. *The Review of Financial Studies, 24*(7), 2316–2357. https://doi.org/10.1093/rfs/hhr010

Ng, A. C., & Rezaee, Z. (2020). Business sustainability factors and stock price informativeness. *Journal of Corporate Finance, 64*. https://doi.org/10.1016/j.jcorpfin.2020.101688

Nguyen, H. T., Yung, K., & Sun, Q. (2012). Motives for Mergers and Acquisitions:Ex-Post Market Evidence from the US. *Journal of Business Finance & Accounting, 39*(9), 1357-1375. https://doi.org/10.1111/jbfa.12000

NOAA. (2023). *Earth had its warmest November on record: 2023 still on track to be the globe's warmest year recorded*. Retrieved from National Oceanic and Atmospheric Administration: https://www.noaa.gov/news/earth-had-its-warmest-november-on-record

Nofsinger, J. R., Sulaeman, J., & Varma, A. (2019). Institutional investors and corporate social responsibility. *Journal of Corporate Finance, 58*, 700-725. https://doi.org/10.1016/j.jcorpfin.2019.07.012

O'Neill, S. (2023). *Corporate Governance Institute*. Retrieved from https://www.thecorporategovernanceinstitute.com/insights/lexicon/what-is-the-difference-between-csr-and-esg/

PwC. (2023). *Global M&A Industry Trends: 2023 Mid-Year Update.* Retrieved from https://pwc.to/3mWE2xL

Renneboog, L., & Vansteenkiste, C. (2019). Failure and success in mergers and acquisitions. *Journal of Corporate Finance, 58*, 650-699. https://doi.org/10.1016/j.jcorpfin.2019.07.010

Renneboog, L., Horst, J. T., & Zhang, C. (2008). Socially responsible investments: Institutional aspects, performance, and investor behavior. *Journal of Banking & Finance, 32*(9), 1523-1742. https://doi.org/10.1016/j.jbankfin.2007.12.039

Rhodes-Kropf, M., & Viswanathan, S. (2005). Market Valuation and Merger Waves. *The Journal of Finance, 59*(6), 2685-2718. https://doi.org/10.1111/j.1540-6261.2004.00713.x

Rhodes-Kropf, M., Robinson, D. T., & Viswanathan, S. (2005). Valuation waves and merger activity: The empirical evidence. *Journal of Financial Economics, 77*(3), 561-603. https://doi.org/10.1016/j.jfineco.2004.06.015

Roll, R. (1986). The Hubris Hypothesis of Corporate Takeovers. *Journal of Business Studies, 59*(2), 197-216.

Sharpe, W. F. (1964). Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. *The Journal of Finance, 19*(3), 425-442. https://doi.org/10.1111/j.1540-6261.1964.tb02865.x

Statista. (2023). *Largest stock exchange operators worldwide as of September 2023, by market capitalization of listed companies.* Retrieved from https://www.statista.com/statistics/270126/largest-stock-exchange-operators-by-market-capitalization-of-listed-companies/

Tennessee. (2023). *Tennessee*. Retrieved from https://www.tn.gov/attorneygeneral/news/2023/12/18/pr23-59.html

Trahan, R. T., & Jantz, B. (2023). What is ESG? Rethinking the "E" pillar. *Business Strategy and the Environment, 32*(7), 4382-4391. https://doi.org/10.1002/bse.3371

Trautwein, F. (1990). Merger Motives and Merger Prescriptions. *Strategic Management Journal, 11*(4), 283-295. https://www.jstor.org/stable/2486680

United Nations. (1951). *Proceedings of the United Nations Scientific Conference on the Conservation and Utilization of Resources, 17 August - 6 September 1949, Lake Success, New York, Vol. III, Fuel and energy resources.* Retrieved from https://digitallibrary.un.org/record/1485027

United Nations. (2023). *Transforming our world: the 2030 Agenda for Sustainable Development*. Retrieved from https://sdgs.un.org/2030agenda

Vermaelen, T., & Xu, M. (2014). Acquisition finance and market timing. *Journal of Corporate Finance, 25*, 73-91. https://doi.org/10.1016/j.jcorpfin.2013.11.004

Wang, Z., Lu, W., & Liu, M. (2021). Corporate social responsibility overinvestment in mergers and acquisitions. *International Review of Financial Analysis, 78*. https://doi.org/10.1016/j.irfa.2021.101944

Williamson, R., & Yang, J. (2021). Tapping into financial synergies: Alleviating financial constraints through acquisitions. *Journal of Corporate Finance, 68*. https://doi.org/10.1016/j.jcorpfin.2021.101947

YLE. (2022). *Historic Wolt takeover halves in value after share price collapse*. Retrieved from https://yle.fi/a/3-12412033

Zheng, Z., LI, J., Ren, X., & Guo, J. M. (2023). Does corporate ESG create value? New evidence from M&As. *Pacific-Basin Finance Journal, 77*. https://doi.org/10.1016/j.pacfin.2022.101916