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The Influence of Target ESG Performance on Premiums in Mergers and Acquisitions

Greening the Deal: Analysing the Effect of Target ESG Performance on Merger and Acquisition Premiums

Master Thesis Financial Economics

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Abstract

This thesis examines the impact of a target's ESG performance on M&A premiums, seeking to determine whether better ESG practices result in higher premiums. This study aims to gain a deeper understanding of how ESG factors impact financial dynamics in corporate transactions while promoting responsible and sustainable business practices in M&A. Contrary to previous studies, this study finds that a target's overall ESG score does not significantly impact the acquisition premium. However, looking at the ESG score's building blocks shows that the target company's social score has a positive impact on the premium, while the governance score has a negative effect. Moreover, the target's ESG score has mixed impacts on deal durations. Additionally, this study examines the effect of COVID-19 on M&A premiums and concludes that this period did not significantly affect premiums, regardless of the acquirer's ESG performance. This study highlights the complexity of the relationship between ESG and M&A premiums, emphasising the need for a nuanced approach. Different ESG components have varying effects on premiums, and context plays a crucial role in determining these outcomes.

Keywords: ESG, Mergers and Acquisitions (M&A), Premium Paid

Table of Contents

1. Introduction

From 2018 to 2022, there was an average total deal value of $4.28 trillion in the mergers and acquisitions (M&A) market. This amount is an increase of 16.3% compared to the average of $3.68 trillion from 2013 to 2017 (Bain & Company, 2023). When the focus switches to green M&A, a tremendous boost is visible in recent mergers and acquisitions prioritising environmental sustainability. Currently, green deals make up 5% of all M&A transactions. Dealmakers involved in such deals increasingly prioritise environmental value creation, such as investing in a clean energy transition. The number of Environmental, Social and Governance (ESG) deals worldwide has risen from around 5,000 in 2011 to a record high of approximately 9,000 in 2021, which is an 80% increase (Boston Consulting Group, 2022).

A reason for this rise in green M&A deals is that climate change is one of the most pressing global issues. The release of greenhouse gases is causing global warming, resulting in environmental deterioration, loss of biodiversity, and destruction of habitats. These occurrences are negatively affecting the environment. To assist companies in comprehending climate change and its potential solutions, the United Nations (2004) created a report with the first mainstream mention of ESG. This report utilises a framework to evaluate an organisation's business practices and performance on a range of sustainability and ethical concerns. Nowadays, ESG considerations are an aspect that is gaining importance in M&A transactions. Investors prioritise ESG opportunities and risks, including human capital management, climate change, diversity and inclusion, and biodiversity, among their top concerns. ESG-oriented investments have hit historic highs. Companies will face increased pressure to emulate investors by including ESG factors in the formal parts of dealmaking. (Corte & Hopkins, 2022).

With the rise of ESG-oriented investments, it is worth exploring whether 'green' companies hold more value in the eyes of investors and if firms can improve their ESG factors to increase their corporation's worth. This paper aims to investigate whether there is a relationship between a target's ESG performance and the premium paid in a deal. Previous research by Gomes and Marsat (2018) has shown a positive link between a target's overall Corporate Social Responsibility (CSR) performance and

the premiums paid in acquisitions, based on 588 deals worldwide between 2003 and 2014. This study examines the link between ESG performance and answers the following research question:

What is the impact of a target's ESG performance on the premium paid in mergers and acquisitions?

The objective of this study is to analyse the impact of a company's ESG performance on the premium paid during mergers and acquisitions. The research aims to demonstrate whether firms recognise the value and competitive edge of sustainable and responsible business practices, which may lead them to pay more for companies with superior ESG performance. In today's rapidly evolving business landscape, ESG factors are gaining more importance as they are crucial for sustainability and competitiveness. With stakeholders, regulatory bodies, and investors prioritising ESG aspects, it has become essential to comprehend their role in M&A transactions. This research will provide novel insights by quantitatively studying the relationship between ESG and M&A premiums, identifying differences between the acquirer and the target, enhancing risk assessment, and demonstrating how robust ESG performance can offer competitive advantages. The study aimed to prove that ESG factors play a significant role in M&A deals and that their importance is increasing. However, the results showed something different. The ESG score of the target firm did not have a positive impact on the deal premium. On the other hand, the social score of the target firm had a positive effect on M&A premiums, while the governance score had a negative impact. The overall ESG score of the target firm had mixed effects on deal durations, and COVID-19 did not significantly affect M&A premiums, regardless of the acquirer's ESG performance.

The academic contribution of understanding the impact of a target's ESG performance on M&A premiums can enhance the understanding of how ESG factors influence financial dynamics in corporate transactions. This research provides valuable insights for policymakers and educators and also contributes to developing academic theories and models. It sheds light on the intricate relationship between sustainability and finance, offering a foundation for informed decision-making in M&A, responsible corporate behaviour, and regulatory adjustments. This research holds practical use for various stakeholders. Businesses seeking to acquire other companies can enhance their M&A strategies

by comprehending the impact of a target's ESG score on the premiums, which empowers them to make well-informed decisions and manage risk more efficiently. Furthermore, this research can steer the evolution of sophisticated valuation methodologies in M&A, leading to more refined assessments. Ultimately, the goal is to encourage responsible and sustainable business practices within M&A.

The paper is structured as follows: first, a literature review is provided that analyses existing research and literature on ESG performance, M&A premiums, and their relationship. The review focuses on exploring the impact of the COVID-19 pandemic, which leads to the formulation of relevant hypotheses. The subsequent section is dedicated to methodology and data, which provides a detailed account of the research methods and data sources used. The study employs five empirical models related to acquisition premiums, ESG scores, and deal duration during the COVID-19 pandemic. The results section discusses how the target's ESG performance affects acquisition premiums, how differences in ESG performance impact M&A premiums, how the target's ESG performance influences deal duration, and the effect of COVID-19 on acquisition premiums. Furthermore, a robustness analysis is conducted to ensure the reliability of the findings. In the conclusion, the main findings and their implications are summarised. The study's limitations are acknowledged, and potential avenues for future research are suggested.

2. Literature Review

This chapter will explore the most relevant literature on ESG performance, premiums paid in M&A deals, and their relationship. The limited amount of research on ESG has led to the inclusion of its predecessor, CSR, in the literature review. Since CSR shares many similarities and the same objective as ESG, it is essential to establish a strong foundation for this research. Firstly, the literature concerning ESG performance and premiums in M&A deals will be explored. Following that, the existing literature that combines these factors will be explored. Lastly, the impact of COVID-19 on M&A premiums will be discussed. The formulation of all hypotheses is grounded in the reviewed literature.

2.1 ESG Performance

The United Nations (2004) first described ESG factors in a report that was a collaboration between twenty global financial institutions. The report provided recommendations on better incorporating environmental, social, and governance issues into analysis and asset management. That would help connect financial markets to the changing world and contribute to sustainable development, resulting in more robust and resilient financial markets. ESG is a successor of the Corporate Social Responsibility (CSR) model, where businesses incorporate social and environmental issues in their operations and communications with their stakeholders. CSR includes reducing carbon footprints, enhancing labour policies, and engaging in fair trade practices. Bowen (1953) was the first one who coined CSR and stated that business people hold great power and that their actions have a tangible impact on society. The author stated that business people must pursue beneficial policies for the common good. In the 1970s, CSR gained traction in the United States. Carroll (1979) offered a model describing essential corporate social performance aspects. According to the author, corporate social performance involves assessing social responsibilities, identifying social issues, and choosing a response philosophy. The model helped managers conceptualise critical social performance issues and systemise thinking about those concerns. The CSR framework is an internal general sustainability framework companies use to communicate their values and goals to employees and others. ESG, on the other hand, is a sustainability assessment that quantitatively measures sustainability and enhances

business valuation (Corporate Governance Institute, 2023). ESG reporting does exist in the form of regional reporting frameworks and has become mandatory in various countries. Examples of these factors include carbon emissions, water usage, employee rights, and the composition of the board of directors. One of the methods to measure ESG is by standard boards. The Global Report Initiative (GRI) and the Sustainability Accounting Standards Board (SASB) are examples of the most common boards.

The Paris Agreement, signed in 2015, is the first-ever universal and legally binding accord to combat climate change. Countries that are part of the United Nations Framework Convention on Climate Change (UNFCCC) have committed to take concerted action to combat this pressing issue. One of the agreement's goals is to limit the rise in global average temperature to below two degrees Celsius compared to pre-industrial levels (United Nations, 2015). The Paris Agreement has contributed to strengthening non-financial reporting requirements by governments and regulatory bodies. For example, the Non-Financial Reporting Directive (NFRD) mandates the disclosure of non-financial information by particular large firms operating in the European Union, including ESG factors. The Paris Agreement has immense climate benefits that amount to a global benefit of $2.25 trillion by the year 2030 in present value (Liu et al., 2020).

It is also essential to look at the results of different ESG performances on financial performances. Velte (2017) concludes that ESG performance positively impacts a firm's return on assets (ROA) but has no impact on Tobin's Q, based on companies out of Germany. Comparing this result to other countries, Alareeni and Hamdan (2020) state that ESG disclosure positively affects a firm's performance measures. The research was conducted among the US S&P 500-listed firms and showed that a higher level of ESG performance resulted in a higher level of ROA and return on equity (ROE). Friede et al. (2015) aggregated the evidence of 2200 individual studies and stated that this allows for generalisable findings. The authors examined that 90% of studies find a nonnegative relation between ESG and corporate financial performance. Additionally, most studies have reported positive results. This relationship also remains stable over time. They state that it is essential for investors to make responsible long-term investments to fulfil their obligations and work towards the larger goals of

society. Kim and Li (2021) analysed how ESG factors relate to corporate financial performance and found a positive effect on profitability, which is more pronounced for larger companies. The most significant effect among the various ESG categories was governance, especially for companies with weak governance. The authors came to the conclusion that ESG variables positively affect credit rating. The study conducted by De Lucia et al. (2020) explored whether there is a correlation between good ESG performance and a firm's financial performance. They conducted a case study that involved analysing data through logistic regression models and machine learning. Their research found a relationship between ESG factors and financial performance, specifically ROA and ROE.

2.2 M&A Premiums

M&A premiums refer to the additional amount paid by an acquiring company above the current market value of a target company during a merger or acquisition transaction. This premium is the additional value the acquiring company is willing to afford to gain control or ownership of the target company. The premium reflects the perceived value, synergies, strategic benefits, or control the acquiring company expects to achieve through the deal.

There is much research on mergers and acquisitions, but there is still some debate if it is beneficial. Loughran and Vijh (1997) claimed that shareholders of the target company who choose to keep the acquirer stock they receive as payment in stock mergers do not experience any significant positive excess returns. However, those who fall in the top quartile of the target-to-acquirer size ratio experience negative excess returns. Although the high premiums paid on acquisitions, no evidence has been found that those high M&A premiums paid are responsible for acquirers' long-run post-merger underperformance (Antoniou et al., 2008).

Various factors determine the height of the premium. When considering industry/market-specific factors, we observe that they can be affected by the industry's market environment. Future expectations of development vary significantly between industries and economic environments, which can impact prices. A positive market environment can cause an overestimation of future synergies from target firms, causing higher premiums. (Andrade & Stafford, 2004; Fralich & Papadopoulos, 2018).

There may be differences on a country level as well. Rossi and Volpin (2004) examined the factors that influence mergers and acquisitions on a global scale, focusing on the variations in regulations and laws among different nations. They found that countries with more robust accounting standards and shareholder protection laws tend to have higher levels of M&A activity, resulting in a more significant premium paid. Additionally, when cross-border deals occur, the acquired companies often come from countries with weaker investor protection laws than their acquirers, suggesting that cross-border transactions can help enhance investor protection within the targeted companies. The political situation also impacts the premium paid in an M&A transaction. Lee (2018) studied this phenomenon and found that when there is high political uncertainty in the country where a takeover occurs, the foreign acquirer has a stronger bargaining position than the acquired firm. The investment outcome is relatively more unpredictable, and thus the acquirer may demand compensation for the political uncertainty by paying a lower takeover premium.

In the existing literature, firm-specific factors also have an influence on the height of the price paid above the firm value. An example of a determinant that affects the premium of the deal is the size of the research and development (R&D) related assets (Laamanen, 2007; Lin & Wang, 2016). Firms with higher R&D assets have higher premia, which does not result in negative abnormal returns. Also, there is some discussion on the relationship between the M&A premium and the deal size. Alexandridis et al. (2013) state that a negative relation exists between the premia and the target size, and the overpayment potential in large deals appears to be lower. One of the reasons is the increased complexity of integrating large companies, which can make synergies more uncertain, leading to less generous offers by acquirers. Another reason, according to the authors, is the difficulty of assimilating large targets into a collaborative organisation, resulting in a smaller pool of potential acquirers. As a result, fewer acquirers for large targets reduce competition and mitigate the winner's curse.

Deal-specific determinants also play a role in the height of the bid premium. Abnormal returns are notably greater with cash offers compared to stock offers (Eckbo, 2009; Huang & Walkling, 1987).

A cause for this difference is because of tax. When shareholders are required to pay direct taxes on their profits, they often request higher premiums.

2.3 ESG/CSR and M&A

When we look at the influence of ESG on the M&A world, firstly, we will look at the precursor, CSR. Gomes (2019) examined the influence of CSR performance on the target choice. Using propensity score matching, the author creates a company control group that closely resembles the treated firm's ex-ante. The author claimed that target companies have higher CSR scores than non-targeted firms with similar characteristics. This result shows that CSR is an important consideration for M&A acquirers. The previously mentioned outcome aligns with the research of Tong et al. (2020), whereby the authors examined how a target CSR performance influences the financial yields for acquirers, as reflected in the market response to the announcement of an acquisition. Analysing a US acquisition dataset, they discovered that the acquirer's abnormal returns were positively associated with the target company's CSR performance when an acquisition was announced.

Although there is not an abundance of research on the successor ESG, some studies have been conducted. A study found that improved ESG engagement positively impacts cross-border M&A business performance and enhances efficiency (Kim et al., 2022). When research was conducted in the pharmaceutical industry, there was a positive correlation between the M&A process and firm performance. A high ESG score contributed to an increase in company performance (Mihaiu et al., 2021). According to a study by Caiazza et al. (2021), ESG factors impact companies' long-term performance after a merger. Sustainability factors play a noteworthy role in the success of M&A deals and are positively related to improved financial ratios over time. Furthermore, the completion of M&A deals leads to an increase in ESG scores for the companies involved. The study suggests that companies with a high sustainability level prior to a merger are more likely to yield greater financial and sustainability benefits for shareholders in the aftermath of the merger.

There is also some existing literature on the influence of CSR on the M&A premium. As previously mentioned, Gomes and Marsat (2018) conducted a study on whether CSR is valued by

acquirers in M&A and found that CSR positively links to bid premiums, indicating that acquirers value the target's CSR involvement. This may serve as a means to reduce the targets' information asymmetry and specific risk. However, if they looked at the environmental, social and governance factors separately, social performance only affects acquisitions premiums in cross-border deals. Ozdemir et al. (2022) also examined this effect and used 277 completed acquisitions over the period 1996-2018. The authors used an ordinary least square (OLS) regression and showed that the target's pre-acquisition CSR performance positively relates to deal premium. So, the findings suggest that target companies with better pre-acquisition CSR performance tend to have higher deal premiums. Therefore, the results indicate that target firms with strong CSR involvement are more likely to receive a higher acquisition deal premium. These results correspond to the study of Choi et al. (2015), who looked at 215 acquisitions made by U.S. companies from 1995 to 2013. They implied that a target's CSR rating could indicate its overall quality and influence an acquirer's decision to pay a discount for socially irresponsible targets or a premium for those with good CSR performance. So, in line with the reasons mentioned above, the following hypothesis is formulated:

Hypothesis 1a: The target's ESG score positively affects the premium paid in mergers and acquisitions.

Furthermore, because the ESG rating exists out of three components, it is also interesting to examine if there is a difference between those elements and which one the acquirer values the most. When a survey asked firms to rank the ESG factors individually, the environmental factors were rated as the most important among the three ESG elements, with 45% of the votes. Governance followed with 37% of the votes, and social factors were ranked the most important by 18% of the participants (Verdict, 2021). Although previous research points out that environmental scores are not the most crucial aspect of ESG factors, a study by Cek and Eyupoglu (2020) examined the impact of individual ESG scores on the financial performance of S&P500 firms between 2010 and 2015. The study found that social and governance performance had a significant impact on economic performance across all regression models. Nevertheless, the environmental score did not demonstrate a significant relationship. Sila and Cek (2017) researched the individual ESG factors and economic performance of

Australian firms between 2010 and 2016. According to the results, social performance was the most essential factor, consistently resulting in better economic performance. However, environmental performance still positively affects economic performance, but to a lesser degree than social performance (Caiazza et al., 2021). In their study, they examined how ESG scores impact M&A performance. They discovered that the social score was the most significant factor, outweighing the other two components by almost two times. This finding suggests that the social score plays a crucial role in enhancing sustainability after an acquisition. So, to complement the abovementioned hypothesis:

Hypothesis 1b: Of the components of a target's ESG score, the social score has the most significant impact on the premium paid in mergers and acquisitions.

A study by Krishnamurti et al. (2019) examined how a company's CSR performance affects M&A deals. The research found that companies with CSR activities are more likely to be acquired by firms prioritising CSR. These socially responsible firms also tend to pay lower bid premiums for acquisitions. The authors state that CSR-oriented bidding firms see positive and significant abnormal returns when they announce acquisition decisions. These outcomes imply that CSR firms make acquisition selections that benefit the shareholders of the company. Tampakoudis and Anagnostopoulou (2020) examined the impact of ESG performance on market value and M&A performance. According to their findings, the company that acquires another company with better environmental, social, and governance performance than before the merger tends to have better ESG performance after the merger. On the other hand, if the acquirer's ESG performance improves after the merger, its market value also tends to increase. They also found evidence suggesting that acquiring a target company with higher ESG performance than itself before the merger can positively impact the market value of the acquirer after the merger. Nevertheless, it is also the other way around. Mergers and acquisitions have a positive effect on a company's ESG score. After an M&A, firms are more likely to engage in socially responsible corporate practices (Barros et al., 2022). By drawing on the reasons mentioned above, the following hypothesis is developed:

Hypothesis 2: A positive difference between the acquirer and the target's ESG score will have a positive effect on the acquisition premium paid.

Research conducted by Arouri et al. (2019) examined the effect of CSR on the uncertainty of completion in mergers and acquisitions. Using arbitrage spreads as a measure of deal uncertainty; the study found a negative correlation between the acquirer's CSR and the arbitrage spreads following initial acquisition announcements. The authors report that for each standard deviation increase in the acquirer's CSR score, there was a reduction of 1.10 percentage points in the arbitrage spreads. This outcome implies that the CSR of acquirers plays a significant role in how market participants evaluate the outcome of mergers and acquisitions on a global scale. Research on Chinese mergers and acquisitions shows that acquirers with higher ESG ratings tend to have better post-M&A performance and are more likely to complete the deal successfully (Zheng et al., 2023).

Deng et al. (2013) researched whether CSR benefits the shareholders of acquiring companies. The research found that acquirers with high corporate social responsibility (CSR) performed better than those with low CSR. High CSR acquirers experienced higher returns upon announcing the merger, better announcement returns on the value-weighted portfolio of the acquirer and the target, and a more significant increase in long-term operating performance following the merger. The authors observed positive long-term stock returns, suggesting that the market undervalued the benefits of CSR. The study also found that high CSR acquirers completed mergers more quickly and had a lower likelihood of failure than low CSR acquirers. Based on the findings, it can be concluded that the social performance of acquirers plays a crucial role in merger performance and completion probability, supporting the stakeholder value maximisation view of stakeholder theory. Based on the reasons above, the following hypothesis is therefore proffered:

Hypothesis 3: There is a negative relation between the target's ESG performance and deal duration.

2.4 M&A Premium and COVID-19

The emergence of COVID-19 has resulted in an unparalleled global health crisis that has far-reaching consequences for economies worldwide. Since its onset in late 2019, the virus has spread

quickly, leading to a pandemic that has prompted governments and organisations to take strict measures to limit its spread. Although the main objective has been safeguarding public health, the pandemic's socioeconomic effects have been significant and wide-ranging. According to Bloom et al. (2021), US firms experienced an average sales loss of 29%. The study also revealed that small offline firms suffered a sales drop of over 40%, while the most prominent online firms had a sales decrease of less than 10%. This pandemic did also have an impact on global M&A activity. The COVID-19 pandemic led to a phenomenon known as Schumpeterian creative destruction in various industries. This process involves innovation and technological advancements that may cause the destruction of existing economic structures, including companies, industries, and jobs (Kooli & Lock Son, 2021). The authors state that firms are preparing for the growth that will come after the economic downturn with M&A because this will provide an opportunity to explore a future that incorporates advanced technology and new business models.

According to Bauer et al. (2021), the COVID-19 pandemic significantly impacted M&A behaviour. The research findings indicate that the executives expressed greater concern regarding the availability of liquid assets as opposed to prioritising long-term growth strategies, abruptly ending the decade-long continuous growth trend. The COVID-19 pandemic impacts the M&A landscape through market volatility, travel restrictions, and global economic uncertainty. COVID-19 has changed the M&A market from a seller's market to a buyer's market due to the availability of distressed firms and cheap assets (Galpin & Mayer, 2020).

Zhang (2019) found that economic slowdowns lead to lower final premium levels. Poor economic conditions may cause an underestimation of target firms' future synergies, resulting in decreased premiums.

When examining the effects of the pandemic on ESG performance, numerous research has been carried out. So did Al Amosh and Khatib (2023), a study on ESG performance in developed and developing countries before and during COVID-19. Using a dataset covering 2016–2021, they did a panel regression that analysed 12,325 company-year observations. Results show that companies

emphasised ESG compliance during the pandemic. COVID-19 positively impacts ESG performance, highlighting ethical behaviour's importance during crises.

Various studies have been conducted to assess the impact of ESG performance during financial crises. One such study conducted by Broadstock et al. (2021) examined the role of ESG performance during COVID-19 in China. The researchers aimed to determine whether the unique circumstances created an opportunity for investors to interpret ESG performance as an indication of risk mitigation or future stock performance. The authors found that portfolios with high ESG ratings tended to outperform those with low ESG ratings. Additionally, ESG performance helped to mitigate financial risk during the financial crisis and played an increasingly important role during times of crisis, indicating its value as a risk indicator. Beloskar and Rao (2023) examined the impact of ESG performance during the COVID-19 crisis on firms listed on the Bombay Stock Exchange in India. The study shows that ESG information can signal future stock performance, provide downside protection during crises, and reduce stock return volatility during the pandemic.

According to Bauer et al. (2021), the outbreak of COVID-19 has led to financial and economic disruptions that may have impacted investors' perceptions of corporate governance. Specifically, a company's governance strategy plays a significant role in responding to a crisis like COVID-19. According to the research conducted by Hoang et al. (2020), environmental and social investments were devalued by market participants during the financial crisis. Companies should allocate their resources towards activities that enhance their economic resilience. Consequently, environmental investments were deemed as an unwarranted obligation. Drawing from the literature above, we can put forth the following hypothesis:

Hypothesis 4: Targets with a higher ESG score mitigate the negative impact of COVID-19 on M&A premiums.

3. Methodology and Data

This section will cover the methodology employed in the study, along with an overview of the data sources utilised. Firstly, the process of gathering the data sample is described, followed by a description of the variables applied in this research. In addition, there will be an explanation of the empirical models used to test the hypothesis. Finally, descriptive statistics for both the dataset and variables will be presented.

3.1 Data Sample

The research draws primarily upon the Refinitiv Eikon database, renowned for its comprehensive coverage of M&A deals, market trends, and related news. Boasting over 1.3 million deals dating back to the 1970s, the database offers a variety of data, including more than a thousand elements such as deal terms, financials, and the parties involved. To identify the M&A deals for this study, there is an application of specific criteria used in other studies (Barros et al., 2022; Gomes, 2019; Gomes & Marsat, 2018). The included deals were announced between January 2003 and June 2023 with a completed status. In addition, both the target and the acquirer's statuses must be public, and their deal type must be a disclosed dollar value deal and not a self-tender or share repurchase. Furthermore, the deal value must equal or exceed $1 million, and the percentage of shares acquired must be equal to or greater than 50%. Financial firms were excluded from this analysis, resulting in a total of 5,926 deals.

Refinitiv Eikon was used to gather ESG data for the study. Currently, Refinitiv has ESG data for 80% of global market capitalisation. It has one of the world's most extensive ESG content collection operations, with over 700 trained research analysts gathering data. However, due to the limited information at the time, not all companies had available data. The ESG score and the scores for the environmental, social, and governance pillars were used to gather data for all companies involved in the deals between 2003 and 2023. The data was merged with the merger and acquisition deals in Stata, resulting in a sample of 216 transactions. Additionally, Refinitiv Eikon was utilised to collect financial data on the target and acquirer, which served as control variables in the empirical analysis. After

integrating financial data into the deals, 48 transactions were removed from the sample, resulting in a definitive sample of 168 transactions.

3.2 Variable Description

3.2.1 Dependent Variables

The dependent variable of this research is the acquisition premium. To determine the premium for M&A deals, the premium of the offer price to the target closing stock price four weeks before the original announcement date, expressed as a percentage, is used. The reason for selecting the four-week M&A premium is due to the signalling theory. According to Reuer et al. (2012), signals can improve sellers' gains by decreasing acquirers' offer price discounting caused by information asymmetries. The authors suggest that target firms can use inter-organisational relationships as signals to enhance gains for sellers. They noted that a four-week time lag is suitable because it avoids value deviation and is not impacted by any rumours of a possible takeover. The premium is calculated using the following formula:

$$acquisition\ premium = \frac{(offer\ price - market\ value\ target_{t-4})}{market\ value\ target_{t-4}}$$

The third hypothesis focuses on the relationship between a targeted company's ESG performance and the duration of a deal. This study defines deal duration as the time between the announcement and the effective date. Natural logarithms have been utilised to have more normally distributed data for the variable. This definition aligns with Luypaert and De Maeseneire (2015), who studied the factors that influence the time required to complete mergers and acquisitions. Their findings show that longer acquisition durations are linked to stock offers, deal hostility, and larger deals. Therefore, the study will include these factors as control variables in the third hypothesis, with the variables for cash payment and deal hostility as dummies, while the deal size is logarithmic.

3.2.2 Independent Variable

The independent variable of this research is the ESG score. This grade is an overall company score based on the self-reported public information in the environmental, social and governance pillars.

Refinitiv captures and calculates more than 630 ESG measures at the company level. Refinitiv (2022) classifies the pillars into categories and further divides them into themes. The environmental pillar is divided into emission (emissions, waste and biodiversity), innovation (product innovation, green revenues, capital expenditures, and research and development) and resource use (water, energy, sustainable packing and environmental supply chain). The social pillar is split into community, human rights, product responsibility (responsible marketing, product quality and data privacy), and workforce (diversity and inclusion, career development and training, working conditions, and health and safety). The governance pillar is comprised of CSR strategy (CSR strategy and ESG reporting and transparency), management (structure and compensation) and shareholders (shareholder rights and takeover defences). The weightings for environmental and social categories vary per industry, while governance weights remain uniform across all industries, resulting in a relative sum known as the pillar score. This is multiplied by the pillar weights, ultimately leading to the overall ESG score (Refinitiv, 2022).

3.2.3 Control Variables

Control variables are incorporated in the regression analyses to augment the statistical significance of the findings. These variables effectively address the issue of omitted variable bias and can be classified into industry-specific, company-specific, and deal-specific characteristics. The selection of control variables is in line with previously conducted research.

The control variable specific to the industry is included by adding industry-relatedness. When two companies operating within the same industry engage in mergers and acquisitions, the premium paid tends to be lower. Choi et al. (2015) state that this is because acquirers with industry-relatedness often have established connections and a deeper understanding of possible synergies and cost-saving measures. This insight enables them to assess better the advantages, which may result in a reduced premium. A dummy variable is utilised to determine industry-relatedness, with a value of one indicating both companies operate in the same industry and zero if they do not.

Next, the firm-specific control variables were incorporated. The size of the acquirer positively impacts the acquisition premium and enters acquisitions with negative dollar synergy gains (Moeller et

al., 2004). This relationship is consistent with the concept of managerial hubris, where the exaggerated self-confidence of CEOs leads to higher M&A premiums and more significant losses for shareholders (Hayward & Hambrick, 1997). Moeller et al. (2004) stated that hubris has a more substantial impact on the decision-making of larger corporations. To determine the acquirer's size, the natural logarithm of the market value of equity at the prior year's end is computed.

The size of the target company has a negative relation with the acquisition premia, according to research conducted by Alexandridis et al. (2013). The authors allege that this correlation can be attributed to factors such as increased value at stake, decreased competition, reduced managerial ownership, as well as the difficulties involved in integrating post-merger. The size of the target is again determined by taking the natural logarithm of the market value of equity from the previous year's end.

Leverage of the target is positively correlated to the premium paid in an acquisition. Covrig et al. (2017) stated that the higher the leverage of the target company, the less shares or cash the acquirer needs to control the firm. According to the authors, a more highly leveraged target allows the equity takeover premium to be spread over more assets, resulting in a lower premium paid relative to the whole company. Therefore, it is likely that more leveraged targets will receive higher premia. The leverage ratio is computed by dividing a company's total debt by its total assets.

The difference in Tobin's Q between the acquiring company and the target is an essential factor to consider when determining the premium. According to research by Servaes (1991), total returns are more substantial when the target company has a low Q ratio and the acquiring company has a high Q ratio. Tobin's Q acts as a control variable and is calculated by dividing the market value by the total assets.

Finally, deal-specific variables were included. The method of payment used in a transaction can significantly impact the acquisition premium. Eckbo (2009) indicates that if the acquirer chooses to pay with cash, the bid premium will be higher compared to non-cash transactions. Huang and Walkling (1987) suggest that this is due to the immediate taxation of cash deals, whereas stock deals are not immediately taxed. As a result, targets demand a higher premium when cash is used as payment. A

dummy variable is constructed, taking the value of one if the acquirer solely pays with cash and zero otherwise.

If a deal is classified as hostile, Moeller (2005) finds that the targets in those deals receive about ten percentage points higher takeover premiums than targets in other deals. The rationale is that in hostile takeovers, a higher acquisition premium incentivises shareholders of the target company to sell their shares and support the takeover bid. A dummy variable is created to differentiate between the deals where the board formally rejects the offer and the acquirer persists with the takeover bid and those where this does not happen. This dummy variable takes the value of one in the former case and zero in the latter.

The presence of multiple bidders in M&A transactions positively impacts the premium paid. This is because competition among potential buyers for the same target could lead to an increase in the premium that the target could receive from the buyer (Walkling & Edmister, 1985). The authors found that the bid premium is 30 percentage points higher when multiple bidders compete for the same target. A dummy variable was made to account for this, taking a value of one if there were multiple bidders and zero if there was only one bidder.

For hypothesis 4, a COVID-19 dummy variable was used for deals between March 2020 and December 2021. This fourth hypothesis also includes an interaction term between the target's ESG score and the dummy for COVID-19. The statistical measure of the interaction term between Target ESG and COVID-19 enables an examination of the variations in the impact of the ESG performance of the target company on the acquisition premium before and during the COVID-19 outbreak. This measure facilitates understanding the pandemic's influence on the relationship between ESG performance and acquisition premium. In essence, the interaction term captures how the COVID-19 outbreak has altered the relationship between ESG performance and acquisition premium.

To ensure valid control for variables, the methodology employed in this study incorporates fixed effects for time and industry. This approach aligns with the research conducted by Gomes and Marsat (2018) and helps to establish a more rigorous and reliable framework for analysis.

3.3 Empirical Method

This paper utilises the methodology introduced by Gomes and Marsat (2018), which examines the impact of CSR scores on acquisition premiums. Their approach involved implementing an ordinary least squares (OLS) regression that calculates the correlation between dependent and independent variables by minimising the difference between predicted and observed values. In order to evaluate the initial hypothesis, an OLS regression model will be employed to investigate the connection between the M&A premiums and the ESG performance of targets. In this model, the acquisition premium will serve as the dependent variable, while the ESG score of the target will serve as the independent variable. The control variables will be categorised into three groups: firm-specific, industry-specific, and deal-specific. To enhance accuracy, the model will also incorporate time and industry fixed effects alongside an error term:

$$Acquisition\ Premium \tag{1a}$$
$$= \beta_0 + \beta_1 ESG_{target_{t-1}} + \beta_2 Size_{acquirer_{t-1}} + \beta_3 Size_{target_{t-1}}$$
$$+ \beta_4 Leverage_{target_{t-1}} + \beta_5 (Tobin's\ Q_{acquirer_{t-1}} - Tobin's\ Q_{target_{t-1}})$$
$$+ \beta_6 Industry\ Related + \beta_7 Cash + \beta_8 Hostile + \beta_9 Multiple\ Bidders$$
$$+ Time\ Fixed\ Effects + Industry\ Fixed\ Effects + \varepsilon_i$$

In order to test hypothesis 1b, a regression will be conducted solely on the components explicitly mentioned in this formula:

$$Acquisition\ Premium \tag{1b}$$
$$= \beta_0 + \beta_1 Environmental_{target_{t-1}} + \beta_2 Social_{target_{t-1}} + \beta_3 Governance_{target_{t-1}}$$
$$+ \beta_4 Size_{acquirer_{t-1}} + \beta_5 Size_{target_{t-1}} + \beta_6 Leverage_{target_{t-1}}$$
$$+ \beta_7 (Tobin's\ Q_{acquirer_{t-1}} - Tobin's\ Q_{target_{t-1}}) + \beta_8 Industry\ Related + \beta_9 Cash$$
$$+ \beta_{10} Hostile + \beta_{11} Multiple\ Bidders + Time\ Fixed\ Effects$$
$$+ Industry\ Fixed\ Effects + \varepsilon_i$$

The second hypothesis examines how the variation between the acquiring company's ESG score and the target affects the merger and acquisition premiums. To account for other factors, we have included the same control variables and fixed effects as in the first model, and this has resulted in the following equation:

$$Acquisition\ Premium \tag{2}$$
$$= \beta_0 + \beta_{1(}ESG_{acquirer_{t-1}} - ESG_{target_{t-1}}) + \beta_2 Size_{acquirer_{t-1}} + \beta_3 Size_{target_{t-1}}$$
$$+ \beta_4 Leverage_{target_{t-1}} + \beta_5 \left(Tobin's\ Q_{acquirer_{t-1}} - Tobin's\ Q_{target_{t-1}}\right)$$
$$+ \beta_6 Industry\ Related + \beta_7 Cash + \beta_8 Hostile + \beta_9 Multiple\ Bidders$$
$$+ Time\ Fixed\ Effects + Industry\ Fixed\ Effects + \varepsilon_i$$

The third hypothesis delves into the relationship between a deal's duration and the target's ESG performance. It suggests that the deal tends to result in faster completion when the target has a good ESG performance. The dependent variable in this hypothesis is the deal duration, while the ESG score of the target is the independent variable. The size of both the acquirer and the target are taken into consideration as control variables, along with dummy variables for cash payment and hostile takeover. Furthermore, the equation for hypothesis 3 includes fixed effects and an error term. As a result, the equation that follows can be expressed as:

$$Deal\ Duration = \tag{3}$$
$$\beta_0 + \beta_1 ESG_{target_{t-1}} + \beta_2 Size_{acquirer_{t-1}} + \beta_3 Size_{target_{t-1}} + \beta_4 Cash + \beta_5 Hostile$$
$$+ Time\ Fixed\ Effects + Industry\ Fixed\ Effects + \varepsilon_i$$

The fourth hypothesis aims to determine whether there is a lesser reduction in the M&A premium for deals involving targets with high ESG performance compared to those with lower ESG performance during the pandemic when lower premiums were paid. To test this hypothesis, the difference in premiums paid will be analysed as the dependent variable and the target's ESG score as the independent variable. A dummy variable of COVID-19 and an interaction term for the target's ESG score and COVID-19 are added. Control variables, fixed effects and the error term will be incorporated to ensure the model's accuracy. The above statement leads to the following mathematical equation**:**

$$Acquisition\ Premium = \beta_0 + \beta_1 ESG_{target_{t-1}} + \beta_2 COVID19 + \beta_3 T.ESGxCOVID19 + \beta_4 Size_{acquirer_{t-1}} + \beta_5 Size_{target_{t-1}} + \beta_6 Leverage_{target_{t-1}} + \beta_7 (Tobin's\ Q_{acquirer_{t-1}} - Tobin's\ Q_{target_{t-1}}) + \beta_8 Industry\ Related + \beta_9 Cash + \beta_{10} Hostile + \beta_{11} Multiple\ Bidders + Time\ Fixed\ Effects + Industry\ Fixed\ Effects + \varepsilon_i \quad (4)$$

3.4 Descriptive Statistics

This section presents the descriptive statistics of the variables in the final dataset of 168, including ESG and financial information ranging from 2004 to 2022. To ensure the accuracy of analysis, outliers were identified by examining the skewness and kurtosis of the data. For the acquisition premium variable, winsorizing at the 95th percentile level was the most effective approach, as there were some high outliers at the top. Similarly, the difference between Tobin's Q of the acquirer and the target was winsorized at the 2.5th and 97.5th percentile levels, as there were outliers on both sides. Winsorizing is a statistical technique that preserves the distribution's shape while reducing the impact of extreme values, thus mitigating the influence of outliers on the analysis.

Table 1

Descriptive Statistics

	N	Mean	SD	Min	Median	Max	Skewness	Kurtosis
Acquisition Premium	168	42.544	32.540	0	33.805	130.77	1.301	4.172
Target ESG	168	37.606	17.784	2.29	35.155	83	.435	2.484
Target ESG	168	24.767	23.949	0	18.075	87.3	.747	2.457
Target ESG	168	39.14	21.078	2	35.965	91.32	.521	2.673
Target ESG	168	47.032	20.464	3.33	50.28	96.68	-.091	2.238
Acq. – Tar. ESG	168	16.03	23.654	-44.43	13.495	81.43	.24	3.132
Acq. – Tar. ESG	168	23.275	30.609	-54.44	22.85	89.05	-.035	2.584
Acq. – Tar. ESG	168	14.58	26.412	-58.87	12.05	77.74	.175	2.95
Acq. – Tar. ESG	168	12.085	30.251	-60.77	12.58	91.22	.007	2.71
Target Size ($M)	168	645	6295	0.0504	5.291	80720	12.384	157.658
Acquirer Size ($M)	168	2065	11010	0.481	39.331	105900	7.599	64.572
Target Leverage	168	.229	0.184	0	.199	.926	.801	3.466

Acq. – Tar. Tobin's Q	168	-.022	0.135	-.58	-.005	.282	-1.548	8.447
Cash Payment	168	.339	0.475	0	0	1	.679	1.461
Hostile	168	.012	0.109	0	0	1	9.001	82.012
Multiple Bidders	168	.101	0.302	0	0	1	2.645	7.995
Industry Related	168	.619	0.487	0	1	1	-.49	1.24
Deal Duration (D	168	281.72	229.789	0	226	1616	2.111	10.234
Deal Value ($M)	168	7020	16638	1.676	930	101491	3.507	15.542

Note. This table presents the descriptive statistics for the dependent, independent, and control variables. The analysis uses a final sample of 168 deals where the target's deal and ESG data are available.

Table 1 presents the acquisition premium as the dependent variable, with a mean of 42.5% and a standard deviation of 32.5%. While this is higher than some previous studies, it is consistent with Gomes and Marsat's (2018) findings, which reported a mean of 32.1% and a standard deviation of 26.8%. Jost et al. (2022) also found a similar mean premium of 39.1% but a higher standard deviation of 35.3%. The independent variables in this study range from 0 to 100, reflecting the minimum and maximum scores. The mean ESG target score is 37.6, with a notable difference among the three pillars, where governance has the highest mean score, followed by social and environmental scores. The mean difference between the ESG score of the acquirer and the target is positive at 16%, indicating that, on average, the acquiring company has a higher score than the target. The size of the target has a mean of $645 million, consistent with Gomes and Marsat's (2018) findings, while the target's leverage aligns with both Jost et al. (2022) and this study at 19.4% and 22.4%, respectively. Regarding deal characteristics, hostile takeovers accounted for approximately 1% of the sample, while 10.1% of deals had multiple bidders. Industry-related deals were prevalent, representing 61.9% of the transactions, slightly higher than Gomes and Marsat's (2018) 47.3%. The mean duration of deals was found to be 281.72 days, whereas the median duration was 226 days. These results indicate that it took over half a year to finalise each deal on average. Furthermore, the average value of deals was $7.020 billion, with the highest deal value recorded at $101.4 billion.

An analysis was conducted on the correlation matrix (Appendix A) to determine the relationships between the variables in the empirical model. The examination focused on the acquisition

premium, the ESG scores of the target, and the control variables. A correlation coefficient of 0.7 or higher indicates a high correlation between the variables. No excessive scores were in the correlation between the acquisition premium and other variables. A high correlation was noted between the combined ESG scores of the targets and the individual scores, as expected, since the scores are derived from them. This will not affect the research as they will not be used together in the same regression analysis. The size of the target and the acquirer have a higher correlation, but it does not exceed the threshold of 0.7. This indicates a moderate to weak level of correlation between the variables. A Variance Inflation Factor (VIF) test was also performed to detect multicollinearity in the model. The VIF results (VIF <10) confirmed the absence of multicollinearity.

Following an analysis of the correlation matrix and subsequent tests for multicollinearity, it has been determined that the variables included in the regression models are not afflicted by significant issues of correlation or multicollinearity. As a result, these variables are appropriate for further regression analyses. Refer to Tables 6 and 7 in Appendix A for a detailed overview of the correlation between all variables utilised in the empirical model.

4. Results

This section delves into the analysis of empirical results for each hypothesis, the discussion of their implications, and comparing the findings with those of previous studies. Additionally, various tests are conducted on the dataset to ensure the robustness of the results.

4.1 The Impact of the Target's ESG Performance on the Acquisition Premium

The present study conducts a regression analysis to investigate the relationship between the ESG score of the target and the acquisition premium. The first hypothesis posits that there is a positive relationship between the ESG score of the target and the acquisition premium. R-squared and adjusted R-squared values were used to evaluate the regression models' explanatory power. Model 1 had limited explanatory ability, with an R-squared of 0.045 and an adjusted R-squared of 0.010. In model 2, a slight improvement was observed, with an R-squared of 0.080 and an adjusted R-squared of 0.015. Model 3 showed a significant enhancement by adding the year and industry fixed effects, with an R-squared of 0.185 and an adjusted R-squared of 0.055. Model 4 continued this trend, indicating improved explanatory power, with an R-squared of 0.199 and an adjusted R-squared of 0.055. This R-squared indicates that around 19.9% of the acquisition premium's variance can be attributed to the chosen independent variables. The adjusted R-squared shows that the ESG score accounts for only 5.5% of the variance in acquisition premiums. These findings indicate a progressive increase in model fit and explanatory ability from model 1 to model 4. However, the models do not have a high level of explanatory power. By comparing it to the research of Gomes and Marsat (2018), who examined the impact of CSR performance on the acquisition premium, we can observe a higher adjusted R-squared ranging between 0.220 and 0.228. This suggests that the model explains a more significant portion of the variability in the dependent variable when compared to the other model. This could be due to the fact that CSR and ESG have different characteristics, making them distinct, independent variables.

Table 2

Regression 1 - The Impact of the Target's ESG Performance on the Acquisition Premium

Acquisition Premium	(1)	(2)	(3)	(4)
Target ESG	0.005		-0.062	

	(0.157)		(0.188)	
Target E		-0.117		-0.0705
		(0.152)		(0.188)
Target S		0.307*		0.215
		(0.165)		(0.221)
Target G		-0.249*		-0.214
		(0.143)		(0.169)
Acquirer Size	-0.552	-0.419	-0.428	-0.126
	(1.391)	(1.381)	(1.492)	(1.504)
Target Size	-0.743	-0.507	-0.894	-0.883
	(1.686)	(1.697)	(1.914)	(2.003)
Target Leverage	-9.373	-14.04	-1.605	-5.432
	(14.55)	(14.52)	(16.34)	(16.55)
Acq. – Tar. Tobin's Q	11.46	21.67	12.35	20.62
	(20.80)	(21.10)	(23.01)	(23.65)
Industry Related	0.943	-0.212	0.251	-1.377
	(5.578)	(5.664)	(6.604)	(6.765)
Cash Payment	7.151	6.453	11.67*	10.36
	(5.838)	(5.767)	(6.852)	(6.887)
Hostile	7.645	12.42	14.06	17.67
	(24.03)	(23.86)	(26.57)	(26.74)
Multiple Bidders	15.08*	16.14*	10.63	11.73
	(8.589)	(8.538)	(9.864)	(9.926)
Constant	61.66***	60.48***	75.29**	75.05**
	(22.29)	(23.13)	(33.60)	(37.09)
Observations	168	168	168	168
R-squared	0.045	0.080	0.185	0.199
Adj. R-squared	0.010	0.015	0.055	0.055
Year Fixed Effects	No	No	Yes	Yes
Industry Fixed Effects	No	No	Yes	Yes

Note. This table presents the results of the OLS regression analysis for hypothesis 1, with and without fixed effects. The dependent variable analysed is the acquisition premium four weeks before the announcement. The independent variables under examination are the target's ESG score and the environmental, social, and governance score, which are analysed separately. The robust standard errors are presented in parentheses below each regression coefficient. The symbols *, **, and *** indicate the statistical significance levels of 0.10, 0.05, and 0.01, respectively.

The results from the first and third models indicate that the overall ESG score of the target has no significant effect on the acquisition premium. It is important to note that the present findings diverge from Ozdemir et al.'s (2022) previous research, which identified a positive correlation between a target's CSR performance and the acquisition premium. This difference could be attributed to the

distinct CSR and ESG score assessment metrics. However, the second model reveals a positive relationship between the social score of the target and the acquisition premium. Specifically, a one-unit increase in the social score of the target results in a 0.307% increase in the acquisition premium at a 10% significance level. This result is consistent with prior research by Malik (2014), who also discovered a positive impact of the social score on the M&A premium, but in this study, the social score was based on the CSR score of the target. In contrast, the governance score of the target exhibits a negative relationship with the acquisition premium. A one-unit increase in the governance score leads to a -0.249% decrease in the acquisition premium. To test the robustness of the findings, the third and fourth models include year and industry-fixed effects. The results from the third model demonstrate no significant effect of the ESG score of the target on the acquisition premium, which differs from Gomes and Marsat's (2018) findings of a positive relationship between the CSR score of the target and the acquisition premium. Similarly, the fourth model concludes that there is no relationship between the ESG score of the target and the acquisition premium. An analysis of hypothesis 1 shows inconclusive results regarding whether the desired ESG score positively influences the acquisition premium. The null hypothesis cannot be rejected. However, the second part of the hypothesis indicates that social scores significantly impact the premium paid. Model 2 supports this notion, demonstrating a positive effect with a significance level of 10%. In model 4, the incorporation of fixed effects also indicates a positive effect, though it is not statistically significant. Therefore, we cannot reject the null hypothesis and conclude that insufficient evidence suggests a direct effect of the social score on the acquisition premium.

Regarding the control variables, the findings indicate a significant effect of multiple bidders in a transaction in models 1 and 2. Specifically, having at least two bidders increases the acquisition premium by 15.08% and 16.14%, respectively, at a 10% level. These outcomes align with research by Walkling and Edmister (1985), who found that auctions with multiple bidders increased the acquisition premium by 30 percentage points due to heightened competition and the desire to secure the deal. In the third model, cash payment also exhibits a significant effect on the acquisition premium, resulting

in an 11.67% increase at a 10% level of significance, holding other factors constant. However, none of the other control variables demonstrate a significant effect on the acquisition premiums in any of the regression models.

4.2 Influence of ESG Performance Difference on M&A Premium

Table 3 will include a regression analysis to investigate hypothesis 2. The hypothesis suggests that if there is a positive difference between the ESG score of the acquirer and the target, it will have a positive effect on the M&A premium. Additionally, this analysis will examine the differences between the ESG scores of the acquirer and the target, including their environmental (E), social (S), and governance (G) scores. In the regression analysis, the initial two models had no fixed effects added, resulting in a low adjusted R-squared of 0.0003 for the first model. However, a higher adjusted R-squared of 0.051 was discovered in model 2 with separate scores. Models 3 and 4 included fixed effects, which increased the adjusted R-squared to 0.052 and 0.076, respectively. Compared to other research, these values were relatively lower than the adjusted R-squared of the regressions of Tampakoudis and Anagnostopoulou (2020), which varied between 0.174 and 0.414. That study examined the difference in the CSR score of the acquirer and the target.

Table 3

Regression 2 - Influence of ESG Performance Difference on M&A Premium

Acquisition Premium	(1)	(2)	(3)	(4)
Acq. – Tar. ESG	0.137		0.0929	
	(0.112)		(0.131)	
Acq. – Tar. E		0.211*		0.158
		(0.110)		(0.129)
Acq. – Tar. S		-0.314**		-0.233
		(0.129)		(0.153)
Acq. – Tar. G		0.252**		0.179
		(0.0982)		(0.114)
Acquirer Size	-0.921	-1.482	-0.665	-0.973
	(1.417)	(1.396)	(1.527)	(1.528)
Target Size	-0.306	-0.0753	-0.748	-0.714
	(1.676)	(1.640)	(1.915)	(1.915)
Target Leverage	-9.502	-10.77	-2.206	-4.382
	(14.42)	(14.05)	(16.33)	(16.27)
Acq. – Tar. Tobin's Q	14.30	23.03	13.06	20.85

	(20.67)	(20.43)	(22.90)	(23.22)
Industry Related	1.064	-1.472	0.769	-1.192
	(5.521)	(5.452)	(6.644)	(6.679)
Cash Payment	7.497	8.919	11.51*	11.85*
	(5.761)	(5.643)	(6.757)	(6.736)
Hostile	6.847	13.72	14.39	17.13
	(23.69)	(23.30)	(26.43)	(26.39)
Multiple Bidders	15.26*	18.43**	10.62	13.46
	(8.455)	(8.293)	(9.813)	(9.861)
Constant	59.16***	65.44***	72.98**	83.21**
	(22.27)	(21.81)	(33.74)	(33.98)
Observations	168	168	168	168
R-squared	0.054	0.113	0.187	0.212
Adj. R-squared	0.0003	0.051	0.052	0.076
Year Fixed Effects	No	No	Yes	Yes
Industry Fixed Effects	No	No	Yes	Yes

Note. This table presents the results of the OLS regression analysis for hypothesis 2, with and without fixed effects. The dependent variable analysed is the acquisition premium four weeks before the announcement. The independent variables being analysed are the difference between the ESG scores of the acquirer and the target and the individual environmental, social and governance scores. The robust standard errors are presented in parentheses below each regression coefficient. The symbols *, **, and *** indicate the statistical significance levels of 0.10, 0.05, and 0.01, respectively.

The analysis results indicate no evidence of a positive significant effect of the difference in ESG score between the acquirer and the target on the premium paid. This finding, contrary to the study conducted by Tampakoudis and Anagnostopoulou (2020), suggests that the difference between ESG scores is not a significant factor in determining the acquisition premium. Adding year and industry fixed effects in model 3 remained the same result. However, the results of model 2 show a significant effect of the difference in the environmental score of the acquirer and the target on a 10% level. Specifically, the coefficient indicates that a one-unit increase in the difference between the acquirer's E score and the target results in a 0.211% increase in the acquisition premium. Furthermore, a difference of one unit in the social score between the acquirer and the target leads to a lower acquisition premium of 0.314% ceteris paribus on a 5% level. This finding suggests that acquirers with a higher social score than the target pay less premium in the deal. This result is consistent with the study conducted by Krishnamurti et al. (2019), which found that more socially responsible firms paid a lower bid premium

if they scored higher than the target on the social part of the CSR score. Regarding the governance score, the results of model 2 show a significant effect of 0.252 on a 5% level. This finding suggests that the difference in the governance score significantly impacts the acquisition premium in model 2. However, when the fixed effects are included in model 4, there is no significant effect visible when there is a difference between the scores of the acquirer and the target.

Based on the control variables, having multiple bidders has a positive impact on the acquisition premium, as demonstrated in models 1 and 2. Specifically, if there is more than one bidder, the premium will increase by 15.26% and 18.43%, respectively, with a significance level of 10% and 5%. This discovery is consistent with the findings of Walkling and Edmister (1985). Furthermore, models 3 and 4 show a positive and significant impact when the deal is paid entirely in cash, with a significance level of 10%. This finding is in line with the research of Eckbo (2009), which suggests that paying with cash leads to higher bid premiums compared to non-cash transactions.

4.3 Influence of the Target's ESG Performance on the Deal Duration

Table 4 contains the regression model for hypothesis 3. The hypothesis explores the relationship between the target's ESG score and the deal's duration. It suggests a negative correlation exists between the ESG score and the number of days between the announcement and the effective date. The first model has no fixed effects and an adjusted R-squared value of 0.231. This statistic indicates that approximately 23.1% of the variability in the duration of the deal could be attributed to the fluctuations in the ESG score of the target. The second model, which breaks down the ESG score into its components, has an almost identical adjusted R-squared value of 0.229. When year and industry fixed effects are included in models 3 and 4, the adjusted R-squared value increases to 0.440 and 0.447, respectively. This notable improvement underscores the significant role that year and industry factors play in explaining a more comprehensive understanding of the relationship between a target's ESG score and the temporal aspects of a deal. These R-squared scores are consistent with Deng et al.'s (2013) research, where they also examined the effect of a target CSR score on the duration of the deal.

Table 4

Regression 3 - Influence of the Target's ESG Performance on the Deal Duration

Deal Duration	(1)	(2)	(3)	(4)
Target ESG	0.013***		0.004	
	(0.003)		(0.003)	
Target E		0.001		-0.002
		(0.003)		(0.003)
Target S		0.010***		0.007*
		(0.003)		(0.004)
Target G		0.001		-0.002
		(0.003)		(0.003)
Acquirer Size	-0.009	-0.008	-0.011	-0.007
	(0.027)	(0.027)	(0.024)	(0.024)
Target Size	0.118***	0.125***	0.146***	0.153***
	(0.033)	(0.034)	(0.032)	(0.033)
Cash Payment	-0.158	-0.163	-0.194*	-0.220*
	(0.115)	(0.115)	(0.114)	(0.114)
Hostile	0.450	0.528	0.892**	0.988**
	(0.484)	(0.487)	(0.443)	(0.444)
Constant	3.214***	3.133***	2.751***	2.591***
	(0.459)	(0.478)	(0.569)	(0.626)
Observations	168	168	168	168
R-squared	0.254	0.261	0.555	0.567
Adj. R-squared	0.231	0.229	0.440	0.447
Year Fixed Effects	No	No	Yes	Yes
Industry Fixed Effects	No	No	Yes	Yes

Note. This table presents the results of the OLS regression analysis for hypothesis 3, both with and without fixed effects. The dependent variable used in the analysis was deal duration, while the independent variables included the environmental, social, and governance score and the target's ESG score. Robust standard errors in parentheses accompany each regression coefficient. The statistical significance levels are denoted by *, **, and ***, respectively, representing 0.10, 0.05, and 0.01 significance levels.

The study's findings on the impact of the target's ESG score on the deal duration are presented in Table 4. In the first model, it was observed that the target's ESG score has a significant effect on the deal duration. The regression model indicates that a one-unit increase in the target's ESG score results in an estimated 1.3% increase in the natural logarithm of the deal duration at a 1% significance level. This suggests a statistically significant positive correlation between higher ESG scores and longer deal durations. However, this finding contradicts the third hypothesis, which implies a negative relationship.

Further analysis of the data in model 3 with fixed effects shows that the target's ESG score does not significantly affect the deal duration. While the null hypothesis can be rejected based on model 1, the alternative hypothesis of a negative relationship cannot be accepted. Instead, there must be a positive one. Notably, no research has been done on the effect of ESG scores on the deal duration. However, a comparison with its predecessor, CSR, shows that it is not in line with the findings of Deng et al. (2013), who found a negative relationship. In the second model, it was observed that a higher social score of the target positively affects the deal duration, leading to an estimated 1% increase in the natural logarithm of the deal duration at a 1% significance level. This means that an increase of 1 point in the target's social score will cause an increase of 1% in the deal duration measured in days. In other words, the days between the announcement and effective dates will increase when the target has a higher social score. However, there is no significant effect on the environmental and governance score. Additionally, model 4 shows a positive significant effect on the target social score at a 10% level. This suggests that the target's social score positively affects the deal duration, which does not align with our hypothesis. The results suggest that the target's ESG score positively impacts the deal duration. Nevertheless, this finding is not consistent with the hypothesis.

According to the analysis conducted across all four models, it was found that control variables have a positive and significant influence on the deal duration with a 1% level of statistical significance in relation to the target size. This finding is consistent with the earlier research conducted by Luypaert and De Maeseneire (2015), which indicated that larger targets require more time to finalise the deal, perhaps due to regulatory approval or stakeholder involvement. Furthermore, it was observed that cash payment has a negative and significant impact on the duration of the deal in models 3 and 4. This finding is consistent with the assertion made by Luypaert and De Maseneire (2015) that cash transactions have less administrative burden than stock transactions. The regression model also confirmed that hostile deals take longer, supporting that target shareholders must be convinced of the deal's merits. At the same time, prospective acquirers must fend off any takeover defence mechanisms.

Finally, a significant positive effect was discovered at a 5% level in models 3 and 4, indicating that hostile deals take longer to finalise.

4.4 The Impact of COVID-19 on the Acquisition Premium

Table 5 presents a regression analysis for the fourth hypothesis to determine if COVID-19 has impacted the acquisition premium. The objective is to identify if there was a decrease in the premium paid during the pandemic. The R-squared values for the four models increase from 0.045 for the first and 0.199 for the last model. The adjusted R-squared values reveal a similar trend with 0.016 in the first model, 0.019 in the second model, 0.077 in the third model, and 0.063 in the fourth model when year and industry fixed effects are included. The inclusion of fixed effects in the regression has increased the R-squared values. A COVID-19 dummy variable was used for deals that were effective between March 2020 and December 2021, and the regression is based on 168 observations.

Table 5

Regression 4 - The Impact of COVID-19 on the Acquisition Premium

Acquisition Premium	(1)	(2)	(3)	(4)
Target ESG	0.0102		-0.0621	
	(0.158)		(0.188)	
Target E		-0.117		-0.0705
		(0.153)		(0.188)
Target S		0.307*		0.215
		(0.166)		(0.221)
Target G		-0.248*		-0.214
		(0.145)		(0.169)
T.ESG x COVID-19	0.074		-0.092	
	(0.387)		(0.128)	
COVID-19	-2.875	-0.907	-1.353	-1.605
	(11.50)	(11.38)	(24.84)	(24.89)
Acquirer Size	-0.552	-0.419	-0.428	-0.126
	(1.395)	(1.386)	(1.492)	(1.504)
Target Size	-0.766	-0.513	-0.894	-0.883
	(1.694)	(1.704)	(1.914)	(2.003)
Target Leverage	-9.316	-14.01	-1.605	-5.432
	(14.60)	(14.57)	(16.34)	(16.55)
Acq. – Tar. Tobin's Q	12.02	21.82	12.35	20.62
	(20.99)	(21.25)	(23.01)	(23.65)
Industry Related	1.007	-0.186	0.251	-1.377
	(5.600)	(5.691)	(6.604)	(6.765)

Cash Payment	7.149	6.455	11.67*	10.36
	(5.856)	(5.785)	(6.852)	(6.887)
Hostile	7.482	12.36	14.06	17.67
	(24.11)	(23.95)	(26.57)	(26.74)
Multiple Bidders	15.24*	16.18*	10.63	11.73
	(8.640)	(8.587)	(9.864)	(9.926)
Constant	61.93***	60.54**	75.29**	75.05**
	(22.38)	(23.21)	(33.60)	(37.09)
Observations	168	168	168	168
R-squared	0.045	0.080	0.185	0.199
Adj. R-squared	0.016	0.019	0.075	0.063
Year Fixed Effects	No	No	Yes	Yes
Industry Fixed Effects	No	No	Yes	Yes

Note. The following table displays the findings of the OLS regression analysis for hypothesis 4. It examines the acquisition premium four weeks before the announcement, with and without fixed effects. The regression investigates two independent variables, the target's ESG score and the environmental, social, and governance score, which are scrutinised separately. The regression coefficients' robust standard errors are provided in parentheses below each coefficient. The symbols *, **, and *** respectively represent the statistical significance levels of 0.10, 0.05, and 0.01.

The data presented in Table 5 shows that the COVID-19 pandemic has not significantly impacted the premiums paid for mergers and acquisitions in model 1. Further analysis in model 2 yields similar results, indicating no observable effects of the pandemic on M&A premiums. When year and industry-fixed effects are introduced in models 6 and 7, there is still no discernible impact on the premium. The components of the score are also analysed in the last model, revealing no significant effects. This contrasts with Zhang's (2019) study, which found that economic downturns result in lower final premium levels. Poor economic conditions can lead to an undervaluation of prospective synergies in target firms, resulting in lower premium amounts. Based on the models used, the null hypothesis cannot be rejected, indicating that COVID-19 did affect M&A premiums. After analysing the interaction term between the ESG score of the target and the impact of COVID-19 on the acquisition premium, it can be concluded that there was no significant effect. This result suggests that the ESG performance of acquirers did not significantly affect acquisition premiums during the COVID-19 pandemic, compared to those with inferior ESG performance, while keeping all other aspects constant. Therefore, it is not possible to dismiss the null hypothesis. In model 2, the social score of the target has a positive and

significant effect at a 10% level. Specifically, a one-unit increase in the social score is found to increase the acquisition premium by 0.307%. Conversely, the governance score has a negative effect on the acquisition premium at a 10% significance level.

The control variables exhibit similar effects to those observed in Table 2. In the first two models, multiple bidders have a significant impact on the acquisition premium at a 10% level. Additionally, in model 3, a positive effect on the premium is observed when the acquisition is paid in total cash, resulting in a boost of 11.67%.

4.5 Robustness Analysis

This section pays close attention to the strength and reliability of the empirical analysis carried out in the study, particularly concerning the acquisition premium, which is the dependent variable. The variable reflects the difference between the acquiring firm's offer price and the target firm's market value x days/weeks prior to the announcement of the deal. It is worth noting that this variable can vary depending on the timeframe considered. To ensure the accuracy of the findings, the conventional approach of utilising a four-week window before the deal announcement was followed to mitigate the announcement's impact and any information leakage. However, a sensitivity analysis was also conducted to assess the effect of different time lags, as Choi et al. (2015) recommended.

Appendix B presents the results of hypotheses 1, 2, and 4, using an acquisition premium calculated one week prior to the announcement in Tables 8, 9, and 10. Interestingly, altering the timeframe did not significantly affect the regression findings. In regression 1, Table 8 indicates that the acquisition premium was not significantly impacted by ESG scores, which aligns with section 4.1's results. Table 9 shows one positive and significant effect of the difference in governance score between the acquirer and the target, consistent with Table 3's findings. Additionally, Table 10 demonstrates that the target's ESG score did not significantly affect the acquisition premium. Furthermore, the study reveals that COVID-19 did not influence the one-week premium.

The assessment also revealed that the multiple bidders' variables were statistically significant in most regression models, confirming their reliability in the analysis. Also, cash payment was

sometimes significant on a 10% level. This thorough evaluation emphasises the stability of the findings when considering different specifications for the acquisition premium's timeframe, thereby reinforcing the robustness of the study's empirical analysis.

5. Conclusion

5.1 Summary of the Findings

This study examines the impact of a target's ESG performance on M&A premiums. It investigates whether companies pay more for firms with superior ESG performance and highlights the increasing importance of ESG in M&A. The research question stated: *What is the impact of a target's ESG performance on the premium paid in mergers and acquisitions?* The methodology utilised ordinary least square regressions, which were conducted on public companies with a value exceeding $1 million from 2004 to 2022. This research is compelling because it emphasises sustainability, a critical and pressing concern in today's business landscape.

In the first hypothesis, the study's findings indicate that the target's overall ESG score does not significantly impact the acquisition premium, unlike prior research that suggested a positive link between CSR performance and acquisition premiums (Gomes & Marsat, 2018). However, the target's social score does show a positive relationship with the acquisition premium, consistent with previous research (Caiazza et al., 2021). On the other hand, the governance score of the target has a negative impact on the acquisition premium. Robustness tests using year and industry fixed effects yield similar results, indicating that the ESG score does not significantly impact the acquisition premium. In summary, the study's findings do not provide conclusive evidence to support a direct relationship between a target's ESG score and the acquisition premium. Although the social score has an impact, it remains inconclusive due to statistical significance concerns.

According to the second hypothesis, the analysis did not find a statistically significant positive effect of differences in ESG scores between acquirers and targets on the acquisition premium, contrary to a previous study's findings (Tampakoudis & Anagnostopoulou, 2020). However, there was a significant effect in the case of environmental score differences. In contrast, social scores resulted in a lower premium. The impact of governance score differences was inconclusive.

The third hypothesis reveals that a higher ESG score of the target company is linked to longer deal durations. Initially, and contrary to what was expected, a significant positive correlation was found.

When fixed effects are introduced, the effect becomes insignificant. These results contrast with previous CSR research (Deng et al., 2013). Furthermore, a higher social score of the target is positively linked to deal duration, but no significant effect was observed for environmental and governance scores. Contrary to the initial hypothesis, this suggests that the target's ESG score positively affects deal duration.

As for the last hypothesis, the analysis shows that the COVID-19 pandemic did not significantly impact M&A premiums. When year and industry effects were considered, this result remained consistent. Contrary to prior research (Beloskar & Rao, 2023), this study did not find the pandemic to affect premium levels. Moreover, there was no significant effect when evaluating the connection between the target's ESG score and the impact of COVID-19 on the acquisition premium. In other words, acquirers' ESG performance did not distinctly influence premiums during the pandemic compared to those with weaker ESG performance. The study's findings are robust to alternative measures for acquisition premiums.

5.2 Implications

The study investigates the intricate relationship between a company's ESG performance and M&A premiums. While prior research has suggested a strong connection between high ESG scores and direct uniform increases in acquisition premiums, this study presents contrasting results. Therefore, companies and investors should not make broad ESG decisions without considering industry and transaction characteristics. Different facets of ESG, such as social and governance scores, can have varied impacts on acquisition prices. Hence, it is crucial to have a nuanced perspective of ESG performance. Firms should reflect overall ESG scores as well as have reflections of relevant components that are directed towards specific deal types and industries.

Furthermore, the research indicates that the ESG score of a target firm can influence the duration of M&A transactions. However, this relationship is complex and requires case-by-case assessment. Additionally, the study examines the impact of the COVID-19 pandemic on M&A premiums

and finds that it had not affected the premiums given acquirers' ESG performance. This means that during turbulent times, ESG factors may not result in higher M&A outcomes than other drivers.

In conclusion, this research highlights the need for a flexible and comprehensive model to evaluate the impact of ESG performance on M&A outcomes. The impact of ESG on premiums is complex and subject to various factors at play. As a result, operators and investors should avoid generalisations and recognise that numerous elements are at play in M&A scenarios.

5.3 Limitations and Future Research

However, there are important considerations that help to discern the limitations of this study better. First of all, assessing ESG scores is complicated because there is no framework that has been universally recognised for such an evaluation. Subjectivity in the ESG scoring methodologies can be challenging, but the Refinitiv Eikon database is a fund's data source that enjoys contributions of scores of analysts. It must further be put into knowledge that ESG scores can still be affected by individual judgment and interpretation. Another issue is that there is no global mandate that forces the company to disclose its ESG data. So, in this use, some firms chose not to publicise information that they may have regarding ESG issues, rendering the data biased. In consequence, this creates the risk of overrepresenting companies with favourable ESG scores while leaving ones with relatively less impressive ESG performance outside the move. Lastly, it is to mention that a sample size of 168 transactions used in this study is relatively small. This reason is due to the overall lack of general access to ESG scores for companies within the period leading up to 2012. Again, the lack of historical data on ESG limits the scope of analysis overall since there is a limited number of deals available for further examination.

To strengthen the analysis of the impact of M&A premiums in future research that concerns ESG scores, there is the recommendation of using the scores coming from different databases. With the use of different data sources, the analysis becomes more coherent and complete. This thereby presents a more diversified outlook from the association of ESG performance with M&A premiums. This methodology helps researchers in cross-verifying and validating their findings, which effectively

shortens the potential bias that becomes associated with using only one data source. In addition, further studies on the subject would be recommended later when there is more accurate and more extensive ESG data available. Emerging ESG practices should progressively make data available through global obligations and regulations that would generate valuable information on the influence on M&A outcomes.

Further research possibilities can be identified on how ESG scores affect target companies once an acquisition has been made. In particular, understanding how the ESG performance of targets evolves after being acquired will help shed light on the role of acquirers in influencing their target's sustainability activities. This research will explain whether acquirers successfully maintain or even improve the ESG performance of the target firm besides bringing to the spotlight the ESG integration strategies they employ. For example, it can establish whether acquirers with high ESG scores have better performance of the target at heart or, instead, they would seek ESG-friendly targets to complement their strengths. In the long term, this analysis can provide valuable insights into the dynamic relationship existing between the acquirer, especially concerning their target's ESG scores.

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7. Appendices

Appendix A

Table 6

Pearson Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Acquisition Premium	1.000								
(2) Target ESG	-0.006	1.000							
(3) Target E	0.001	0.817***	1.000						
(4) Target S	0.082	0.876***	0.671***	1.000					
(5) Target G	-0.120*	0.702***	0.407***	0.377***	1.000				
(6) Acq. – Tar. ESG	0.104	-0.481***	-0.396***	-0.377***	-0.402***	1.000			
(7) Acq. – Tar. E	0.124*	-0.343***	-0.474***	-0.236***	-0.196***	0.817***	1.000		
(8) Acq. – Tar. S	0.003	-0.402***	-0.322***	-0.461***	-0.181**	0.882***	0.673***	1.000	
(9) Acq. – Tar. G	0.153**	-0.427***	-0.236***	-0.209***	-0.636***	0.754***	0.439***	0.454***	1.000
(10) Target Size	-0.043	0.258***	0.314***	0.157**	0.196***	-0.125*	-0.121	-0.135*	-0.046
(11) Acquirer Size	0.025	0.177**	0.160**	0.110	0.152**	0.150**	0.169**	0.063	0.197***
(12) Target Leverage	-0.044	0.135*	0.139**	0.176**	-0.016	-0.068	-0.070	-0.060	-0.034
(13) Acq. – Tar. Tobin's Q	-0.021	0.168**	0.098	0.075	0.245***	-0.194**	-0.136*	-0.098	-0.248***
(14) Cash Payment	0.109***	0.026	-0.003	0.053	-0.032	0.030	0.050	0.070	-0.041
(15) Hostile	0.008	-0.045	-0.050	-0.083	0.024	0.006	0.041	0.060	-0.086
(16) Multiple Bidders	0.121***	0.136**	0.122*	0.114*	0.145**	-0.013	-0.037	0.044	-0.076
(17) Industry Related	-0.017	-0.049	0.060	-0.032	-0.106	-0.057	-0.085	-0.107	0.079
(18) Deal Duration	-0.076***	0.339***	0.310***	0.299***	0.184***	-0.020	0.002	-0.027	-0.007
(19) Deal Value	-0.154***	0.372***	0.340***	0.332***	0.246***	-0.129*	-0.055	-0.089	-0.187**

*Note. This table presents the Pearson's correlation matrix for all variables used in the analysis. Statistical significance is indicated by * (p<0.1), ** (p<0.05), and *** (p<0.01)*

Table 7

Pearson Correlation Matrix

Variables	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(1) Acquisition Premium										
(2) Target ESG										
(3) Target E										
(4) Target S										
(5) Target G										
(6) Acq. – Tar. ESG										
(7) Acq. – Tar. E										
(8) Acq. – Tar. S										
(9) Acq. – Tar. G										
(10) Target Size	1.000									
(11) Acquirer Size	0.629***	1.000								
(12) Target Leverage	0.186***	0.068	1.000							
(13) Acq. – Tar. Tobin's Q	0.173***	-0.042	0.104**	1.000						
(14) Cash Payment	-0.151***	-0.012	-0.020	0.008	1.000					
(15) Hostile	-0.044	-0.041**	0.027	-0.032	0.035**	1.000				
(16) Multiple Bidders	0.024	-0.022	0.005	-0.074	0.060***	0.105***	1.000			
(17) Industry Related	0.167***	0.002	0.085**	0.027	-0.199***	0.015	-0.002	1.000		
(18) Deal Duration	0.454***	0.093***	0.118***	0.007	-0.251***	0.051***	0.034**	0.105***	1.000	
(19) Deal Value	0.280***	0.073***	0.091**	-0.024	0.075***	0.059***	0.087***	0.002	0.252***	1.000

*Note. This table presents the Pearson's correlation matrix for all variables used in the analysis. Statistical significance is indicated by * (p<0.1), ** (p<0.05), and *** (p<0.01)*

Appendix B

Table 8

Regression 1 - The Impact of the Target's ESG Performance on the Acquisition Premium

Acquisition Premium	(1)	(2)	(3)	(4)
Target ESG	0.119		0.0556	
	(0.140)		(0.165)	
Target E		0.0669		0.0765
		(0.137)		(0.165)
Target S		0.198		0.127
		(0.148)		(0.194)
Target G		-0.205		-0.158
		(0.129)		(0.148)
Acquirer Size	-0.929	-0.720	-0.657	-0.412
	(1.244)	(1.240)	(1.307)	(1.320)
Target Size	0.463	0.341	0.222	-0.131
	(1.507)	(1.523)	(1.678)	(1.758)
Target Leverage	-10.90	-13.46	-9.473	-11.72
	(13.01)	(13.03)	(14.33)	(14.52)
Acq. – Tar. Tobin's Q	11.74	20.91	15.35	21.57
	(18.59)	(18.94)	(20.17)	(20.76)
Industry Related	-1.083	-2.945	0.911	-0.810
	(4.986)	(5.083)	(5.789)	(5.938)
Cash Payment	6.806	6.338	8.069*	7.111
	(5.219)	(5.176)	(6.006)	(6.045)
Hostile	5.237	9.630	14.81	17.46
	(21.48)	(21.42)	(23.29)	(23.47)
Multiple Bidders	18.97**	19.46**	14.71*	15.28*
	(7.678)	(7.663)	(8.646)	(8.713)
Constant	42.02**	46.96**	69.21**	77.87**
	(19.92)	(20.76)	(29.45)	(32.56)
Observations	168	168	168	168
R-squared	0.074	0.101	0.240	0.252
Adj. R-squared	0.021	0.038	0.016	0.016
Year Fixed Effects	No	No	Yes	Yes
Industry Fixed Effects	No	No	Yes	Yes

Note. This table presents the results of the OLS regression analysis for hypothesis 1, with and without fixed effects. The dependent variable analysed is the acquisition premium one week before the announcement. The independent variables under examination are the target's ESG score and the environmental, social, and governance score, which are analysed separately. The robust standard errors are presented in parentheses below each regression coefficient. The symbols *, **, and *** indicate the statistical significance levels of 0.10, 0.05, and 0.01, respectively.

Table 9

Regression 2 - Influence of ESG Performance Difference on M&A Premium

Acquisition Premium	(1)	(2)	(3)	(4)
Acq. – Tar. ESG	0.114		0.0858	
	(0.100)		(0.115)	
Acq. – Tar. E		0.124		0.140
		(0.100)		(0.114)
Acq. – Tar. S		-0.190		-0.160
		(0.117)		(0.135)
Acq. – Tar. G		0.189**		0.106
		(0.0894)		(0.101)
Acquirer Size	-1.217	-1.575	-0.880	-1.087
	(1.270)	(1.271)	(1.338)	(1.347)
Target Size	1.090	1.219	0.569	0.632
	(1.502)	(1.493)	(1.678)	(1.689)
Target Leverage	-9.996	-10.93	-9.820	-10.96
	(12.93)	(12.79)	(14.31)	(14.35)
Acq. – Tar. Tobin's Q	15.96	22.20	17.85	22.21
	(18.53)	(18.60)	(20.07)	(20.48)
Industry Related	-1.417	-3.226	1.532	0.352
	(4.950)	(4.962)	(5.822)	(5.890)
Cash Payment	7.688	8.711*	8.592	8.627
	(5.165)	(5.136)	(5.922)	(5.941)
Hostile	2.119	7.214	13.69	14.86
	(21.24)	(21.21)	(23.16)	(23.27)
Multiple Bidders	20.05***	22.13***	15.27*	17.36**
	(7.580)	(7.548)	(8.600)	(8.697)
Constant	39.58**	44.14**	66.58**	72.89**
	(19.97)	(19.85)	(29.57)	(29.97)
Observations	168	168	168	168
R-squared	0.077	0.109	0.243	0.256
Adj. R-squared	0.024	0.046	0.020	0.032
Year Fixed Effects	No	No	Yes	Yes
Industry Fixed Effects	No	No	Yes	Yes

Note. This table presents the results of the OLS regression analysis for hypothesis 2, with and without fixed effects. The dependent variable analysed is the acquisition premium one week before the announcement. The independent variables being analysed are the difference between the ESG scores of the acquirer and the target, as well as each of the individual environmental, social and governance scores. The robust standard errors are presented in parentheses below each regression coefficient. The symbols *, **, and *** indicate the statistical significance levels of 0.10, 0.05, and 0.01, respectively.

Table 10

Regression 4 with one-week premium - The Impact of COVID-19 on the Acquisition Premium

Acquisition Premium	(1)	(2)	(3)	(4)
Target ESG	0.136		0.0556	
	(0.141)		(0.165)	
Target E		0.0683		0.0765
		(0.137)		(0.165)
Target S		0.200		0.127
		(0.149)		(0.194)
Target G		-0.193		-0.158
		(0.130)		(0.148)
T.ESG x COVID-19	0.130		-0.286	
	(0.542)		(0.457)	
COVID-19	-9.835	-8.048	-28.24	-27.09
	(10.25)	(10.19)	(21.77)	(21.84)
Acquirer Size	-0.928	-0.725	-0.657	-0.412
	(1.244)	(1.241)	(1.307)	(1.320)
Target Size	0.385	0.285	0.222	-0.131
	(1.510)	(1.527)	(1.678)	(1.758)
Target Leverage	-10.70	-13.22	-9.473	-11.72
	(13.01)	(13.05)	(14.33)	(14.52)
Acq. – Tar. Tobin's Q	13.69	22.24	15.35	21.57
	(18.71)	(19.04)	(20.17)	(20.76)
Industry Related	-0.866	-2.716	0.911	-0.810
	(4.992)	(5.098)	(5.789)	(5.938)
Cash Payment	6.800	6.356	8.069*	7.111
	(5.220)	(5.182)	(6.006)	(6.045)
Hostile	4.678	9.053	14.81	17.46
	(21.49)	(21.46)	(23.29)	(23.47)
Multiple Bidders	19.53**	19.89**	14.71*	15.28*
	(7.702)	(7.692)	(8.646)	(8.713)
Constant	42.93**	47.49**	69.21**	77.87**
	(19.95)	(20.79)	(29.45)	(32.56)
Observations	168	168	168	168
R-squared	0.079	0.105	0.240	0.252
Adj. R-squared	0.020	0.035	0.016	0.016
Year Fixed Effects	No	No	Yes	Yes
Industry Fixed Effects	No	No	Yes	Yes

Note. The following table displays the findings of the OLS regression analysis for hypothesis 4. It examines the acquisition premium one week before the announcement, with and without fixed effects. The regression investigates two independent variables, the target's ESG score and the environmental, social, and governance score, which are scrutinised separately. The regression coefficients' robust standard errors are provided in parentheses below each coefficient. The symbols *, **, and *** respectively represent the statistical significance levels of 0.10, 0.05, and 0.01.