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Mergers & Acquisitions and ESG

The impact of ESG characteristics on the Takeover Premium

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Master Thesis, Economics & Business Administration, Finance & CEMS Masters in International Management

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1. Abstract

This master's thesis attempts to identify the value of ESG scores through the willingness of acquirers to pay a premium for ESG scores in M&A transactions. As the world is working to become climate friendly through international agreements such as the Paris Agreement, as well as supranational entities requiring companies to reduce their carbon footprint through regulations, ESG scores should become increasingly important when assessing the true value of a company.

This thesis uses data from Thomson Reuters from 2007 to 2020 combined with ESG scores. The models employed attempt to isolate the effects of ESG Scores by controlling for other factors determining the takeover premium in M&A transactions, as well as controlling for country-specific effects on the ESG score. The result of this thesis is that there is no significant effect of ESG scores on takeover premiums in M&A transactions when controlling for EBITDA margin, D/E ratio, Valuation, Toehold, and cross-border takeover. Furthermore, no impact from country-specific effects could be measured when controlling for this factor through two-stage least squares. These findings are different from previous studies on the field of ESG and value creation as other papers have found a positive relationship. This thesis looks into possible explanations for the absence of a link between ESG and takeover premium but must be interpreted with caution as the sample sizes used are small.

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4. Introduction

Environmental, Social, and Governance (ESG) has become an important topic over the last decade and is reflected through how consumers demand responsibility from companies, as well as investors wanting to invest with a good conscience. This trend has become stronger since the financial crisis of 2008. Stakeholders have become increasingly critical to how companies conduct their business and the demand to hold companies accountable for environmental, social, ethical concerns have increased (Galbreath, 2013). There is also pressure from supranational entities such as the European Union (EU, 2019), influence from NGOs (OECD 2004), and shareholders (Boerner 2010; Manescu 2011). These factors have resulted in companies redesigning their strategies to remain competitive. Previous literature has attempted to valuate ESG scores through pricing and performance in the stock market without reaching a consensus. An explanation for this could be because of the intangible nature of resources and capabilities that make up the ESG scores. Organizational capabilities such as culture, tacit knowledge among employees, and reputation are capabilities that can generate value for the company (Wernerfelt, 1984) but is on the other hand difficult to price. This thesis will take a different approach by attempting to valuate ESG scores with M&A transactions specifically by looking at the takeover premium paid by acquirers. The research question of this thesis is "Does ESG scores affect the takeover premium in Takeovers?". The rationale is that the acquirer needs to gain a deep understanding of the target due to the informational asymmetries between the two parties. This is done by performing comprehensive due diligence to gain extensive insight into the company which includes accessing information not accessible to the public. Therefore, it can be argued that an acquirer will have a better understanding of the intangible assets of the target company and their value than traditional investors in the stock market. Furthermore, where traditional investors can easily sell their positions on the open market, acquirers face higher costs associated with divesture from an acquired company. For these reasons, I believe M&A transactions will be a better tool to assess the value of ESG scores.

The background and motivation for conducting this research are based on an article from MSCI on Volkswagen following the diesel gate scandal (MSCI, Volkswagen scandal underlines need for ESG analysis, 2021). The article highlights the importance of ESG

signals to mitigate the risk of corporate scandals. As outlined in the report, Volkswagen's governance rating had deteriorated during 2013-2015 due to products & services quality, bribery, fraud, and collective bargaining resulting in the company being dropped from the MSCI ACWI ESG index. A few months later the dieselgate scandal became public resulting in a 14 billion euro drop in market capitalization (Sjolin, 2015).

This thesis assumes three ways that ESG scores can affect the takeover premium in M&A. The first is based on the findings of MSCI that companies with high ESG scores are less prone to tail-risk stemming from corporate and environmental catastrophes (Giese, Lee, Melas, Nagy, & Nishikawa, 2019). The second is through future-proofing the company against laws and regulations. The third way is through reducing asymmetric information between the target and the acquirer. This thesis will contribute to the existing literature by defining the value of ESG scores from a different perspective.

5. Literature Review

5.1 History of CSR and ESG

The history of how companies impact their surroundings is rich and can be traced back to the 1970s with Moskowitz's study on socially responsible investing (Moskowitz, 1972). This study spawned two dominant views in organizational management theory, the shareholder framework, and the stakeholder framework. The former was championed by Milton Friedman with the words "The only corporate social responsibility a company has is to maximize its profits" (Friedman, 1970). The latter is a theory of business ethics where the company must satisfy different relationships with stakeholders in order to maintain legitimacy (Freeman, 1984). From these theories, there has evolved a new view that is becoming increasingly mainstream in the modern world, shareholder welfare. It builds on the same assumption as Milton Friedman, that managers should care about their principals (shareholders) but it leads to a different conclusion. Milton Friedman argues that managers should pursue policies and practices that maximize the shareholder's returns such as cutting costs and boosting profitability. This rationale assumes that shareholders are only interested in maximizing the market value of the company, but as Hart & Zingales (2017) points out, this is too narrow to describe the shareholder's motives. They are also concerned about ethical and social issues and make decisions in their daily lives to mitigate damage to society and the planet. An example could be to buy an electric vehicle instead of a gasoline vehicle, to buy fairtrade coffee instead of regular coffee, and to avoid wasting water as it is considered a scarce resource. Likewise, shareholders can allocate their capital in order to mitigate social and ethical issues. Friedman recognizes this too but argues that the investors can use their dividends and distribute those to social causes they care about. Hart & Zingales argues that if it costs 120$ to fix the 100$ damage caused by the company, investors will prefer to change the company's policies and practices rather than to pay extra to fix them. Therefore, Hart & Zingales extends Milton Friedman's definition of value for shareholders from a simple financial definition to one that includes societal benefits.

Since the financial crisis of 2008 consumers, governments and NGOs, and shareholders have started to scrutinize the way companies conduct their business to make sure it is conducted

in an ethical fashion (Galbreath, 2013; EU 2019; OECD 2004; Boerner 2010; Manescu 2011). Studies have found that maintaining a favorable public image can have a positive effect on profits for companies. This is achieved by gaining moral capital that can be leveraged in the case of negative events, which in turn can generate market value (Porter & Kramer, 2007; Godfrey, 2005). However, there have been numerous studies attempting to pinpoint the effect of corporate social responsibility (CSR) initiatives and their effect on financial performance without a clear consensus being reached (Aouadi & Marsat, 2018, Servaes & Tamayo, 2013). This could be due to the intangible nature of CSR initiatives making them harder to value than traditional assets.

5.2 CSR vs. ESG

The problem with using CSR as a measure is that there is no clear definition of the concept that can be applied uniformly (Sheehy, 2015). ESG on the other hand is a subcategory of CSR that has guidelines and scoring systems to reduce ambiguity. As a rule of thumb, CSR is about providing accountability while ESG is about creating metrics for collecting data and assessing materiality for stakeholders (Alva-Group, 2020). While ESG disclosures are voluntary, there are standards for reporting such as the GRI principles. Furthermore, third-party rating agencies such as Sustainalytics, MSCI, and Thomson Reuters provide ratings based on their robust ESG frameworks where the score of a company is relative to the industry performance (Eikon, 2017; Sustainalytics, 2021; MSCI, 2020). This helps reinforce the legitimacy of ESG scoring as they are not solely conducted in-house. Supranational action is being taken to develop frameworks and mandatory standards for ESG reporting, such as the EU taxonomies for sustainable investments (EU, 2020) which reduces the likelihood of companies "greenwashing" through misleading claims about their ESG initiatives. For these reasons, ESG scores are a better unit of measurement than CSR when assessing its effect on a company's valuation.

5.3 ESG and Financial Performance

While it is challenging to pinpoint the exact relationship between ESG and financial performance, we know that focusing on ESG issues can lead to improvement for a firm's growth, profitability, and risk exposure (Schramade, 2016). In this study, Schramade found that ESG-driven portfolios outperformed relative sector indices by about 5% annualized. However, the study was conducted over a very short time frame, ESG was not the only decision-driving factor, and they did not correct for style biases. In a meta-analysis by Wallis & Klein (2015), the majority of studies found that ESG funds perform equally to conventional investments while a wide set found an outperformance, and only a few studies identifying a negative relationship. As an additional point they also found that when studying the implementation of ESG, financial performance is positively related to the improvement of ESG. Following the logic of Markowitz and the modern portfolio theory there should be no return premium for idiosyncratic risk. Therefore, if ESG risk factors only are idiosyncratic, investors should be able to eliminate ESG risk through diversification (Markowitz, 1952). ESG risk factors are not only limited to idiosyncratic risk. Risk factors such as climate change, natural disasters, future legislation and regulations on fossil fuels, and litigation costs are factors that affect the overall market and are not limited to a specific firm and should therefore be considered as a part of the valuation process. This thesis will focus on the ESG risk factors that are systematic. If we follow the logic of Fama and the efficient market hypothesis (EMH), stock prices already include all available information and therefore it is impossible to achieve superior returns versus the market portfolio (Fama, 1970). For ESG information to result in superior returns, the screening process will have to produce value-generating information that other investors cannot access. Therefore, if the market is mispricing ESG information, ESG investments can lead to superior returns (Bauer, Koedijk, & Otten, 2005). This also depends on the type of information that is being neglected. A report from MSCI found that companies in the lowest 10% of ESG scores are more likely to experience a material drop in share price following an incident (Giese, Lee, Melas, Nagy, & Nishikawa, 2019). By incorporating ESG information into the valuation process, investors can reduce the likelihood of their portfolio companies experiencing sharp drops in market value due to corporate or environmental catastrophes.

When looking deeper into ESG value creation we see that different industries will require different actions as the materiality of the issues differ. This requires firms to map out and prioritize issues of interest on a company and industry level. By grouping issues into material and immaterial issues we can see that by focusing on high material issues in investment decision-making, top-performing firms will financially outperform the bottom quantile. Furthermore, there are no benefits of focusing on immaterial issues (Khan, Serafeim, & Yoon, 2016). Therefore, to gain the benefits of an ESG strategy the initiatives need to solve material issues for the company.

Previous studies have attempted to identify the role of ESG scores in valuation through pricing in the stock market. However, this tells us little about the true value of these scores as some of their higher realized return in the stock market can be attributed to their popularity among investors with ESG preferences (Stotz, 2021). Investors with these preferences will often first look at a company's ESG score as the initial screening phase before diving deeper into the research process. The problem with this approach is that it creates biases in investment decisions. Smaller companies are typically not covered by rating agencies such as Sustainalytics and MSCI as they rely on demand from their investors for the companies they cover. Since large companies have a higher demand, smaller companies do not appear on the radar of ESG investors. This bias can affect the industries as mature industries with firms that focus on paying steady dividends such as utilities will likely have a higher coverage rate compared to companies focused on reinvestment and R&D such as technology (Doyle, 2018). Furthermore, larger companies have more resources available to conduct in-house ESG reporting and to hire outside consultants to assist in developing targeted ESG disclosures. (European Commission, 2020). There might also be a problem of reverse causality as poor-performing companies often avoid ESG reporting (Brounen, Marcato, & Veld, 2021). The quantity and quality of the industry-specific material issues also affect financial performance (Consolandi, Eccles, & Gabbi, 2020). These factors make it challenging to identify the true value of ESG scores as many other factors will correlate.

5.4 Mergers & Acquisitions

An M&A transaction is a deal where two or more firms consolidate into one entity where the main motive is to gain synergies from the combination of the two firms and is considered a financial and investment decision for managers in order to achieve growth (Leepsa & Mishra, 2016). In M&A, the acquirer will pay a premium for the target company in order to gain control of valuable resources and capabilities (Jensen & Ruback, 1983) which for the acquirer can lead to competitive advantage and create value (Barney, 1991). However, most studies find that M&A is a value-destroying activity for acquiring firms (Jensen & Ruback, 1983; King, Dalton, Daily, & Covin, 2004; Zollo & Meier, 2008). The likelihood of conducting value-destroying acquisitions increases with operating performance (Harford, 1999) which could be a result of managers with extra cash-flow, scarce investment opportunities, and empire-building intent make bad investment decisions (Jensen, 1986). Another reason for value destruction as a result of M&A could be that managers with a track record of excellent organizational performance become overconfident and therefore act irrationally in the M&A deal (Hayward & Hambrick, 1997; Heaton, 2002; Roll, 1986). When it comes to acquisitions within the realm of ESG, studies conducted by McKinsey & Co (2020), show that diverse management teams are better able to generate above-average profitability. This is a result of diverse management teams are better able to make financial and investment decisions. However, this should not necessarily lead to empire-building intent among diverse management teams as an article in the Harvard Business Review found that diverse teams are better at focusing on facts and figures when it comes to making decisions and analyzing information (Rock & Grant, 2016). This can have the opposite effect to reduce the risks of empire building by managers (Gompers & Kovvali, 2018).

The industry of the acquirer and target also plays a role in the long-term success of the M&A transaction. Acquirers can conduct M&A within their industry (within-industry M&A) or acquire companies in other industries (cross-industry M&A). The motivations for within-industry M&A could be to gain synergies within revenue generation or cost synergies by gaining improving their cost structure. The motivation for cross-industry M&A could be to reduce the risk profile of the company, acquisition of assets, or gaining tax benefits, however, overinvestment and cross-subsidization could lead to loss of value (Kling, Ghobadian, Hitt, Weitzel, & O'Regan, 2014; Berger & Ofek, 1995). Acquirers that conduct

cross-industry takeovers generally outperform within-industry acquirers on performance measures, however, this could be attributed to the fact that the performance gap between the acquirer and the target is larger in cross-industry takeovers than in within-industry takeovers (Liu & Qiu, 2021).

5.5 ESG and M&A

For acquirers to be willing to pay a premium for ESG scores there needs to be value-added to be gained for the merged company. There is some evidence that maintaining a positive relationship with stakeholders affects the acquisition process and performance post-merger (Bettinazzi & Zollo, 2017; Salvi, Petruzzella, & Giakoumelou, 2018). This might be because the synergies from targets with ESG risk management practice tend to be higher than those with poor performance (Aktas, de Bodt, & Cousin, 2011). To add to this point, MSCI (2020) found that companies with high ESG scores also have a lower cost of capital in the long run which can positively benefit the merged company. However, as the field is relatively recent the links between ESG and M&A are still unclear. This thesis is focusing on M&A for identifying the value of ESG scores based on two main assumptions. The first one is that the acquirer must gain a comprehensive understanding of the target company and will conduct a thorough due diligence process in order to reduce information asymmetries (Laamanen, 2007). This entails that the acquirer gains access to information that is not publicly available, which should make the acquirer better able to assess the true value of the target company's intangible resources and capabilities. The second assumption is as divestment costs are higher in M&A than in stock markets investments where liquidation is possible at minimal costs.

5.6 Research Question

Given the provided literature, the research question of this thesis: Do ESG scores affect the takeover premium in Takeovers? The aim is to assess the value of ESG scoring from a different perspective than previous literature, namely through analyzing ESG scores' effect on M&A takeover premiums rather than performance in the stock market. This will be tested

by controlling for other attractive target characteristics such as size, growth, profitability, liquidity, toehold, cross-border, and D/E ratio. This thesis will also look into if acquirers in the top quantile of ESG scores are willing to pay a premium for a top-performing target. The rationale for this is that these companies should be better able to appreciate a high ESG score, however, there is less to gain in terms of improvement in ESG score. In this paper, the ESG scores are provided by Thomson Reuters as they take into account materiality impact, size, and transparency biases which is an enhanced version of the ASSET4 ratings (Eikon, 2017). Environmental, Social, and Governance factors will also be individually assessed to take into account the importance of each element.

6. Data

6.1 Collecting Sample Data

To collect the sample data, I will use Refinitiv Datastream. This is one of the world's largest providers of financial markets data and infrastructure. With a 100% focus on the financial community, it has a reputable and reliable database that is optimized for investors, banks, corporates, and more. Its database contains over 70 years of historical data from 175 different countries (Refinitiv, 2021). The data is collected on international M&A transactions announced between 2006-2021 where the acquirer has ownership of less than 50% at the announcement and a higher ownership percentage than 50% post-merger. This dataset is merged with data collected from Thomson Reuters ESG Scores and cleaned for any insufficient data. Finally, financial firms are excluded from following standard practices.

6.2 Measuring ESG Scores

As of 2016, there are 125 providers of ESG data (Kumar & Weiner, 2019). The differences between the providers include definitions of materiality, normalization, and metrics. ESG data providers develop their own frameworks for sourcing, researching, and scoring which leads to variance in scores. In this paper, I chose to use Refinitiv's ESG scores as the data is based on objective metrics and is public. The ESG data is based on 10 categories divided into the three pillars, environmental, social, and governance. Based on the relative performance within the environmental and social pillars, the companies are assigned a score based on a benchmark for the industry, while the governance pillar is ranked based on the relative performance compared to the countries the companies operate in. To compute the overall ESG score, each pillar is given a weight based on the magnitude and relevance of the categories within the pillars (Refinitiv, 2021).

6.3 Computing the takeover premium

The takeover premium is calculated as the difference between the offer price and the market price of the target company (Chan & Walter, 2014). To minimize any influence from the

takeover announcement and speculations from investors on the takeover premium, I will compute the takeover premium based on the share price 4 weeks prior to the announcement date.

7. Methodology

I will use two different methodologies in order to answer the research question of this thesis. First, I will do an ordinary least squares (OLS) analysis to establish that there is a correlation between the takeover premium and ESG scores. Following this, I will separate the acquirers into two buckets, the top and bottom performers on ESG. This is to establish whether acquirers with high scores are willing to pay a higher premium than those with a low score. The argument for this is that acquirers with a high ESG score would be better able to understand the importance of the scores. However, there is more to gain in terms of improvement for a company with a low score when acquiring a company with a high score, which could lead to low-scored companies being willing to pay a higher premium. The next step is to determine which factors are most important depending on the industry, therefore, the following analysis will be focused on identifying the effects of environmental, social, and governance factors on different industries. Depending on the industry, the materiality of issues will differ and will affect the takeover premium differently. Finally, I will do an instrumental variable (IV) analysis in order to mitigate any endogeneity in the sample.

7.1 Ordinary Least Squares

The first OLS regressions will analyze whether there is a non-linear relationship between the takeover premium and the acquirer and target ESG scores. For the dependent variable, I use the logarithm of the takeover premium paid by the acquirer compared to the price of the target four weeks prior to the announcement date expressed as a percentage. As control variables, I will apply EBITDA margin, Toehold, Cross-border, Valuation, D/E ratio, Liquidity, and Growth. The variables of interest will be the logarithm of the ESG score for the acquirer in the first regression, the target in the second regression, and finally each dimension of ESG for the target in the third regression. The control variables include the most attractive attributes of the target. The formulas can be found below as formulas 1, 2, and 3 respectively.

Formula 1 Acquirer ESG

Log(Premium) = β0+ β1 log(Acquirer ESG)+ β2 EBITDA Margin+ β3 Valuation+ β4 Growth+ β5 Toehold+ β6 Crossborder

Formula 2 Target ESG

Log(Premium) = β0+ β1 log(Target ESG)+ β2 EBITDA Margin+ β3 Valuation+ β4 Growth+ β5 Toehold+ β6 Crossborder

Formula 3 Target E, S, and G characteristics

Log(Premium) = β0+ β1 log(Target E)+ β2 log(Target S)+ β3 log(Target G)+ β4 EBITDA Margin+ β5 Valuation+ β6 Growth+ β7 Toehold+ β8 Crossborder

The second part will be conducted by grouping the acquirers into high and low ESG scores where the high group consists of the top 50% performers and the low group consists of the bottom 50% performers. This creates two samples of 13 (Low) and 14 (High). The targets are sorted into groups with a similar logic through a dummy variable, Target ESG Group, which is 1 if the target is in the top half of ESG performers and 0 if not. Then the regression below (formula 4) is run on both groups.

Formula 4 Target ESG Performance Group

Log(Premium) = β0+ β1 log(Target ESG Group)+ β2 EBITDA Margin+ β3 Valuation+ β4 Growth+ β5 Toehold+ β6 Crossborder

7.2 Instrumental Variable – Two-Stage Least Squares

To ensure that the analysis is unaffected by endogeneity, I include an instrumental variable analysis. An instrument needs to satisfy the relevance and exclusion criteria in order to be a

good method of measurement. In this analysis, I will use the host country of the target company as an instrument for the target ESG score. If we follow the findings of Ioannou & Serafeim (2012), a company's corporate social performance (CSP) is affected by the political system, labor and education system, and the cultural system of the host country of the company. This variable has a correlation with target ESG of 0.6553 which means it has a strong first stage.

Table 1 Dummy variable values for countries

Country	Dummy values
United Kingdom	0
China (Mainland)	1
Japan	2
Switzerland	3
United States	4
Canada	5
Norway	6
Hong Kong	7
India	8
Australia	9
Germany	10
Thailand	11
Finland	12
France	13
Israel	14
Luxembourg	15

The instrument also needs to satisfy the exclusion restriction. This means that the instrument must not affect the takeover premium directly, only indirectly through the ESG score. However, there are other factors that could be affected by the country-specific effect. Eichner (2019) found that in cross-border M&A deals, the foreign acquirers were willing to pay a higher takeover premium than the acquirers from the same host country as the targets. Country-specific effects will also have an effect on the industry of the target company and their level of technological advancement, which in turn can affect the takeover premium (Green & Meyer, 1997). Other factors such as taxation, infrastructure, political instability, and regulations will also contribute to the takeover premium. Therefore, the results need to be interpreted with caution.

7.3 Alternative Methodology

7.3.1 Difference in differences (DID)

The rationale for conducting a DID analysis is that the true effect of ESG scores on takeover premiums would become clear by examining the differences between the treatment group and the control group. This could be a good tool to overcome the endogeneity problem (Bertrand, Duflo, & Mullainathan, 2003). However, there are certain limitations to conducting a DID analysis on this data sample. First, DID analysis requires all the assumptions of the OLS model as well as a parallel trend assumption which means that pre-intervention trends are the same between both groups (Ryan, Kontopantelis, Linden, & Burgess, 2019). To help fulfill this assumption it is common to use matching which requires one or more non-treated units with similar observable characteristics. The problem that arises is finding a control group with similar characteristics where treatment is not applied. One solution could be to conduct a DID analysis on ESG scores one could look at the takeover premiums prior to the adoption of ESG scores. This is unrealistic as many other factors that have changed with time will likely influence the treatment group. Another solution could be to use a sample of companies that are not covered by ESG scores. However, as third-party providers are covering companies on a demand basis, most large and attractive companies are covered by ESG rating agencies and therefore would result in small or mid-sized companies being used as control groups. This would also result in other factors being influenced in the treatment group.

8. Hypotheses

This part will outline the hypotheses that will be tested and analyzed with the models. I will first seek to establish a relationship before looking deeper into the causality of ESG on takeover premiums.

8.1 Hypothesis 1

There is scarce literature on the relationship between ESG and M&A. To my knowledge, there is only one study by Gomes & Marsat (2018) that found a relationship between CSR and the takeover premium. However, they looked at only environmental and social factors for the period of 2003-2014 which would only scratch the surface of the latest trends in ESG. Furthermore, they defined CSR as a firm-specific risk factor which is different from what this thesis sets out to do. This thesis includes the latest developments in ESG such as the taxonomy on ESG by the European Union and trends within investing. The first hypothesis seeks to establish that there is a relationship between the ESG score and the takeover premium.

8.1.1 Hypothesis 1

H_0: *There is no relationship between ESG scores and the takeover premium.*

H_A: *There is a relationship between ESG scores and the takeover premium.*

8.2 Hypothesis 2

The second hypothesis is to determine whether acquirers with a high ESG score are willing to pay a greater takeover premium for a target with a high ESG score than an acquirer with a low ESG score. Table 2 gives an overview of the quadrants of ESG scores for the target and the acquirer. Each quadrant should lead to a different outcome in terms of takeover premium. Within this matrix, I believe the top left and top right quadrants will have the greatest effects on the takeover premiums for the following reasons. The top left quadrant could lead to a

higher takeover premium as acquirers with low ESG scores can make strategic acquisitions in order to acquire resources and capabilities to improve their overall ESG. The top right quadrant could lead to a higher takeover premium as the acquirer would be better able to determine the value of the ESG initiatives of the target firm. However, the acquirer in this group also has less to gain in terms of improvement on the ESG score which could negatively impact their willingness to pay.

Table 2 Target and Acquirer ESG score quadrants

Target ESG Score

	LOW – HIGH	HIGH - HIGH
Acquirer ESG Score	LOW – LOW	HIGH - LOW

8.2.1 Hypothesis 2

H_0: *Acquirers with a high ESG score are not willing to pay a higher premium for a target with a high ESG score.*

H_A: *Acquirers with a high ESG score are willing to pay a higher premium for a target with a high ESG score.*

9. Results

In this part of the thesis, I will present the findings and the results from testing the hypotheses. The first part will focus on identifying the relationship between ESG scores and takeover premiums through OLS for both acquirers and targets, before moving into the specific effects of E, S, and G. Then I will look into country-specific effects on ESG scores through two-stage least squares before discussing the results. Finally, I will summarize the findings and the limitations of the research.

9.1 Company ESG score

The first regression seeks to establish a relationship between the acquirers' ESG score and the takeover premium. This regression is conducted on a sample of 219 M&A transactions and the results are shown in the first column of Table 3 below. The main variable of interest is the Acquirer ESG score while other control variables with target characteristics are added to increase the accuracy of the results. T-stat is reported in the parentheses. The Acquirer ESG score is positive, but not significant meaning that even though it shows a positive number, we cannot establish a relationship between acquirers' ESG scores and their willingness to pay a higher premium for target companies. If we look at the other control variables, we find that a toehold increases the takeover premium in the sample by 77.1% as the coefficient is significant at the 5% level. The other variables are not significant, and we can therefore conclude that they are not affecting the takeover premium in this sample. The adjusted R-squared is 0.0193 meaning that only 1.93% of the data fits the model.

The second regression looks at how the target company's ESG score affects the takeover premium. This regression is conducted on a sample of 43 M&A transactions and the results are shown in the second column of Table 3. The main variable of interest is the Target ESG score while other control variables with target characteristics are added to increase the accuracy of the results. The Target ESG score coefficient is in this regression negative, but not significant and therefore a relationship between the target's ESG score and the takeover premium cannot be established. Similar to the first regression, the control variables are also not significant. The adjusted R-squared in this model is -0.00447 which means that the data does not fit the model. The adjusted R-squared and the outcomes of the control variables

lead me to believe that data quality and data availability are the main reasons for the outcomes of the regression analyzes.

Table 3 Results from OLS regressions on Acquirer ESG score, Target ESG score, and underlying dimensions of target ESG.

	Acquirer ESG	*Target ESG*	*Underlying Dimensions*
	(1)	(2)	(3)
Log(Acquirer ESG)	0.15654		
	(1.136)		
Log(Target ESG)		-0.7642	
		(-1.583)	
Log(Target E)			-0.0892
			(-0.414)
Log(Target S)			-0.6678
			(-1.903)
Log(Target G)			0.4157
			(0.915)
EBITDA Margin	-0.36503	0.6592	1.2265
	(-0.676)	(0.573)	(1.025)
Valuation	0.00034	0.0020	0.0022
	(0.797)	(1.424)	(1.554)
D/E Ratio	NA	0.0677	0.1270
		(0.384)	(0.721)
Growth	-0.00458	0.0068	0.0082
	(-1.576)	(0.994)	(1.221)
Crossborder	0.02964	-0.1977	-0.1072
	(0.151)	(-0.567)	(-0.300)
Toehold	0.77104*	0.1301	0.0865
	(1.998)	(0.261)	(0.172)
Constant	2.56480***	5.8946**	3.9834
	(4.585)	(3.321)	(1.959)
Observations	219	43	43
R^2	0.05094	0.1721	0.2614
Adjusted R^2	0.0193	-0.04248	-0.00447

Note: *This table presents the estimations of the effects of acquirer ESG, target ESG, and underlying target characteristics on the takeover premiums.*

*p<0.1; **p<0.05; ***p<0.01

To complement these results, I also conduct an OLS analysis on the underlying dimensions of ESG, namely Environmental, Social, and Governance factors. This is the third column in Table 3. Ideally, I would control for industry and country but due to a small sample size, this is not possible as the observations for each industry and country would be too low. From the regression, we see that only the governance dimension yields a positive coefficient. However, as with the other regression results, these results are not significant. The social dimension yields a negative coefficient and is significant at the 10% level. However, this is not significant enough to establish a connection between the social dimension of ESG and the takeover premium. Therefore, we cannot establish any connection between environmental, social, and governance factors on the takeover premium respectively.

Based on the findings from Gomes & Marsat (2018) I would expect there to be a positive relationship between ESG scores and the takeover premium. Along the environmental dimension, we have a negative coefficient on the environmental dimension which would mean that acquirers are willing to pay a lower premium for companies that perform better along this dimension. As the results are not statistically significant, we can disregard this coefficient. If the results were significant, it could be because the costs associated with utilizing environmentally friendly sources of energy, materials, and chemicals are higher compared to fossil fuel and other harmful materials and chemicals. However, based on findings from Manrique & Marti-Ballester (2017), I believe that acquirers would prefer the extra costs associated with a stronger environmental performance as companies with a strong environmental performance have superior financial performance. Furthermore, they reduce the probability of litigation and regulation from supranational entities following environmental scandals. I believe the results of this regression are due to the small sample size and poor data quality.

The social dimension captures effects concerning stakeholders such as workers, suppliers, consumers, and the communities they affect. As the regression has yielded a negative coefficient it would seem that acquirers are willing to pay a lower premium when performing strongly along this dimension. This would mean that acquirers would negatively value

investments by the target into worker protection rights and a diverse workforce. However, as the results are not statistically significant, we can disregard this coefficient as well. My expectation for the coefficient along this dimension with a good and representative sample is that it would be positive. Companies with a strong performance along the social dimension can drive employee engagement and innovation (Griffith & Macartney, 2014; Gartner, 2019) which in turn can contribute to improving financial performance and competitive advantages. A strong performance along the social dimension can also contribute to mitigating the risk of corporate scandals, worker strikes, and sanctions from NGOs and governments. These qualities should be favorable for an acquirer as it helps to mitigate any reputational losses from corporate scandals which in turn could hurt the financial performance of the firm.

Along the governance dimension, the regression yields a positive coefficient which would signify acquirers' willingness to pay a 0.42% higher premium per percentage of increase along the governance dimension. Similar to the other coefficients, the result is not statistically significant and therefore a connection between the governance score and the takeover premium cannot be established. Governance data has a longer history of data collection and interest than the two other dimensions which contributes to higher quality research. There is also already substantial research suggesting a strong governance performance yield superior financial return (Kim & Li, 2021; Aggarwal, 2013). According to Kim & Li (2021), governance had the strongest impact on corporate profitability out of the three dimensions. Similar results are found by Aggarwal (2013) who found that corporate governance has a positive and significant effect on financial performance. My expectations for the coefficient if it was significant is that it would be positive as strong corporate governance signifies transparency, processes for timely disclosure, and procedures for conflict resolution. I would believe this dimension to be especially important for cross-border acquisitions as it raises investor confidence in the target company.

9.2 High and Low ESG Groups

In this part, I will look deeper into which group of acquirers would be willing to pay a higher premium for a strong ESG performing target. By dividing the targets into high and low-performing groups where the above-median performers for each respective group are in the

high group and the below-median performers are in the low group. The results can be found in Table 4 with t-stats in the parentheses.

The first regression in column one shows a positive coefficient for low-performing acquirers' willingness to pay for a target with an above-median ESG performance. The coefficient is not significant and therefore, a relationship between the target ESG group and takeover premium cannot be established. If the coefficient was positive, it could be because low-performing companies were either greenwashing their companies through acquisitions, or for acquiring resources and capabilities in order to improve their ESG performance.

The second regression in column two shows a strong negative coefficient for the high-performing group which would signify that this group of acquirers are in fact willing to pay less for companies with above-median ESG scores. This could be because the gains in terms of ESG scores are not enough to result in a higher takeover premium. However, as these results are not significant, a relationship between acquirer & target ESG performance in the high-performing group of acquirers cannot be established.

To my knowledge, no other study has attempted to identify the willingness of acquirers to pay a higher ESG premium based on acquirers' ESG performance.

Table 4 Effects of target and acquirer ESG Groups (High/Low) on Takeover Premium

	Low Acquirer ESG	High Acquirer ESG
	(1)	(2)
Target ESG	0.9530	-0.6838
Group	(1.233)	(-1.919)
EBITDA Margin	-7.1349	0.0091
	(-1.617)	(0.007)
Valuation	-0.0040	0.0092*
	(-1.582)	(2.617)
D/E Ratio	1.8935	0.1119
	(1.751)	(0.623)
Growth	0.04490	0.0080
	(1.559)	(0.844)
Crossborder	0.7809	-0.1983
	(1.580)	(-0.470)
Toehold	1.0914	NA
	(1.503)	(NA)
Constant	2.6591	3.2747***
	(3.809)	(7.734)
Observations	14	13
R^2	0.866	0.6276
Adjusted R^2	0.3968	0.2551
Note:	*This table presents the estimations of the effects of acquirer ESG group and target ESG group on the takeover premium.*	
	*$p<0.1$; **$p<0.05$; ***$p<0.01$*	

9.3 Country-Specific Effects

This part will use a two-stage least squares regression to ensure that no country-specific effects are affecting the results. Each country is provided a dummy value as shown in Table 5.

ESG scores take into consideration the country of the company when calculating the ESG scores along each dimension. Therefore, companies in certain countries can achieve a higher ESG score as their relative performance in the country is high, while compared to the other companies in the sample they would be considered low. Therefore, to correct for this I apply the logic of Ioannou & Serafeim (2012) who found that country-specific effects can affect a company's corporate social performance. The results from the regression can be found in Table 5.

Table 5 Two-stage least squares regression with country as IV

	Dependent Variable:
	Log(Takeover Premium)
Log(Target ESG)	9.6616
	(0.202)
EBITDA Margin	- 3.3392
	(-0.176)
Valuation	-0.0046
	(-0.148)
D/E Ratio	-1.0908
	(-0.203)
Growth	0.0041
	(0.132)
Cross-border	-0.8352
	(-0.254)
Toehold	-0.4975
	(-0.139)
Constant	-31.3904
	(-0.183)
Country-specific effects	Yes
Observations	43
R^2	-14.12
Adjusted R^2	-18.04

The two-stage least squares analysis yields a negative coefficient for log(Target ESG Score) that is significantly different from the regular OLS regression. However, this result is not significant, and we, therefore, cannot reject the null hypothesis that the coefficient is not different from 0. Furthermore, the model has a negative adjusted R-squared which shows that the data does not fit with the model. As the sample size is small the model results only have 28 degrees of freedom which results in imprecise estimates and low statistical power. Therefore, this model is inaccurate to identify any country-specific effects on the sample data used in this thesis. The results should be interpreted with caution.

9.4 Implication of the Findings

The effect of a company's ESG performance is a growing field of research and some previous studies have found a link between ESG scores and financial performance, growth, and risk exposure. While previous studies have been based on limited datasets and failed to mitigate investor biases in the sample, this effect should become clearer as stronger supranational regulation and standardized practices are put into place. This thesis has attempted to identify the value created by ESG scores through the willingness of acquirers to pay for ESG scores in M&A transactions. In the samples used for this thesis, there have not been any significant relationships between ESG scores and each ESG dimension on the takeover premium. This would mean that acquirers are not concerned with ESG scores when conducting their due diligence on target companies. There could be numerous reasons for these results. First, as ESG scores are highly different between rating agencies, acquirers could be discouraged to incorporate them in the due diligence process as this could impact the valuation process of the target company in unknown ways. Secondly, as the field is still emerging, having employees with knowledge of assessing the value of ESG scores might be rare and not part of the priority of acquiring companies. As previous due diligence procedures have been good enough in the past, there might not be enough will to change these procedures for the future.

Another explanation for the findings could lie in the sample itself. As many of the target and acquiring companies in the M&A transactions data lacked ESG scores and information about the other control variables, many transactions could not be included in the analysis. This will be discussed further in part 8.5 on the limitations of the findings.

9.5 Limitations of Findings and Future Research

In this section, I present the limitations and challenges of this paper. The biggest limitation for this study is related to data availability, data quality, and sample sizes. As pointed out by Doyle (2018), company coverage is based on a demand basis, which could explain why many of the target and acquiring companies in the M&A dataset were not covered with an ESG score. Therefore, once ESG scores were applied, the sample size went from 828 to the largest sample consisting of 219 and the smallest one of 27. This creates a challenge in establishing any causality between the factors analysed in this thesis. The results of these estimations must be interpreted with caution.

The field of ESG and value creation is an interesting and important field to look deeper into as climate change and social activism is becoming increasingly important topics. Future research should incorporate a larger sample size and higher quality data in order to mitigate insignificant regression results. It could also look further into the importance of each ESG dimension for each industry to understand how each dimension affects premiums on an industry-specific level.

10. Conclusion

This thesis attempts to identify the value of ESG scores through the takeover premiums in M&A transactions. This study has been conducted on M&A transactions over 13 years and hypothesized that there would be a relationship between the takeover premium paid by acquirers and the ESG score of the targets. After running regressions on the dataset, there has not been established a relationship between ESG scores, environmental, social, and governance dimensions, and takeover premiums. The second hypothesis of this thesis was that top-performing ESG acquirers would be willing to pay more for a top-performing target than their low-performing counterparts. The analysis from the dataset shows no such relationship. Top-performing acquirers were not found to be willing to pay a higher premium than low-performing acquirers for a top-performing target company. It is important to keep in mind that ESG scores and responsible investments are still at an early stage and that this thesis is based on a limited number of observations. In order to gain a better understanding of value creation from ESG, further research is required with a stronger dataset.

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12. Appendix

12.1 Variables

All prices are in USD. The takeover premium is calculated with the following formula:

$$TP_t = \frac{P_t - P_{t-4}}{P_{t-4}} * 100$$

Where:

TP_t = Takeover premium at announcement date, t

P_t = Price at announcement date, t

P_{t-4} = Price at 4 weeks prior to the announcement date

EBITDA margin is the company's operating profits calculated as a percentage of the total revenue from business activities. I apply the following formula:

$$EBITDA\ Margin = \frac{EBITDA}{Total\ Revenue} * 100$$

Where:

EBITDA = Earnings before interest, taxes, depreciation, and amortization

Total Revenue = Total revenues of the company

Toehold is a dummy variable where the acquirer can have a minor stake in the target prior to the takeover. In this thesis, a Toehold is when the acquirer gains less than 5% of the target company prior to the acquisition. This value is 1 if the acquirer has ownership of less than 5% prior to the announcement of the takeover and 0 equals if there is more than 5% or no ownership.

Cross-Border is a dummy variable where the value is 1 if the acquirer's host country is different from the target host country and 0 if they are in the same country.

Valuation is represented by the target's equity value in the market at the previous year's end divided by the EBITDA from the same period.

$$Valuation = \frac{EV}{EBITDA}$$

Where:

EV = Enterprise Value is the sum of equity and debt in the company

EBITDA = Earnings before interest, taxes, depreciation, and amortization

The D/E ratio is the total debt to total equity ratio of the company. This includes minority interest and hybrid debt and is calculated through the following formula:

$$\frac{D}{E} Ratio = \frac{Total\ Debt}{Total\ Equity} * 100$$

Where:

Total Debt = Company total debt including minority interest and hybrid debt

Total Equity = Value of total shareholders' equity

Liquidity of the target is measured through dividing the current assets with the current liabilities.

$$Liquidity = \frac{Total\ Assets}{Total\ Liabilities}$$

Growth rate is calculated as the Target EBITDA 3-Year Growth, in percentage terms over the preceding 3-year period.

12.2 Summary of datasets

12.2.1 Sample 1 – Acquirer ESG Data

Table 6 Summary of deals and Cross-Border deals per year

Year	# Deals	% Deals	# Cross-Border	% Cross-Border
2006	20	9%	3	6%
2007	25	11%	5	10%
2008	14	6%	3	6%
2009	19	9%	4	8%
2010	15	7%	4	8%
2011	17	8%	3	6%
2012	9	4%	3	6%
2013	17	8%	3	6%
2014	14	6%	3	6%
2015	11	5%	0	0%
2016	14	6%	2	4%
2017	8	4%	3	6%
2018	15	7%	6	13%
2019	15	7%	4	8%
2020	6	3%	2	4%
Total	219	100%	48	100%

This table shows the sample distribution between deals by year of announcement. # Deals shows the number of deals per year and # Cross-Border shows the number of Cross-Border deals per year.

This sample has an even distribution of deals over the years that the sample consists of where the highest number of deals were in 2007. This represents 11% of the total number of deals in the sample. Furthermore, the number of cross-border transactions represents only 21.9% of the total sample meaning that most of the transactions in the sample are domestic takeovers.

Table 7 Summary of acquirers and targets within each industry

Industry	Acquirer	Proportion	Target	Proportion
Consumer Products and Services	9	4%	7	3%
Consumer Staples	23	11%	22	10%
Energy and Power	34	16%	28	13%
Healthcare	5	2%	8	4%
High Technology	25	11%	34	16%
Industrials	42	19%	34	16%
Materials	34	16%	35	16%
Media and Entertainment	9	4%	11	5%
Real Estate	11	5%	12	5%
Retail	22	10%	22	10%
Telecommunications	5	2%	6	3%
Total	219	100%	219	100%

This table shows the distribution of target and acquirer industries within the sample.

The sample has an even distribution among the industries with some outliers such as telecommunications and healthcare. They only represent 2% of the sample each on the acquirer side and 3% and 4% respectively for the target side. Most of the acquisitions are happening within the same industries in this sample.

Table 8 Summary of home countries of acquirers and targets

Country	Acquirer	Proportion	Target	Proportion
Australia	9	4%	16	7%
Austria	1	0%	1	0%
Bermuda	3	1%	1	0%
Brazil	1	0%	2	1%
Chile	0	0%	1	0%
Canada	13	6%	12	5%
China (Mainland)	6	3%	4	2%
Cyprus	0	0%	1	0%
Finland	1	0%	0	0%
France	8	4%	9	4%
Germany	5	2%	2	1%
Greece	1	0%	1	0%
Hong Kong	4	2%	5	2%
India	7	3%	8	4%
Israel	2	1%	1	0%
Italy	1	0%	0	0%
Japan	89	41%	84	38%
Luxembourg	2	1%	0	0%
Malaysia	3	1%	4	2%

Netherlands	0	0%	2	1%
Norway	5	2%	4	2%
Pakistan	0	0%	1	0%
Philippines	1	0%	1	0%
Poland	0	0%	1	0%
South Africa	0	0%	1	0%
South Korea	7	3%	7	3%
Spain	2	1%	1	0%
Sweden	1	0%	0	0%
Switzerland	4	2%	4	2%
Taiwan	10	5%	9	4%
Thailand	4	2%	3	1%
Turkey	1	0%	1	0%
United Kingdom	7	3%	9	4%
United States	20	9%	21	10%
Vietnam	1	0%	2	1%
Total	219	100%	219	100%

This table displays the distribution of home countries between target and acquirers within the sample.

The sample has an overweight of transactions in Japan representing 41% of the acquirers and 38% of the targets. Most of these transactions are domestic which contributes to explaining the overweight of domestic takeovers in the sample.

Table 9 Summary statistics of the overall sample

Industry	Mean ESG Score	Mean Premium	Mean Valuation	Mean Growth	Mean EBITDA
Consumer Products and Services	45.8	38.9	13.5	5.1	0.1
Consumer Staples	57.1	36.4	19.0	7.9	0.1
Energy and Power	52.1	26.4	19.3	2.1	0.3
Healthcare	59.1	18.1	18.7	8.8	0.2
High Technology	60.2	25.4	10.4	9.4	0.1
Industrials	64.3	25.0	21.8	16.7	0.1
Materials	57.3	26.4	28.3	1.2	0.2
Media and Entertainment	53.9	21.9	276.6	6.9	0.2
Real Estate	57.7	13.4	37.3	25.3	0.2
Retail	63.0	37.8	45.6	4.6	0.1
Telecommunications	57.6	23.7	11.5	13.0	0.3
Total	58.2	27.6	33.8	8.3	0.2

This table breaks down the average values for ESG scores for acquirers within their respective industries. The mean values for valuation, premium, growth and EBITDA are for the target companies.

The ESG scores across industries are all around the mean value for the total sample with the highest scores being in the industrials industry while the lowest values are in the consumer products and services industry. The largest extreme value within the valuation metric is in the media and entertainment industry.

Figure 1 The linear relationship between the Acquirer ESG Score and the takeover premium
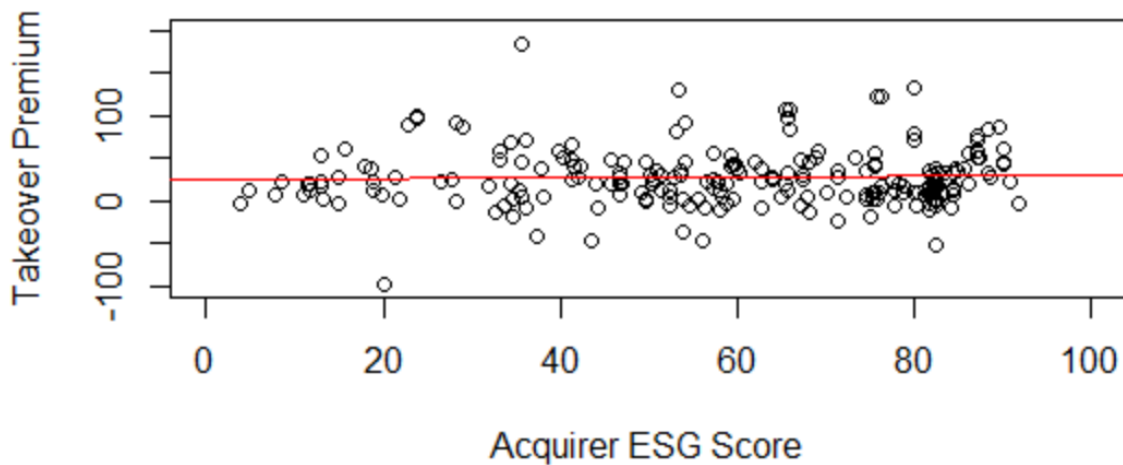

Figure 1 shows the linear relationship between the acquirer's ESG score and the takeover premium paid for the target in the transaction. The red line is a single linear regression on the two variables showing a positive relationship between the two variables in the sample.

12.2.2 Sample 2 – Target ESG Data

Table 10 Summary of deals and Cross-Border deals per year

Year	# Deals	% Deals	# Cross-Border	% Cross-Border
2006	1	2%	0	0%
2007	3	7%	2	15%
2008	3	7%	1	8%
2009	3	7%	1	8%
2010	1	2%	0	0%
2011	3	7%	0	0%
2012	2	5%	0	0%
2013	5	12%	2	15%
2014	2	5%	1	8%
2015	6	14%	1	8%
2016	4	9%	1	8%
2017	4	9%	2	15%
2018	2	5%	1	8%
2019	2	5%	1	8%
2020	2	5%	0	0%
Total	43	100%	13	100%

This table shows the sample distribution between deals by year of announcement. # Deals shows the number of deals per year and # Cross-Border shows the number of Cross-Border deals per year.

This sample has an even distribution of deals over the years that the sample consists of where the highest number of deals were in 2015 and represents 14% of the total number of deals in the sample. The number of Cross-Border transactions represents 30.2% of the total sample meaning that most of the transactions in the sample are domestic takeovers.

Table 11 Summary of acquirers and targets within each industry

Industry	Acquirer	Proportion	Target	Proportion
Consumer Products and Services	2	5%	3	7%
Consumer Staples	7	16%	7	16%
Energy and Power	6	14%	3	7%
Healthcare	1	2%	2	5%
High Technology	7	16%	1	2%
Industrials	6	14%	4	9%
Materials	2	5%	9	21%
Media and Entertainment	0	0%	2	5%
Real Estate	4	9%	3	7%
Retail	3	7%	4	9%
Telecommunications	5	12%	5	12%
Total	43	100%	43	100%

This table shows the distribution of target and acquirer industries within the sample.

The sample has an even distribution among the industries with Consumer Staples and High Technology being the most active acquirers. An interesting observation is that Materials companies are popular targets but not active acquirers within this sample.

Table 12 Summary of home countries of acquirers and targets

Country	Acquirer	Proportion	Target	Proportion
Australia	4	9%	5	12%
Brazil	1	2%	1	2%
Canada	2	5%	2	5%
China (Mainland)	5	12%	5	12%
Colombia	0	0%	1	2%
Cyprus	1	2%	0	0%
France	2	5%	1	2%
Hong Kong	5	12%	6	14%
India	2	5%	3	7%
Indonesia	0	0%	1	2%
Japan	2	5%	2	5%
Jersey	1	2%	0	0%
Luxembourg	1	2%	0	0%
Netherlands	1	2%	0	0%
New Zealand	1	2%	1	2%
Norway	1	2%	1	2%
Poland	1	2%	1	2%
Qatar	1	2%	0	0%
Singapore	1	2%	0	0%
Spain	1	2%	2	5%
Sweden	0	0%	1	2%
Switzerland	1	2%	2	5%
Thailand	2	5%	2	5%
United Kingdom	2	5%	1	2%
United States	5	12%	5	12%
Total	43	100%	43	100%

This table displays the distribution of home countries between target and acquirers within the sample.

This sample has an even distribution among the countries represented in the sample and as the majority of transactions are domestic takeovers we can observe Australia, China, Hong Kong, and the United States as the most active acquirer and target nations.

Table 13 Summary statistics of the overall sample

Industry	Mean ESG Score	Mean Premium	Mean Valuation	Mean Growth	Mean EBITDA
Consumer Products and Services	53.0	24.0	32.9	34.1	0.1
Consumer Staples	37.3	48.2	61.0	18.9	0.2
Energy and Power	50.8	25.7	9.6	15.3	0.3
Healthcare	38.4	30.8	18.4	2.8	0.3
High Technology	27.4	38.1	10.0	15.1	0.2
Industrials	34.8	14.5	14.0	-3.9	0.1
Materials	43.2	56.4	11.5	19.8	0.2
Media and Entertainment	51.3	11.3	10.3	12.0	0.2
Real Estate	62.9	38.7	21.9	24.3	0.4
Retail	66.6	26.6	179.0	21.8	0.1
Telecommunications	44.1	9.1	7.3	5.1	0.4
Total	46.1	33.6	37.2	15.7	0.2

This table breaks down the average values for ESG scores for targets within their respective industries. The mean values for valuation, premium, growth and EBITDA are for the target companies.

This sample has a few more outliers than the previous sample as can be observed in the average premium within industries. Telecommunications has a third mean premium value compared to the average for the total sample while Materials has almost twice as high mean premium value. Telecommunications also has the lowest mean valuation in the sample. The mean ESG scores for the sample are evenly distributed among the industries with High Technology having the lowest mean value while the Retail industry has the highest.
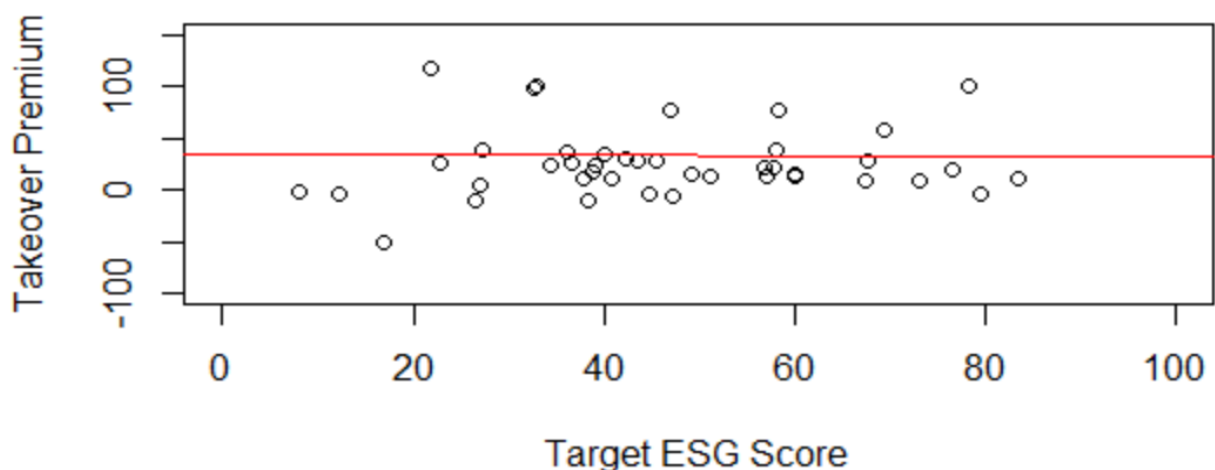
Figure 2 The linear relationship between the Target ESG Score and the takeover premium

Figure 2 shows the linear relationship between the target's ESG score and the takeover premium paid for the target in the transaction. The red line is a single linear regression on the two variables showing a slightly negative relationship between the two variables in the sample.

12.2.3 Sample 3 – Target and Acquirer ESG Data

Table 14 Summary of deals and Cross-Border deals per year

Year	# Deals	% Deals	# Cross-Border	% Cross-Border
2007	2	7%	1	10%
2008	2	7%	0	0%
2009	2	7%	0	0%
2010	2	7%	0	0%
2011	1	4%	0	0%
2012	1	4%	0	0%
2013	2	7%	1	10%
2014	3	11%	1	10%
2015	2	7%	0	0%
2016	2	7%	1	10%
2017	2	7%	2	20%
2018	4	15%	2	20%
2019	1	4%	1	10%
2020	1	4%	1	10%
Total	27	100%	10	100%

This table shows the sample distribution between deals by year of announcement. # Deals shows the number of deals per year and # Cross-Border shows the number of Cross-Border deals per year.

This sample has an even distribution of deals over the years that the sample consists of where the highest number of deals were in 2018 and represents 15% of the total number of deals in the sample. The number of Cross-Border transactions represents 37% of the total sample meaning that most of the transactions in the sample are domestic takeovers.

Table 15 Summary of acquirers and targets within each industry

Industry	Acquirer	Proportion	Target	Proportion
Consumer Products and Services	1	4%	1	4%
Consumer Staples	6	22%	4	15%
Energy and Power	4	15%	3	11%
Healthcare	1	4%	2	7%
High Technology	1	4%	3	11%
Industrials	3	11%	2	7%
Materials	4	15%	7	26%
Real Estate	1	4%	0	0%
Retail	4	15%	4	15%
Telecommunications	2	7%	1	4%
Total	27	100%	27	100%

This table shows the distribution of target and acquirer industries within the sample.

The sample has an even distribution among the industries with Consumer Staples companies being the most active acquirers. Similar to Sample 2, in this sample, companies in the Materials industry are the most popular targets.

Table 16 Summary of home countries of acquirers and targets

Country	Acquirer	Proportion	Target	Proportion
Australia	2	7%	3	11%
Canada	4	15%	5	19%
China (Mainland)	2	7%	1	4%
Finland	1	4%	0	0%
France	1	4%	0	0%
Germany	0	0%	1	4%
Hong Kong	2	7%	3	11%
India	1	4%	2	7%
Israel	1	4%	0	0%
Japan	2	7%	2	7%
Luxembourg	1	4%	0	0%
Norway	1	4%	1	4%
Switzerland	1	4%	2	7%
Thailand	2	7%	2	7%
United Kingdom	2	7%	1	4%
United States	4	15%	4	15%
Total	27	100%	27	100%

This table displays the distribution of home countries between target and acquirers within the sample.

This sample has an even distribution among the countries represented in the sample and as the majority of transactions are domestic takeovers, we can observe Canada and the United States as the most active acquirer and target nations.

Table 17 Summary of the overall sample

Industry	Mean ESG Score Acquirer	Target	Mean Premium	Mean Valuation	Mean Growth	Mean EBITDA
Consumer Products and Services	88.6	67.7	27.4	29.9	24.9	0.2
Consumer Staples	74.4	41.1	22.2	25.2	25.4	0.3
Energy and Power	43.7	37.0	7.2	9.0	0.0	0.2
Healthcare	76.2	38.4	30.8	18.4	2.8	0.3
High Technology	41.1	35.8	33.2	11.6	5.0	0.1
Industrials	44.7	46.7	24.9	17.0	-5.8	0.1
Materials	67.6	46.3	35.5	49.7	-5.2	0.2
Retail	76.9	55.0	29.4	184.5	9.2	0.1
Telecommunications	77.9	51.2	13.2	4.8	-1.6	0.5
Total	64.5	45.0	27.0	50.2	5.0	0.2

This table breaks down the average values for ESG scores for both acquirers and talents within their respective industries. The mean values for valuation, premium, growth and EBITDA are for the target companies.

This sample has fewer outliers than the previous sample. Companies within the retail industries have the highest valuations with a mean valuation almost 4 times higher than the sample average. Another interesting observation is that the acquirers generally have a higher ESG score than the target companies.

Figure 3 The linear relationship between the Target ESG Score and the takeover premium
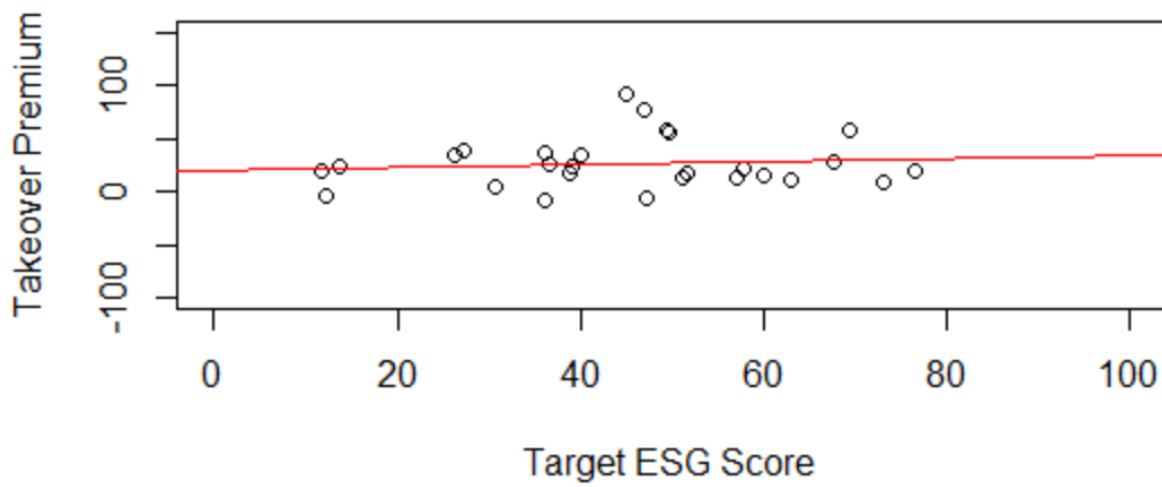

Figure 3 shows the linear relationship between the acquirer's ESG score and the takeover premium paid for the target in the transaction. The red line is a single linear regression on the two variables showing a positive relationship between the two variables in the sample.