



Does it Pay to Be Responsible? The Relationship between CSR Performance and Private Equity Takeover Premiums

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Abstract

This study researches the relationship between corporate socially responsibility (CSR) performance and takeover premiums in a private equity (PE) context. Target CSR performance is measured by its Environmental, Social, and Governance (ESG) score; this ESG score is derived by a certified rating agency. This paper uses an international matched sample of PE deals, constructed by using propensity score matching, to test the relationship between target CSR performance and takeover premiums. The relationship is examined through the scope of the stakeholder maximization theory, the resource-based view, and the signaling theory by using OLS and fixed-effect regressions. The findings show that, consistent with the signalling theory, target CSR performance *disclosure* has a positive effect on the takeover premium. Additionally, the *level* of CSR performance also positively influences the premium, which confirms the stakeholder theory and the resource-based view. The results hold when looking at cross-border deals. Overall, the results show that PE investors positively value target CSR performance and this is reflected in higher takeover premiums.

Key words: Private Equity, Bid Premium, Takeover Premium, CSR, ESG

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1. Introduction

Since its emergence in the 1990s, Socially Responsible Investment (SRI), an investment strategy that considers the impact on society and the environment, and ethical aspects in the investment decision-making process, has experienced tremendous growth (Renneboog et al., 2008). According to the U.S. SIF's biennial report on Sustainable and Impact Investing Trends (2020), there were \$17.1 trillion sustainable investing assets under professional management in the U.S. at the beginning of 2020, which is an increase of 25-fold compared to the \$0.6 trillion sustainable investing assets under professional management in 1995. This trend towards investing in firms engaged in corporate social responsibility (CSR) indicates that investors do not only have financial motives but are also concerned with the impact firms make on the environment they operate in. This is supported by three economic theories, the stakeholder theory, the resource-based view, and the signaling theory. The *stakeholder theory* predicts that CSR can create value by reducing conflicts between stakeholders (Freeman, 1984). Moreover, the *resource-based view* states that CSR could be incorporated as a strategic asset and be a source of sustainable competitive advantage (Wernerfelt, 1984). When looking at target CSR disclosure, the *signaling theory* argues that CSR can signal quality and performance and therefore increase the valuation of a firm (Choi et al., 2015). Consequently, the effect of SRI and CSR on financial performance has received increased attention from the academic community. While the findings of the relationship between CSR activities and accounting-based financial performance remain ambiguous (Reveli and Viviani, 2015; Velte, 2017), research done on CSR's effect on performance through the lens of mergers and acquisitions (M&A) provides more positive results. These results are especially interesting as M&A bidders perform extensive analysis of potential acquisition targets to reduce information asymmetry (Laamanen, 2007) and obtain information that is inaccessible to the public. Hence, it is argued that these bidders have a more thorough understanding of the value of the target than the market (Gomes and Marsat, 2018). Aktas et al. (2010) studied the relation between target CSR performance and deal announcement returns. They found that deals wherein a target with a high level of CSR performance is involved yield higher abnormal returns. Where Aktas et al. (2010) studied the effect of target CSR on announcement returns, Gomes and Marsat (2018) researched the effects on acquisition premiums. They found a positive relationship between the level of target CSR performance and the acquisition premium, indicating that investors value CSR performance and are willing to pay for it. Similarly, Cho et al. (2020) examined the difference between target CSR performance and acquirer CSR performance on target

shareholder value and found that superior target CSR performance is rewarded and results in higher takeover premiums. In a cross-border context, Qiao and Wu (2019) researched the influence of target CSR on international deals and found higher premiums for socially responsible targets.

The relationship between CSR performance and firm valuation is mainly studied by the value as perceived by the public market. However, the potential impact of CSR on firm valuation in a private equity (PE) context has received less attention (Scholtens, 2006; Cumming and Johan, 2007). In general, it is found that PE firms tend to pay less for target firms than public buyers such as corporates (Bargeron et al., 2008; Renneboog, Simons and Wright, 2007). The main reason for this is that the premiums capture expected gains from synergies, which are higher for corporate buyers (Aktas et al., 2011; Bargeron et al., 2008). Therefore, researching the effect of CSR on acquisition premiums in a PE context is particularly interesting. However, to date only Crifo et al. (2015) have researched the impact of CSR performance on the acquisition premiums in PE. In a field experiment amongst professional PE investors, in which they competed in closed auctions to acquire fictive firms, they find that higher target Environmental, Social, and Governance (ESG) performance is associated with higher acquisition premiums. Specifically, they find that sustainable environmental, social and governance practices increase the firm valuation by 5.0%, 5.5%, and 2.0%, respectively. To contribute to this finding in an empirical context, this study further explores the impact of how target firm CSR affects the acquisition premium in PE. Subsequently, the research question of this study is as follows: *Does target CSR performance positively influence PE acquisition premiums?*

This study contributes to the existing literature because it examines a relatively new field of SRI that has been overlooked by academic literature. Where previous studies only looked at CSR's effect on public M&A deals, this paper is the second to examine this effect in a private context. Instead of examining the impact of CSR performance on firm performance as perceived by announcement returns (Aktas et al., 2010; Cho et al. 2020; Deng et al., 2013), this study looks at whether CSR performance is value-enhancing by looking at the value assigned to firms by PE bidders as reflected by the bid premium. An advantage of this measure is that it captures the difference between the perceived firm value of the market and the perceived value of the acquirer. Therefore, it is an indication of the acquirer's willingness to pay more than the market value (Simonyan, 2014). This makes it possible to assess if the surplus paid by the acquirer is associated with CSR performance. Furthermore, this study analyzes CSR performance as measured by the ThomsonOne ASSET4 database, which

constructs an ESG score based on an international sample of firms and 400 different CSR categories. Because of this, the scope of the study can go beyond the U.S. focus of alternative databases. Therefore, this paper looks at a global sample and also tests the effect of target CSR performance on cross-border deal premiums. The sample is a matched sample, constructed by using propensity score matching, to reduce potential selection bias.

To examine the research question and test the predictions of the different hypotheses resulting therefrom, this study performs ordinary least squares (OLS) regressions. The analyses are further extended by including year and industry fixed effects into the regression models. The findings of this study provide evidence that there is a significant positive impact of target CSR *disclosure* on the takeover premium. This effect holds for domestic deals as well as for international deals because the disclosure can function as a signal of the overall quality of the firm and can reduce information asymmetries that arise in acquisitions. This is especially important in cross-border acquisitions when information asymmetries are higher. Furthermore, the effect of target CSR *performance* is analyzed in a sub-sample of target companies that all have disclosed CSR scores, and it is found to have a significant positive effect on the acquisition premium paid by PE firms, both in national and international deals. This positive relationship supports the stakeholder maximization view, meaning that PE investors value CSR performance because it can create value. Moreover, this finding is in line with the resource-based view because it provides evidence that CSR is a valuable strategic asset. Lastly, this paper does not find support for the impact of CSR performance on the time it takes to complete a deal and even suggests an opposite relationship of the hypothesized prediction.

This paper proceeds as follows. The following section presents a review of the academic literature on CSR, the PE performance strategies, and the economic theories that explain the relationship between CSR and PE. In the second section, the hypotheses are formed based on the literature review. The third section describes the methodology and the data used to test the hypotheses. The fourth section reports the empirical results. Lastly, section five discusses the results and considers the limitations of this study. Moreover, it provides suggestions for future research. To prevent confusion about the use of the terms ESG and CSR, as ESG is a measure of CSR this study uses the terms interchangeably.

2. Literature Review and Hypothesis Development

During the last decades, the impact on the climate and society has become an important factor in firms' long-term strategies (Qiao and Wu, 2019). Although social responsibility has drawn the attention of many, only a few studies have tried to clarify the direct effect of target CSR engagement on PE takeover premiums. In the next section, an overview of CSR and PE literature is provided, including a review of the influence of CSR in the PE context.

2.1 Corporate Social Responsibility – Environmental, Social, Governance

The terminology CSR originated in 1953 when Bowen (1953) wrote the landmark book *Social Responsibilities of the Businessman*. He first described CSR as a manner in which firms can create welfare for a wide range of stakeholders, besides the company and its shareholders, while achieving their goals of social equity and economic welfare. Ever since, there has been an ongoing debate about the definitions, concepts, and approaches of CSR (Garriga and Mele, 2004). CSR has become a multi-dimensional term and, because of its versatility, Van Marrewijk (2003) performed a thorough analysis of all different concepts and definitions. He concludes that there is no *'one solution fits all'* definition for CSR, and various definitions should be accepted, depending on the different developments and ambitions of firms. In general, firms engaging in CSR are pursuing sustainable economic development by considering environmental protection, social impact, and corporate governance in their corporate decision-making (Aguilera et al., 2018; Branco and Rodrigues, 2006).

Due to the increased attention to CSR and all the stakeholders involved in corporate activities, the need for a well-defined measure arose. At the beginning of the 1980s, the term ESG originated, which stands for *Environmental, Social, and Governance* (Eccles & Viviers, 2011). The ESG measure intends to express additional aspects of corporate performance that go beyond accounting data. Recent literature finds that firms are facing growing pressure from various stakeholders such as consumers, employees, NGOs, and investors to reduce their negative impact on society and to implement CSR measures (Ambec and Lanouie 2008; Crilly et al., 2012). In line with this, the ESG measure has evolved into a frequently used criterion for investors. Nowadays, private equity investors integrate ESG factors such as sustainability into their fundamental decision-making analyses (Schoenmaker and Schramade, 2019; Schramade, 2016). Accordingly, more and more firms are disclosing their financial and operational performance with respect to ESG measures and are incorporating ESG into their business

operations (Kotsantonis et al., 2015). In 1996 only 300 firms globally disclosed CSR reports, and by 2014 this already increased to over 7000 firms (Khan et al., 2016). Although many firms have adopted the guidelines from the Global Reporting Initiative and the International Integrated Reporting Council, the extent and the quality to which firms disclose ESG performance remains disparate (Ioannou and Serafeim, 2016).

In this study, the CSR is measured as the ESG score calculated by the ThomsonOne ASSET4 database. The ASSET4 database is a comprehensive database that covers the five main CSR dimensions, social, economic, environmental, voluntariness, and stakeholder, as defined by Dahlsrud (2008). This will be explained more thoroughly in the methodology section.

2.2 Private Equity

In the 1980s, the first LBO wave emerged, which was the start of the PE industry. By the beginning of the twenty-first century, these buyouts accounted for about 25 percent of all global M&A activity (Metrick and Yasuda, 2010). In an LBO, an investment firm acquires a company using a great amount of debt financing and a relatively small portion of equity (Kaplan and Strömberg, 2009). Typically, such an investment firm is a PE fund. PE funds are managed by *general partners*, and the capital they manage is provided by *limited partners* such as institutional investors (public and corporate pension funds, insurance companies) and wealthy private investors (Cumming and Johan, 2007). The fund generally has a limited lifetime of up to ten years. Because of this characteristic, the fund's life is commonly separated into an *investment period* and a *harvesting period*. The first five years serve to invest the committed capital into companies – the investment period, and the other five years are used to divest and generate returns for the investors – the harvesting period (Fang, 2019).

Although the investments in PE funds are largely increasing, and the academic literature is growing, the historical performance is still questionable due to the fact that PE is not required to publicly disclose performance data (Harris et al., 2014). Most studies focus on trends in the industry or on the relationship between fund managers and entrepreneurs (Kaplan and Schoar, 2005). However, studies based on share price and accounting data found strong evidence that buyouts enhance financial performance (Cumming et al., 2007). More recently, Groh and Gottschalg (2006) found positive financial performance of buyouts compared to an equally risky S&P 500 portfolio. Consistently, international researches likewise indicate PE

firms can generate higher returns and enhance firm performance (Wilson et al., 2012; Scellato et al., 2013).

In line with this, Harris et al. (2014) found that buyout funds consistently outperformed the public market by more than 20 percent. Cumming and Walz (2010) showed positive buyout returns when analyzing U.K.- and U.S.-based buyouts and found higher returns in the U.S. Reasons for this are differences in regulation, market size, and transaction-specific factors. In particular, they found that the structure of the investment enhances returns. Moreover, fund characteristics play an important role in generating positive returns. This is supported by Kaplan and Schoar (2005), who found that well-established PE funds are able to achieve higher returns. On the contrary, Phalippou and Gottschalg (2009) argue that previous studies are biased towards better performing funds and that those funds overstate accounting values. They controlled for these two factors and found that, in contrast to previous findings, mature funds actually underperform. Apart from these contrasting views on PE fund performance, it is argued that returns are decreasing over time because of the increased inflows of capital into the PE industry that lead to high levels of unused capital, also known as *dry powder* (Braun and Stoff, 2016).

2.2.1 Value Creation Strategies

PE firms make three important adjustments after they have invested in a company, also known as *financial, governance, and operational engineering* (Gompers et al., 2016; Kaplan and Strömberg, 2009). Throughout different LBO *waves*, PE firms have been able to create value and generate positive returns in different ways, including through the three aforementioned engineering adjustments. In the first wave in the 1980s, PE firms created value primarily through *financial engineering*. *Financial engineering* is driven by acquiring majority stakes in mature businesses with high levels of debt to motivate the firm's managers and incentivize them to reduce costs. This concept is pioneered by Jensen (1989), who, in a seminal piece on PE, argues that LBOs create value through high leverage. In his view, public firms often have entrenched managers that are susceptible to overinvestment and unnecessary use of the cash flow; high leverage reduces this '*free cash flow problem*.' Furthermore, managers are incentivized as they often obtain an equity stake in the company; this aligns their interests with those of the PE firm (Jensen, 1986). An increase in the equity stake of the management team enhances the operating performance of a company after the buyout (Kaplan and Strömberg, 2009; Nikoselainen and Wright, 2007; Achleitner et al., 2011).

The second wave occurred in the 1990s; in this wave, the focus was on value creation through *governance engineering*. *Governance engineering* focuses on the close monitoring of the boards and the active manner in which the PE firms are involved in the governance of their portfolio companies (Holmstrom and Tirole, 1997). On top of that, to incentivize high performance, PE funds often replace management if they underperform (Acharya and Kehoe, 2008). At the beginning of the 21st century, the third wave emerged as large financial institutions arose as value-adding acquirers. Therefore, the PE industry had to respond to increased competition from both financial and strategic buyers. Accordingly, PE firms expanded to other industries and started hiring industry experts to select attractive investments and to develop new value creation plans (Kaplan and Strömberg, 2009). This gave rise to *operational engineering*, which refers to PE firms increasing operating efficiencies by applying operating and industry expertise to (portfolio) companies. This is supported by Kaplan (1989) and Smith (1990), who both found that by significantly enhancing the operating performance of portfolio companies, LBOs create value. Moreover, Cressy et al. (2007) found that post-buyout operating profits of firms acquired by PE firms with industry and phase specialization are greater than similar non-buyout firms. This is further supported by Acharya et al. (2013), who find that positive abnormal performance of PE deals is mainly driven by ex-consultants and industry managers who outperform deals by focusing on internal value-creation.

As the size of the PE market is growing, competition is still becoming tougher, and finding new ways to create value is essential in achieving returns (Braun et al., 2017b). Accordingly, it is stated that the PE industry is currently experiencing its fourth wave, which is in the direction of SRI (Indahl and Jacobsen, 2019; Zaccone and Pedrini, 2020).

2.2.2 Bid Premium

Acquirers need to assess two key conflicting factors when deciding on their offer price (Haleblian et al., 2009). On the one hand, acquirers wish to pay as little as possible for the target to minimize the acquisition costs, to enhance the potential return (Haunschild, 1994). On the other hand, acquirers also need to make an offer that the current target shareholders will accept, as they will only commit to the transaction if the offer price is above the value of the target (Betton et al., 2008; Schwert, 1996).

In general, it is found that PE firms tend to pay less for target firms than public buyers such as corporates (Bargeron et al., 2008; Renneboog, Simons and Wright, 2007). The main reason for this is that the premiums capture expected gains from synergies, which are higher for corporate buyers that most often are operating companies that can reap benefits from

merging with another operating company (Aktas et al., 2011; Bargeron et al., 2008). Bargeron et al. (2008) study the differences between acquisition premiums in PE compared to public markets and find that public targets receive a 63 percent higher premium when the acquirer is a public firm compared to a PE firm. Furthermore, they find this effect to be 14 percent in the case of private targets. A vast amount of literature tries to explain the factors that affect M&A performance. This study follows Haleblan et al. (2009) to categorize the different factors that affect M&A acquisition premiums into deal-specific characteristics, firm-specific characteristics, managerial factors, and environmental effects. First, the firm-specific characteristics that affect the acquisition most are target size and performance. Focusing on size, acquirers tend to pay less for large firms, which translates to lower premiums (Alexandridis et al. 2012; Rossi and Volpin 2004). The reason for this is that larger targets are associated with higher integration costs and therefore lower premiums are paid (Schwerts, 1995). The views on target performance are conflicting; Gomes and Marsat (2019) hypothesized that a high-earning target firm expects bidders to offer higher premiums. On the other hand, Crifo and Forget (2013) found that takeover gains in PE often come from the improvement of inefficient management. Therefore, acquiring high-performance could also diminish potential gains, which might reduce the willingness to pay a premium for PE firms.

Secondly, deal-specific characteristics are found to impact the acquisition premium through the financing method. Axelson et al. (2013) studied the determinants of leverage and pricing in LBOs. They showed that high amounts of leverage are associated with higher transaction prices and, therefore, lower fund returns. They suggest that acquirers overpay when the access to debt is easier, which is often the case in PE. Thirdly, in the light of managerial effects, Renneboog et al. (2007) studied the determinants of public-to-private transactions and find that target shareholders gain a premium of approximately 40 percent. They argue that for targets with lower levels of managerial ownership, a higher acquisition premium is paid. Because at low levels of managerial ownership, agency problems are reduced as incentive realignment is easier after going private when managers only owned small equity stakes. Moreover, management takeover resistance has also been found to increase the acquisition premium (Sinha, 1992). Lastly, literature has found that environmental effects such as favorable industry and market conditions can be a source of returns and influence premiums. It is found that relative valuations, industry multiples, and the competition for targets determine the acquisition premium (Slusky and Caves, 1991). Renneboog et al. (2007) found that pre-buyout undervaluation of the target share price is an important determinant of positive takeover premiums. In line with this, Lai and Pu (2020) find that PE firms pay significantly lower

premiums because they can detect and avoid overvalued targets. Furthermore, Achleitner et al. (2011) found that the industry EBITDA multiples, which are often used as a valuation method, also strongly influence pricing. Favorable markets can increase the valuation of PE funds and lead to multiple expansion, which inflates the acquisition price (Gompers and Lerner, 2000).

In addition to the main factors as defined by Hablelian et al. (2009), in the case of PE, fund-specific characteristics also influence the takeover premium. As mentioned, Kaplan and Schoar (2005) found that well-established PE funds are able to achieve higher returns. They do so because they have proprietary access to transactions, can provide expert advice, and, therefore, sometimes even negotiate more favorable deal terms. In line with this, Achleitner et al. (2011) found that well-experienced PE funds attract more debt financing, which positively influences the buyout price. But, for a given level of leverage, more experienced PE investors are capable of negotiating lower prices.

It can be concluded that the literature supports the four factors as identified by Hablelian et al. (2009) and that PE-specific fund characteristics can impact acquisition premiums. Although research on value creation in PE has expanded, there is still a lack of research focusing on transaction pricing. Subsequently, with the fourth LBO *wave* in mind, this study researches the acquisition premium in a PE context and suggests CSR as an additional determinant.

2.3 The Relationship between CSR and Private Equity

Existing literature on the impact of CSR mainly focuses on market value, firm risk, financial performance, and asset allocation choices. When looking at the relationship between PE and CSR, empirical findings emphasize that PE responsible investing is strategically driven by the necessity of new sources of value creation, improved risk management, and differentiation to raise capital (Crifo and Forget, 2013; Zaccone and Pedrini, 2020).

First, looking at value creation as a strategic driver, it is argued that PE is currently in the fourth wave of value creation, in which the industry turns to SRI. In line with this, Crifo and Forget (2013) analyzed data from the French PE industry, the third-largest in the world after the U.S. and the U.K., and show that SRI in PE is driven by value creation. They suggest that CSR could increase value both through enhanced stakeholder management, as well as using it as a strategic asset, as based on the resource-based view. In addition, Indahl and Jacobsen (2019) examined ESG focused PE funds and showed that CSR could increase competitive advantage and efficiency, leading to significant long-term value. Second,

analyzing risk management as a strategic consideration, Zaccone and Pedrini (2020) emphasized the importance of ESG as a risk-management tool. On the one hand, to reduce the risk of negative events, on the other hand, by integrating ESG into the due diligence process. The former relates to enhanced stakeholder relationships, whereas the latter suggests that investing in CSR can function as a signal for firm value and risk, which relates to the signaling theory. Indahl and Jacobsen (2019) confirmed that integrating ESG factors into a PE fund indeed causes risk reductions.

Lastly, it is stated that socially responsible investing is integrated into PE as a way of differentiation. In their pioneering study on the intersection of SRI and PE, Cumming and Johan (2007) researched what factors characterize this movement and forecast an increase in demand to invest socially responsible. As a response to this increase in demand, Zaccone and Pedrini (2020), who analyzed data from top PE managers, found that PE firms integrate ESG measures because of the increased awareness of investors and other stakeholders. Therefore, it is argued that PE funds engage in ESG activities as a way to differentiate and raise capital. Accordingly, Crifo and Forget (2013) found that PE funds that need to attract investors are more likely to engage in socially responsible practices.

To further elaborate on the implications of the above-mentioned theories on the relationship between CSR and PE, the opposing views of the shareholder and stakeholder theory, the resource-based view, and the signaling theory are elaborated upon in the following section.

2.3.1 Shareholder and Stakeholder Theory

There are two main opposing views in the debate on the effects of CSR on firm value. On the one hand, the stakeholder theory states that it is value-enhancing, while on the other hand, the shareholder theory argues that it is value-destroying. First, the stakeholder maximization view focuses on how CSR is value increasing (Freeman, 1984; Porter and Kramer, 2006). According to stakeholder theory, stakeholders are defined as all individuals directly or indirectly connected to the firm who may affect or be affected by the activities a firm engages in to achieve its objectives (Freeman, 1984). In line with this view, it is argued that firms should consider all agents who have an interest in the firm's operations and go beyond solely maximizing shareholders' value (Parmar et al., 2010). It is found that by considering all types of stakeholders and satisfying their preferences, companies can enhance productivity and efficiency and thereby increase financial performance (Platonova et al., 2016). The reason for this is that CSR engagement reduces conflicts between the various groups of stakeholders and

management (Heal, 2005; Jo and Harjoto, 2011). By aligning the interests of various stakeholders, they will be more supportive of the firm. Enhanced support will in turn lead to an increase in trust, which reduces transaction costs between the involved stakeholders and leads to enhanced performance and sustainable growth (Donaldson & Preston, 1995; Porter & Kramer, 2006). In line with this, Cordeiro and Tewari (2015) showed that environmental performance lowers the probability of penalties, stakeholders undertaking legal actions, and customer boycotts. Even though it is commonly acknowledged that it is impossible to satisfy all stakeholders' needs, finding a balance between the objectives of the firm and of the stakeholders is essential (Jensen, 2001). Therefore, not only stakeholder engagement but also prioritization are important factors in corporate decision making to positively influence financial performance (Michelon et al., 2012).

Second, the shareholder theory argues that it is value-destroying, while on the other hand, the stakeholder theory states that it is value-enhancing. According to the shareholder expense view, the only goal of a firm ought to be to enhance profit and maximize shareholder value (Friedman, 1970). It is argued that investing in environmental and social activities that exceed the minimum standards only involves additional costs, which decreases profitability and therefore reduces firm value (Palmer et al., 1995). An example of these costs is switching costs for the use of recycled materials, which can be accompanied by retraining employees and additional labor hours (Sprinkle and Maines, 2010). In order to align managers' objectives with the objective of the shareholders, managers are incentivized based on financial performance metrics such as profit (Tirole, 2001). This is in line with Jensen and Meckling's (1979) agency cost theory, which states that costs arise when manager and shareholder interests are not aligned. Accordingly, the management only wants to undertake activities that enhance firm value (Jensen, 1994). This withholds them from engaging in CSR activities. In theory, PE is highly efficient at reducing agency costs and monitoring and incentivizing management to maximize shareholder value (Jensen 1986, 1989; Kaplan and Strömberg, 2009). Subsequently, it is argued that incorporating non-peculiar considerations into PE practices through CSR means PE managers are spending cash flows to public needs, which does not seem in line with their usual practices (Crifo and Forget, 2013).

In light of the shareholder wealth creation of ESG in M&A, Aktas et al. (2010) researched the effect of the acquisition of socially responsible target firms on acquirer announcement returns. They show significantly enhanced acquirer returns and suggest that acquiring targets with enhanced ESG performance creates shareholder value. From the target perspective, Gomes and Marsat (2019) found significant evidence that target CSR performance

has a positive effect on target shareholder wealth, as they find positive takeover premiums. In a PE perspective, Crifo et al. (2015) showed that disclosure of ESG performance creates target shareholder wealth. Hence, it can be argued that by maximizing stakeholder value, indirectly shareholder value is maximized. In line with this, Crifo and Forget (2013) found that responsible investing in PE is strategically driven. The aim is to create value and enhance risk management by focusing more on all stakeholders involved, and therefore consistent with improving the business and maximizing shareholder value.

Although both these opposing theories are supported by research, only a small amount of literature is focused on the implications of CSR in a PE context. This study follows the stakeholder theory and views CSR as value-enhancing by maximizing stakeholder value.

2.3.2 Resource-Based View

The resource-based view emphasizes that a firm's ability to generate rare, valuable, difficult to imitate, and non-substitutable resources and capabilities determines the firm's competitive advantage and drives financial performance (Barney, 1991; Wernerfelt, 1984; Russo and Fouts, 1997). The resource-based view has been widely applied in CSR literature. It implies that by engaging in CSR activities, it can evolve into a strategic asset and become a source of competitive advantage (Menguc and Ozanne, 2005). As mentioned, it is argued that the success of a firm highly depends on stakeholder relationships and firm reputation (Freeman, 1984). However, the understanding of the competitive environment is equally as important (Elkington, 1998). In line with this, Branco and Rodriguez (2006) state that by incorporating CSR, a firm can strengthen relationships with stakeholders, which can be a valuable resource to gain a competitive advantage. The reason for this is that by engaging in CSR activities, firms can develop valuable intangible assets such as enhanced management capabilities, company culture, brand equity, innovation, and reputation (Aragón-Correa and Sharma, 2003; Vilanova et al., 2009; Wernerfelt, 1984). These assets are key determinants of a firm's competitiveness and, in turn, can improve a firm's financial performance (Orlitzky et al., 2003). Furthermore, by engaging in CSR and improving firm reputation, a firm's ability to retain and attract talented employees can improve (Bravo et al., 2012), and customer loyalty can increase, which in turn will enhance the value of the firm (Servaes and Tamayo, 2013). Hence, good CSR performance can be an important, valuable and inimitable resource. Accordingly, over the course of the last two decades, many firms, especially large multinational ones, have intensified their efforts to report on ESG matters in order to legitimate their behavior and improve their reputation (Fatemi et al., 2018). However, in order to become a source of competitive advantage and

impact a firm's properties, it is argued that CSR activities are supposed to impact their attractiveness towards potential buyers (Gomes, 2019).

In an M&A context, empirical findings support that socially responsible investing in PE can be a new source of value. Qiao and Wu (2019) built upon the resource-based view and showed the importance of CSR as a strategic asset and a potential source of competitive advantage. Because of this advantage, they found higher takeover premiums for socially responsible targets in cross-border deals. Looking at the relationship of the resource-based view in a PE perspective, Crifo and Forget (2013) studied the characteristics and drivers of the integration of ESG factors by PE investors. They confirmed that responsible activities in PE are driven by value creation in portfolio companies. Further, Indahl and Jacobsen (2019) examined ESG integration into a PE fund and stated that managing ESG risks and pursuing ESG opportunities are fundamental factors to sustain a competitive advantage and create value. They found that by successfully incorporating ESG risks and opportunities into the investment strategy and value creation approach, a fund can increase its returns. This is in line with Vilanova et al. (2009), who showed that incorporating CSR in the strategic management process contributes to implementing a successful strategy and achieving long-term goals.

2.3.3 Signaling Theory

In a seminal study by Akerlof (1970), the signaling theory was first explained by the *lemons problem*. It refers to the problems that can arise regarding the value of an investment as a result of the asymmetric information held by the buyer and the seller. The theory implies that by using signals, information asymmetries between two parties can be dissolved. Parties take actions that reveal information and communicate credibility to the other party to align objectives (Connelly et al., 2011). The theory has been widely studied and plays a role in numerous parts of business. For example, it is found that management utilizes financial statements to signal information to investors about the unobservable qualities of the firm (Zhang and Wiersma, 2009). Furthermore, warranties are used to signal the high quality of products to customers (Boulding and Kirmani, 1993). In an IPO context, Certo (2003) found that boards of firms that are going public signal organizational legitimacy to potential investors to establish credibility and overcome any disadvantages of market newness.

M&A transactions are exposed to many information asymmetries because acquirers generally have insufficient information about the target. These asymmetries arise because targets are hiding disadvantageous information from acquirers and are overstating their firm value to achieve a higher premium (Balakrishnan & Koza, 1993; Gilson & Schwartz, 2005).

Moreover, information asymmetries can arise because of a lack of valuation methods for intangible assets and characteristics of the target. Positive intangible assets can be difficult to quantify, which can negatively affect the acquisition premium (Cheng et al., 2016). Although acquirers perform thorough due diligence on the target, it is often still difficult to obtain complete information. Therefore, buyers can use signals to provide them with additional information about the target to be able to determine the true value (Connelly, Certo, Ireland, & Reutzel, 2011). Due to the importance of information asymmetries, a number of studies have applied the signaling theory on acquisition premiums (Folta and Janney, 2003; Laamanen, 2007; Reuer et al., 2012). Laamanen (2007) found that investments in R&D and R&D growth rates are perceived by investors as a signal of the company's growth outlook and can positively affect the takeover premium. Folta and Janney (2003) showed that publicly held technology firms that cope with information asymmetries can issue private equity to signal that management believes their growth opportunities are undervalued. Consistently, they found significant positive abnormal returns to private equity placement announcements.

It is argued that with the rise of ESG measures, reporting ESG data can be used to signal transparency. Disclosing ESG performance reveals additional information about the business operations and the risks the firm faces. Firms disclose CSR activities to signal the quality and trustworthiness of their operations and to improve their reputation (Fisman et al., 2006; Fombrun and Shanley, 1990). It is found that greater transparency of ESG performance diminishes the volatility of security returns and lowers investment portfolio risk (Czerwinska and Kazmierkiewicz, 2015).

Looking at signaling in an M&A context, Yu et al. (2017) showed that ESG leads to an increase in firm performance as transparency decreases investor information asymmetry. This increase in firm performance can also result in higher takeover premiums. Choi et al. (2015) found that in a highly asymmetric context, a disclosed CSR score can send out positive (negative) signals about the overall quality of the firm and result in a higher premium (discount). In line with this, Gomes and Marsat (2019) showed that social performance contributes to the premiums paid in cross-border acquisitions. They suggest that in highly uncertain cross-border deals, social performance is valued as it functions to reduce information asymmetries. Social performance can be used as a signal to overcome agency problems and information asymmetries. In a PE context, Zaccone and Perdini (2012) found that PE managers are incorporating ESG measures into the due diligence process to assess CSR risks.

2.4 Hypotheses Development

Although the effect of CSR on acquisition premiums in the M&A context has been researched by only a few scholars (Aktas et al., 2011; Choi et al., 2015; Deng et al., 2013; Gomes and Marsat, 2019), the effect on PE acquisition premiums until this day is only studied by Crifo et al. (2015). Subsequently, this study aims to contribute to the understanding of the effect of CSR performance on PE target premiums. As explained, CSR can create value based on the stakeholder theory, through which it can become a valuable resource and strategic asset as explained by the resource-based view; this can become clear to investors through signaling. CSR performance and a good social reputation are the outcomes of long-run investments, and Qiao and Wu (2019) therefore argued that targets demand a premium for this. This view is confirmed by Gomes and Marsat (2018), who studied the effect of target CSR performance on the bid premium in M&A transactions. They found that target firm CSR performance has a positive effect on bid premiums. They argue that CSR can function as a signal of higher goodwill and lower risk. Crifo et al. (2015) performed a field experiment among PE investors and found that disclosure of prosperous ESG performance positively impacts firm valuation and investment decisions. Specifically, they find an asymmetric effect in which investors react stronger to negative ESG performance disclosure than to positive ESG performance disclosure. They argue that firms that do not manage ESG issues will have restricted access to PE, which will increase their cost of capital and destroy firm value for their shareholders. In line with this, Elkington (1998) argued that a firm's reputation is built on transparency, which is an important determinant of success. By disclosing ESG scores, high-performing firms signal increased transparency about their environmental and social performance as well as about their governance structure. This facilitates reducing information asymmetries between these firms and their stakeholders (Hubbard, 1988; Ioannou and Serafeim, 2011). Accordingly, Yu et al. (2017) showed that the transparency that is accompanied by disclosing ESG performance leads to a decrease in investor information asymmetry and increases firm performance. This increase in firm performance can result in higher takeover premiums. Choi et al. (2015) suggested that in a highly asymmetric environment, target information on CSR performance functions as a positive signal of a firm's overall quality, on which acquirers rely and pay a premium. Hence, based on the three main theories and in line with the previous studies, the following statements are hypothesized:

Hypothesis 1a: There is a positive relationship between target ESG disclosure and the acquisition premium

Hypothesis 1b: There is a positive relationship between target ESG performance and the acquisition premium

Hypothesis 1c: Targets with a higher ESG score receive higher premiums than targets with a lower ESG score

The relation between target CSR performance and acquisition premiums can especially be interesting in a cross-border context. Cross-border deals encompass higher information asymmetry and a greater risk of inappropriate evaluation compared to national transactions (Gatignon and Anderson, 1988). Although they entail more risk, they also conjecture high potential return, due to the opportunity to acquire novel knowledge and capabilities (Shimizu et al. 2004). Qiao and Wu (2019) studied the impact of a target company's CSR performance on the cross-border acquisition premium and find a higher premium for socially responsible target firms. As an explanation for this result, they highlight the importance of CSR as a strategic asset, in accordance with the resource-based view. Qiao and Wu (2019) state that socially responsible targets can bridge the relationship between the acquirer and stakeholders and broaden the local social network of the acquirer after acquisition which reduces operational uncertainty. This is confirmed by Wickert et al. (2017), who find that large multinationals enter foreign markets by using a novel strategy; the *buying CSR* strategy. Moreover, targets with a positive social reputation are more likely to attract external financing from financial institutions, which is of high importance in PE that uses high levels of debt to finance a deal (Groening and Kanuri, 2013). In addition to these findings, Gomes and Marsat (2018) show that M&A bidders value CSR performance differently in national deals compared to international deals. Specifically, they find that social performance only contributes to the premium in cross-border acquisitions. This suggests that in highly uncertain cross-border deals, social performance is valued and functions to reduce information asymmetries, which results in a positive effect on the premium. This leads to the following hypotheses:

Hypothesis 2a: Target ESG disclosure has a positive effect on the acquisition premium in a cross-border acquisition

Hypothesis 2b: Target ESG performance has a positive effect on the acquisition premium in a cross-border acquisition

Moreover, target ESG performance may have additional benefits. In an extensive report on the PE industry, Deloitte (2019) has reported that CSR performance not only influences the valuation of target firms but also the probability of deal completion (Deloitte, 2019). In line with the stakeholder maximization theory, it is presumed that high ESG performance is representative of the trustworthiness of the target. High CSR performance indicates that both entities can have more trust in each other in conforming to implicit and explicit contracts (Donaldson & Preston, 1995). In addition, acquirer stakeholders will more easily deduce the added value of a target with a high ESG score, which should facilitate the deal and lead to a shorter time to complete a deal. This is also in accordance with the signaling theory, as disclosing ESG performance can signal the overall quality of the firm (Choi et al., 2015). From a different perspective, Deng et al. (2013) show that high acquirer CSR performance improves the wealth of both the shareholders and the stakeholders and effectively reduces the conflicts of interest between them. This facilitates faster integration of the acquirer and the target during the pre-acquisition negotiations. They find that takeovers by socially responsible acquirers have a higher probability of completion and of being completed in less time. In accordance with the stakeholder maximization view and the signaling theory, it is therefore hypothesized that:

Hypothesis 3a: Target ESG disclosure leads to faster deal completion

Hypothesis 3b: Target ESG performance leads to faster deal completion

3. Methodology

Firstly, this section describes the data sources used to retrieve the data necessary for the sample collection. Secondly, this section explains the bid premium and the deal completion measurements. Thirdly, this section discusses the utilized ESG performance measurement. Fourthly, this section provides information on the control variables used in the analyses. Lastly, this section explains the empirical methods used to conduct the analyses.

3.1 Data Sources and Sample Collection

A database is needed that includes PE deal data, company-specific data, and ESG performance data to test if the target ESG score affect the bid premium and the time it takes to complete a deal in PE deals. The PE deal data is retrieved from the Bureau van Dijk Zephyr database. The company-specific data, used as control variables, is retrieved from the Bureau van Dijk Orbis database. Furthermore, target ESG performance data is retrieved from the ThomsonOne ASSET4 database, in line with the study conducted by Gomes & Marsat (2018). The ASSET4 database includes around 8700 companies with ESG scores and provides history up to 2002. The ThomsonOne database is chosen as it contains ESG scores of companies worldwide, instead of only the U.S., such as the KLD database used by Deng et al. (2013). Another advantage of the ASSET4 database over other databases is the number of data points utilized to derive the total score. The ASSET4 database is based on 800 data points, whereas the KLD database solely analyzes 250 data points. Furthermore, the ESG score assigned in the ASSET4 database ranges from zero to 100. Although the IVA database used by Aktas et al. (2010) does comprise companies worldwide, it provides scores on a seven-point scale. According to Utz (2019), a broader scoring range allows for a more detailed analysis of rating changes.

The ASSET4 database is constructed by more than 150 analysts collect publicly reported information on over 450 company-level ESG measures. These measures are grouped into ten categories aggregated to calculate the three pillars of the ESG score: environmental, social, and governance. The ESG score is a weighted sum of these ten categories. Appendix A contains an overview of the criteria and the manner the score is computed. The database is updated continuously, which in most cases is once a year in line with corporate reporting (Bureau van Dijk, 2020). As mentioned, the PE deal data is retrieved from the Zephyr database. Zephyr is the most comprehensive database of deal information; it contains over 1.8 million deals in M&A, IPO, PE, and venture capital (Bureau van Dijk, 2020). Based on prior research on

takeover premiums, offers where the bidder initially has a minority stake - owns less than 50 percent - of the shares of the target firm and attempts to acquire a majority stake - more than 50 percent - of the shares of the target firm are selected (Ayers et al., 2003; Betton et al., 2009; Dionne et al., 2015; Gomes and Marsat, 2018; Rossi and Volpin, 2004). Several selection criteria have been applied to retrieve the deal data, as described below:

- A. The deal is announced and completed between 2002 and 2020;
- B. It is a prerequisite that the target is originated in the U.S. or the U.K.;
- C. The acquirer initially has a minority stake - less than 50 percent of the target's shares before deal announcement and has acquired a majority stake - more than 50 percent of the shares after deal completion¹
- D. The deal type is an LBO or a Public Takeover by PE, financed by PE.

After retrieving the deals from the Zephyr database, and the ASSET4 database, the information is merged to obtain a sample that includes inter-and cross-border deals with targets from the U.S. and the U.K. and acquirers from over nine different countries. In this study, the last ASSET4 scores available before the announcement date of the deal are used. For control group purposes, not all targets have an ESG score available. The sample contains data for the period 2002 through 2020. This period is chosen because the Zephyr database does not provide data for the sample collected before 2002. Appendix B shows an overview of the data retrieval process. Moreover, Appendix C presents the summary statistics of the collected sample.

3.2 Bid Premium and Deal Completion Measurement

To test the hypotheses if the target ESG score affects the bid premium and the completion time of deals, both variables need an appropriate measurement. As mentioned above, all the deal data is retrieved from Zephyr.

To test the first two hypotheses, the bid premium is the main dependent variable. The bid premium reflects the difference between the actual price offered for a target's share and the market's pre-acquisition value (Bertrand et al., 2016). In most studies, bid premiums are

¹ Because this study assesses the impact of target CSR on bid premiums, deals concerning a change in control rather than the acquisition of minority stakes are analyzed. Moreover, the coverage of transfers of stakes below 50% is plausible to be affected by cross-country differences in disclosure requirements. Solely selecting transactions of majority stakes minimizes these disclosure biases (Gomes and Marsat, 2019).

computed based on the difference between the target share price around 40 days before the deal announcement and the acquisition share price at deal completion. This time window is chosen to ensure the computed premium is unaffected by potential takeover rumors and market inefficiencies (Betton et al., 2009; Gomes & Marsat, 2018). In line with previous research, the bid premium utilized in this study is calculated as the initial offer price ratio to the target closing stock price 40 days before deal announcement, as measured by Zephyr.

Furthermore, to test the third hypothesis, which states that target ESG performance leads to faster deal completion. In line with Deng et al. (2013), a variable for completion time is created. It is defined by the difference between the date the deal was completed and was first announced, in days. Because of high levels of skewness and kurtosis, the natural logarithm is calculated. The variable serves as the dependent variable in the third regression model.

3.3 ESG Performance

Target ESG performance represents the main independent variable of this study. As described in the previous section, ESG performance is measured by the ASSET4 ESG score by Thomson Reuters. The ESG score measures a company's relative ESG performance based on ten main categories concerning the three pillars environmental, social and corporate governance. Each pillar has its own criteria.

The environmental pillar focuses on reducing the impact a company makes on the environment based on resource use, emission reduction, and innovations to reduce societal and environmental burdens. It has been widely discussed that firms engaging in environmentally conscious activities face additional costs, which erodes competitive advantage and is value-destroying (Ambec and Lanoie, 2008). However, this paradigm has been challenged, and it is argued that improved environmental performance may lead to better economic performance instead of only increased costs. Ambec and Lanoie (2008) showed that financial performance can be improved through enhanced risk management and by responding to a growing demand for differentiated, greener products. Investors also perceive this value-enhancing view. Empirical findings of academic literature on PE support that sustainable investing is driven by a need for increased risk management, value creation, and differentiation (Crifo and Forget, 2013). In line with this, Hartzmark and Sussman (2019) found that funds categorized as highly sustainable experience substantially higher fund inflows. They find that this is due to a strong positive expected future performance and low levels of expected risk.

The social pillar is aimed at evaluating how the company is coping with its employees and society. Specifically, this pillar focuses on how the company treats its employees, respects human rights, and takes care of the community it operates in. In addition to the stakeholders involved, this pillar also focuses on the company's product responsibility; this means the capacity to produce goods and services of a certain quality. Various studies show that satisfied employees are highly motivated, have a good work ethos, and are more productive (Branco and Rodrigues, 2006; Eskildsen and Dahlgaard, 2000). Increased productivity enhances a firm's financial performance by enhancing efficiency and effectiveness (Platonova et al., 2016). In line with this, Jo and Harjoto (2011) found that CSR engagement positively influences firm value mostly due to activities that focus on social enhancement such as employee diversity, firm relationship with the employee, and community activities.

The governance pillar's main focus is to what extent the firm takes stakeholder interests into account. The first category is the management and considers the commitment towards corporate governance practices. The second category reviews the way the company treats its shareholders. The third category reflects a company's practices to communicate that it integrates the financial, social, and environmental aspects into its decision-making processes. The most important theory to explain the value of corporate governance is the agency theory. The agency theory describes the conflict of interest that sometimes arises between management and shareholders when there is a separation of ownership and control. Self-interested managers who do not act in the shareholders' best interest can decrease financial performance due to agency costs (Jensen & Meckling, 1976). In general, corporate governance mechanisms can overcome this problem and reduce agency costs, causing an increase in firm performance and value (Florackis, 2008). Velte (2017), supports this view as he showed that governance performance, in comparison to environmental and social aspects, has the strongest, positive impact on financial performance. Especially in PE, corporate governance is important because PE investors usually control the portfolio company's management. Creating value through governance engineering is part of their core business (Kaplan and Strömberg 2009).

3.4 Control Variables

In addition to the main independent variable of interest, control variables are included in the analyses. This paper will follow the empirical research on takeover premiums of Gomes and Marsat (2018) for selecting control variables. The control variables are classified into the firm- and deal-specific controls. Although previous literature indicates that acquirer characteristics

may have a direct impact on offer premiums. It is not feasible to control those variables in our study since we are comparing PE bidders and non-PE bidders, and most PE firms are private acquirers without sufficient financial data. Hence, we follow Gomes and Marsat (2018) and control target characteristics and deal characteristics in the regressions.

3.4.1 Target-Specific Characteristics

Target Size

Previous studies have found a negative relation between acquisition premiums and target size. This negative relation indicates that acquirers tend to pay less for large firms, which translates to lower premiums (Alexandridis et al., 2012; Rossi and Volpin, 2004). This finding is supported by Comment and Schwert (1995), who find that larger targets are associated with higher integration costs, and therefore lower premiums are paid. In line with Cho et al. (2020), to control for target firm size, a control variable which is measured by the natural logarithm of the target's total net assets is included in the analysis.

Target Growth

There are contradicting views on the relationship between target performance and the bid premium. On the one hand, PE acquirers may be interested in targets that perform poorly because of the gains that could be realized if the current managers were replaced. In this case, there is a negative relationship between performance and the takeover premium. On the other hand, targets that are not performing well are presumably in a weak financial state and have less bargaining power. In this case, a positive relationship between performance and the premium is expected (Dionne et al., 2015). Therefore, a control variable for target performance is added in terms of target growth. It is measured as the target's average turnover growth, the last three years before the deal (Bargeron et al., 2009).

Target Leverage

Renneboog et al. (2007) found that higher premiums are paid for firms with a small leverage portion. The unused debt capacity increases the ability to take on more debt, which is done commonly in PE. This is in line with Bargeron et al. (2009), who argue that highly levered target firms have less bargaining power due to the inability of recapitalizing against the takeover attempt. Hence, target leverage is included in the analysis as a control variable. Following Deng et al. (2013), leverage is calculated by dividing the book value of outstanding

debt by the shareholder's equity market value. The natural logarithm is taken to deal with high levels of skewness and kurtosis.

Target R&D

Kogut and Zander (1992) stated that the level of R&D represents the firm's knowledge and found a positive relation between target R&D expenditures and bid premium. In line with this finding, Laamanen (2007) finds this positive relation arises because R&D activities can yield considerable synergistic resources, R&D growth rates are perceived by investors as a signal of the company's growth outlook and can positively affect the takeover premium. Target R&D expense is measured by the natural logarithm of the ratio of the target's R&D expenditures over its operating revenue and is included as a control variable in the analysis.

Target Liquidity

Ayers et al. (2003) state that because liquidity is an indicator of a firm's financial position, it could affect premiums. This is confirmed by Officer (2006), who studied acquisition prices in the light of private targets that are in financial distress and finds that liquidity constraints are heavily discounted. Therefore, he states that the acquisition price of a target is negatively affected by the need for liquidity. Liquidity is added as a variable to control for this potential effect. The variable is measured by the current ratio, which divides the current assets by short-term liabilities.

Target Return on Equity

Return on Equity (ROE) is a measure of profitability. Gomes and Marsat (2018) state conflicting views on target profitability. On the one hand, they hypothesize that a high-earning target firm expects bidders to offer higher premiums. On the other hand, however, takeover gains often come from the improvement of inefficient management; positive earnings could also reduce potential gains. Especially in PE, where governance engineering plays an important role and leads to value creation (Crifo and Forget, 2013). Therefore, ROE is included in the analysis as a control variable. It is measured as the ratio of the profit before tax to total shareholder's equity.

3.4.2 Deal Characteristics

All Cash Bid

Slusky and Caves (1991) were the first ones to find that an all-cash transaction implies a substantial tax effect and increases the bid premium significantly. This positive relationship is further supported by studies conducted on takeover premiums by Comment and Schwert (1995) and Betton et al. (2008). Therefore, a dummy variable is included, in which the dummy equals one when the acquisition is all-cash financed.

Cross-border Deal

Cross-border M&A deals entail greater information asymmetry and a higher risk of improper evaluation in comparison to domestic acquisitions (Gatignon and Anderson, 1988). However, cross-border deals are also associated with increased potential shareholder gains, representing good opportunities to acquire new knowledge and capabilities (Danbolt and Maciver 2012; Shimizu et al. 2004). This is supported by Mateev and Andonov (2015), who find target firms earn substantially higher premiums in cross-border acquisitions than in domestic acquisitions. Previous literature suggests that this difference in premiums between domestic and foreign acquisitions can be explained by differences in governance structures such as strong shareholder protection (Rossi and Valpin, 2004). A dummy variable is included for cross-border acquisitions, which equals 1 when the nature of the acquisition is cross-border to control for this relationship.

Horizontal Transaction

The industry-relatedness of deals can affect bargaining power and increase takeover synergies leading to higher acquisition premiums (Gomes and Marsat, 2018). Although all the acquirers are PE firms, a dummy variable is included for horizontal acquisitions which is equal to 1 when the target and the acquirer operate in the same industry. NACE codes are used to identify industries.

Runup

According to Schwert's (1996) markup price hypothesis, the higher the runup, the higher the premium paid to acquire the target. Betton et al. (2008b) revisit Schwert's hypothesis and find a strong positive relation between offer premiums and runups. Subsequently, to control for this effect, a variable is included that measures the runup that is measured as the ratio of the target share price one day and three months before the announcement of the deal.

After all the deal data is retrieved from the Bureau van Dijk Zephyr database, it is merged with the ASSET4 database. Deals are excluded where no target BvDID identifier is available and where the bid premium has not been calculated. Lastly, the necessary company-specific data for the control variables are retrieved from Orbis by using their unique BvDID identifiers.

Due to the focus of this study on PE, the collected sample is very small. The ASSET4 database only contains information about public companies; hence only companies that were public before the PE takeover have an ESG score. This will be further explained in the limitation sections. As mentioned, for control group purposes, targets without an ESG score are also included in the sample.

3.5 Empirical Methods

3.5.1 Propensity Score Matching

To research whether target companies that are involved in CSR activities achieve higher bid premiums, a group of control firms is created based on propensity score matching (PSM), following Deng et al. (2013) and Gomes (2019). PSM estimators are widely used in evaluation research to estimate average treatment effects. As first introduced by Rosenbaum and Rubin (1983), propensity score matching is presented to reduce the selection bias in observational datasets. The selection bias occurs when a constructed sample is not representative due to improper randomization of the selected data. In PSM, a propensity score is calculated after which companies with similar scores can be matched to obtain a control group of untreated companies with characteristics similar to those of the treated (Blundell and Dias, 2000).

In this study, the control firms are selected by matching targets with an ESG score to targets without. This is called a binary treatment. In the case of a binary treatment, a logit model can be used to estimate the propensity score (Caliendo and Kopeining, 2008). The propensity score is calculated using a logit model with the following target firm-specific variables: firm size (total assets, number of employees, net income) as measured the year before the deal, profitability (ROE) as measured the year before the deal, growth (average growth rate of the turnover over the last three years before the deal, asset growth rate of one year before the deal, asset growth rate two years before the deal, turnover growth rate one year before the deal, turnover growth rate two years before the deal), and the industry the target operates in. These variables are chosen based on prior research on acquisition likelihood and the differences in

these variables between the two groups, as can be seen in the descriptive statistics presented in the next section (Gomes, 2019; Palepu, 1986).

After calculating the propensity score, the control firms are selected by matching each target with an ESG score (treated) with a target without an ESG score (untreated), using nearest-neighbor matching. Nearest-neighbor matching is a common technique in which an untreated company is paired with a treated company based on the nearest propensity score. This approach assures that control firms (targets without an ESG score) are as equal as possible to the treated group (targets with an ESG score). The distribution of the propensity scores and the statistical balance between the treated and the control group can be found in Appendix D, E, and F. The number of targets in the treated group has decreased from 284 to 211, as 73 targets could not be matched. The t-values of the matched group indicate a balance between the treatment and the control group. The reduction in the mean bias from 10.4% to 5.0% suggests that the matching method is not perfect and the matched group is slightly biased. However, the p-values indicate that the treated group and the matched control group are statistically not different from each other. Moreover, the pseudo R-square decreased from 0.238 to 0.029 after matching, suggesting that the coefficients of the treated and the matched control group are statistically not different from each other (Caliendo & Kopeinig, 2008).

3.5.2 Empirical Models

To analyze the bid premium and days it takes to complete a deal with respect to ESG performance; this study performs multiple regression analyses. Standard linear regression models are estimated using Ordinary Least Squares (OLS) regressions. The OLS regression design is further supplemented with year and target industry fixed effects. The fixed effects are added to control for time-specific effects and unobserved target heterogeneity (Bertrand et al., 2016; Gomes & Marsat, 2018; Hope et al., 2011). Hypothesis 1a predicts that there is a positive relationship between target disclosure of CSR performance and the bid premium paid for the acquisition of the company. This is tested by regressing the bid premium on the target ESG dummy and the control variables. The ESG dummy equals 1 when the target has disclosed an ESG score. To control for variation over time and within target industries, a fixed-effects model is applied:

$$\text{Bid Premium}_i = \alpha_0 + \beta_1 \text{Target ESG Dummy} + \beta_2 \text{Target Firm Controls} + \beta_3 \text{Deal Controls} + \text{Fixed effects} + \varepsilon_i$$

Hypothesis 1b, which states that there is a positive relationship between target ESG performance and the announced bid premium paid, is tested by regressing the bid premium on the target ESG score and the control variables. As mentioned, to control for variation over time and within target industries, a fixed-effects model is applied:

$$\text{Bid Premium}_i = \alpha_0 + \beta_1 \text{Target ESGScore} + \beta_2 \text{Target Firm Controls} + \beta_3 \text{Deal Controls} + \text{Fixed effects} + \varepsilon_i$$

Combining hypotheses 1a and 1b leads to hypothesis 1c, that the positive relationship between target CSR performance and the bid premium is stronger when the target has higher CSR performance levels. Therefore, to test this, the bid premium is regressed on a dummy variable that equals 1 when the target has a high ESG score. A high ESG score representing a strong CSR performance is defined by a score higher than the median. Similar to the first two hypotheses, to control for variation over time and within target industries, a fixed-effects model is applied to test hypothesis 1c:

$$\text{Bid Premium}_i = \alpha_0 + \beta_1 \text{HighESGScore} + \beta_2 \text{Target Firm Controls} + \beta_3 \text{Deal Controls} + \text{Fixed effects} + \varepsilon_i$$

In addition to the predictions of the first hypotheses, the second hypothesis predicts that a combination of target ESG disclosure in a cross-border deal enhances the bid premium. An interaction term between target ESG disclosure and a binary variable for cross-border acquisitions is added to the regression to disentangle the potential incremental impact of the cross-border nature of acquisitions. The binary variable is one for cross-border deals in which the target is originated in a different country than the acquirer and zero when target and acquirer are located in the same country. Again, a fixed-effects model is applied to regress hypothesis 2a:

$$\text{Bid Premium}_i = \alpha_0 + \beta_1 \text{Target ESGDummy} + \beta_2 \text{ESGDummy} \times \text{Crossborder} + \beta_3 \text{Target Firm Controls} + \beta_4 \text{Deal Controls} + \text{Fixed effects} + \varepsilon_i$$

In line with the above-mentioned hypotheses and to go deeper into hypothesis 2a, hypothesis 2b predicts that target ESG performance in cross-border deals should have a positive effect on the bid premium. An interaction term between ESG score and a dummy

variable which equals one if the deal is performed on a target in a different nation is added to the regression to test this. The bid premium is regressed on this interaction term to test hypothesis 2b:

$$\text{Bid Premium}_i = \alpha_0 + \beta_1 \text{Target ESGScore} + \beta_2 \text{ESGScore} \times \text{Crossborder} + \beta_3 \text{Target Firm Controls} + \beta_4 \text{Deal Controls} + \text{Fixed effects} + \varepsilon_i$$

The third hypotheses predict that target ESG disclosure and target ESG performance lead to faster deal completion. To test this, a new dependent variable is introduced that measures the time between deal announcement and deal completion. To test hypothesis 1a, which states that CSR disclosure should lead to faster deal completion, time to deal completion is regressed on the target ESG score and the same firm- and deal-specific control variables, again accounting for year and industry variations by applying a fixed-effects model.

$$\text{Completion time}_i = \alpha_0 + \beta_1 \text{DummyTarget ESG} + \beta_2 \text{Target Firm Controls} + \beta_3 \text{Deal Controls} + \text{Fixed effects} + \varepsilon_i$$

In line with hypothesis 1b, hypothesis 3b predicts that target CSR performance has a positive effect on the time it takes to complete a deal. To test this, time to deal completion leads is regressed on target CSR performance as measured by the ESG score and the previously mentioned control variables.

$$\text{Completion time}_i = \alpha_0 + \beta_1 \text{Target ESGScore} + \beta_2 \text{Target Firm Controls} + \beta_3 \text{Deal Controls} + \text{Fixed effects} + \varepsilon_i$$

4. Results

4.1 Descriptive Statistics and Correlations

Table 1 shows the descriptive statistics of the dependent and independent variables and the control variables of the unmatched sample. The total pre-matched sample contains 900 deals and is divided into two sub-samples based on the ESG dummy variable, which represents the have an ESG score. The sample contains 616 deals in which the target firm does not disclosed an ESG score, compared to 284 deals in which the target firms have done so. Accordingly, Panel A presents the descriptive statistics of target firms that do not have an ESG score disclosed (ESG dummy = 0), whereas Panel B shows the descriptive statistics of target firms that do have an ESG score (ESG dummy = 1). The variables that are dispersed the most between the two sub-groups can be derived from this table and are used in the PSM. First, the sample shows that not all data is available for all firms, which will limit the regressions. This will be further explained in the limitation section.

Second, the main dependent variable, the bid premium in Panel A is on average 22.41%, while in Panel B, this is 25.23%, indicating that the average bid premium is higher for firms that have a disclosed ESG score. The second main independent variable is days to complete a deal; the difference in averages between the sub-samples is relatively small; the average in panel A is 128.16 days, compared to an average of 124.48 in Panel B.

Third, looking at the variables that are dispersed the most, total assets on average are 5.36 million USD in Panel A and 6.98 million USD in Panel B. Furthermore, the ROE is remarkably different between the two groups. In the non-disclosed ESG group, the ROE is only 0.68% on average, whereas this is 8.17% for the sub-sample that does have disclosed ESG scores. This suggests that the average return on equity of the firms that do disclose CSR performance is higher. However, this sample is also smaller hence could be influenced more easily by a relatively small number of firms with a high ROE. Lastly, the average turnover growth over the last three years before the deal equals 29.01% in Panel A and only 10.25% in Panel B. Due to the differences in these variables between the two sub-samples, they are included in the PSM.

Panel A: Descriptives ESG dummy = 0

Variable	Obs.	Mean	Median	SD	Min	Max
<i>Dependent Variables</i>						
BIDPREMIUM	616	22.4090	14.9000	25.2580	-9.4250	109.0000
DAYS	616	128.1560	98.3820	136.1190	0.0000	1433.2953
<i>Independent Variables</i>						
ESGDUMMY	616	0	0	0	0	0
ESGSCORE	616	0	0	0	0	0
<i>Firm-specific Control Variables</i>						
TARGETTA	613	5.2644	5.4520	1.8381	0.0000	9.7824
TARGETGROWTH	519	0.2901	0.0473	1.8182	-0.9818	32.4207
TARGETLEVERAGE	540	0.8342	0.7736	0.4049	0.1671	2.2293
TARGETRD	142	1.6272	1.6189	1.1836	0.0000	4.0861
TARGETLIQUIDITY	587	2.0357	1.4860	2.1157	0.0790	16.2240
TARGETROE	528	0.6786	6.9420	45.1241	-160.4770	158.5590
<i>Deal-specific Control Variables</i>						
ALLCASH	616	0.7679	1	0.4225	0	1
CROSSBORDER	616	0.1071	0	0.3095	0	1
HORIZONTAL	616	0.1818	0	0.3860	0	1
RUNUP	360	1.0862	1.0645	0.2534	0.4171	1.8022

Panel B: Descriptives ESG dummy = 1

Variable	Obs.	Mean	Median	SD	Min	Max
<i>Dependent Variables</i>						
BIDPREMIUM	284	25.2289	19.1530	22.6892	-9.4250	109.0000
DAYS	284	124.4826	93.5218	133.8329	0.0000	1221.1924
<i>Independent Variables</i>						
ESG DUMMY	284	1	1	0	1	1
ESG SCORE	284	42.3128	40.0500	15.7416	11.1200	91.1100
<i>Firm-specific Control Variables</i>						
TARGETTA	281	6.9794	7.3147	2.0955	0.6754	11.0791
TARGETGROWTH	264	0.1025	0.0351	0.3560	-0.4414	4.8601
TARGETLEVERAGE	263	0.8860	0.8559	0.3944	0.1671	2.2293
TARGETRD	140	1.7709	1.9575	1.0807	-0.2601	4.0354
TARGETLIQUIDITY	266	1.9779	1.4925	1.8081	0.0790	16.2240
TARGETROE	262	8.1685	10.0640	39.7264	-160.4770	158.5590
<i>Deal-specific Control Variables</i>						
ALLCASH	284	0.7042	1	0.4572	0	1
CROSS BORDER	284	0.1232	0	0.3293	0	1
HORIZONTAL	284	0.2183	0	0.4138	0	1
RUNUP	200	1.0557	1.0440	0.1994	0.4171	1.8022

Table 1: This table shows the descriptive statistics of the dependent and the independent variables in the unmatched sample. Furthermore, it shows the firm-specific and deal-specific controls. The unmatched sample is divided based on the disclosure of an ESG score, as measured by the ESG dummy. It consists out of 900 deals of which 284 targets have an ESG score available.

Table 2 shows the descriptive statistics of the variables of the matched sample used to perform the regression analyses. The sample bid premium has a positive average of 21.54% with a standard deviation of 22.64, which is consistent but slightly lower compared to the findings of Gomes and Marsat (2018), who found a positive average bid premium of 32.1%. The natural logarithm of the number of days to complete a deal is used in the analysis and has an average of 4.52 and a standard deviation of 0.63. The CSR score, as measured by the ESG score, averages 20.69 out of 100, with a standard deviation of 23.49. Due to the matching, the sample contains 211 deals of which the target has an ESG score, and out of these 211 deals, there are 109 deals in which the target has a score above the median.

Variable	Obs.	Mean	Median	SD	Min	Max
<i>Dependent Variable</i>						
BIDPREMIUM	422	21.5409	15.0650	22.6400	-11.5320	109
DAYS	422	4.5198	4.5433	0.6347	0	6.2953
<i>Independent Variables</i>						
ESGDUMMY	422	0.5	0.5000	0.5006	0	1
ESGSCORE	422	20.6931	5.5600	23.4907	0	88.2200
<i>Firm-specific Control Variables</i>						
TARGETTA	422	6.8248	6.9100	1.6166	2.1771	10.7694
TARGETGROWTH	422	0.0898	0.0373	0.2756	-0.3922	4.8601
TARGETLEVERAGE	410	0.8013	0.7895	0.2998	0.1676	1.9389
TARGETRD	187	1.6138	1.6376	1.0755	-0.2601	4.0354
TARGETLIQUIDITY	413	2.0329	1.5380	1.7061	0.0790	16.1010
TARGETROE	422	8.8947	10.0640	33.0841	-160.4360	155.6480
<i>Deal-specific Control Variables</i>						
ALLCASH	422	0.7417	1	0.4382	0	1
CROSS BORDER	422	0.1090	0	0.3120	0	1
HORIZONTAL	422	0.1919	0	0.3943	0	1
RUNUP	303	1.0759	1.0537	0.2083	0.4171	1.7541

Table 2: This table shows the descriptive statistics of the dependent and the independent variables. Furthermore, it shows the firm-specific and deal-specific controls in the matched sample. The matched sample consists of 422 deals in total of which 211 targets do not have an ESG score available.

Target size range from 2.17 million to 10.77 million and have an average value of 6.82 million. This is in line with Qiao et al. (2020), who found an average of 6.48 million. Similarly, target turnover growth over the three years pre-acquisition ranges from -0.39% to 4.86%, which is in line with previous findings (Gomes and Marsat, 2018). Leverage is measured as the ratio of total debt to shareholder's equity, and has a mean of 0.80. This indicates that, on average, targets have less total debt than equity. Furthermore, of the 422 deals, only 187 targets have disclosed pre-deal R&D expenses, which as mentioned before will limit the number of observations in the regressions. The level of R&D is measured by R&D expenses as a percentage of the operating revenue and is on average 1.61%. The target liquidity ratio is widely distributed as it ranges from 0.08 to 16.10 and is on average 2.03. This means that, on average, all targets are liquid and able to pay their short-term liabilities. This is in line with the finding of Gomes and Marsat (2018), who found an average of 2.34. Target ROE is widely dispersed as it ranges from -160.44% to 155.65% and has a mean of 8.89%. This indicates that PE targets include firms that are not performing well. Except for price runup, all deal-specific controls are dummy variables. They show that 74% of the deals were paid in all cash. Moreover, only 10% of the deals were cross-border, and 19% of all deals were performed within the same industry. The price runup is on average 1.08, which is in line with previous literature (Betton, et al., 2008b).

Table 3 shows the correlation between all variables used in the regressions. The correlations show the relationship between two variables without the influence of any other

variable. Therefore, examining the coefficient can give an indication of the direction of the results. It is notable that the correlation between target CSR (ESGDUMMY) disclosure and the bid premium is positive and significant, this suggests that CSR disclosure has a positive effect on the premium. Similarly, the correlation between CSR performance (ESGSCORE), also shows a positive and significant coefficient. This indicates that the direction of the relationship between target CSR performance and the acquisition premium is positive. Moreover, the correlation between CSR disclosure and CSR performance and the time it takes to complete a deal show a positive sign, in contradiction with the hypothesized negative sign. However, the correlations are insignificant hence no implications can be inferred from this. To further explore these relationships, this study performs multivariate regressions. The results are presented in the next section.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) BIDPREMIUM	1						
(2) DAYS	-0.0007	1					
(3) ESGDUMMY	0.1081*	0.0875	1				
(4) ESGSCORE	0.2292*	0.069	0.8820*	1			
(5) TARGETTA	-0.1511*	0.3578*	0.1856*	0.1865*	1		
(6) TARGETGROWTH	-0.0479	0.035	0.0368	0.0334	-0.1749*	1	
(7) TARGETLEVERAGE	0.0491	0.0816	0.1630*	0.1618*	0.2878*	-0.0974*	1
(8) TARGETR&D	-0.0132	-0.0467	0.1924*	0.2122*	-0.1951*	0.2281*	0.0566
(9) TARGETLIQUIDITY	0.0364	-0.0838	-0.0401	-0.0701	-0.1433*	0.03	-0.3895*
(10) TARGETROE	-0.0812	0.0321	-0.0034	0.0065	0.0115	-0.1390*	0.0105
(11) ALLCASH	0.054	-0.0695	-0.0487	-0.0581	-0.2931*	0.1035*	-0.1697*
(12) CROSSBORDER	0.0212	-0.0921	-0.0152	-0.0211	-0.1533*	0.0127	-0.0726
(13) HORIZONTAL	-0.0193	0.0089	0.0421	0.0463	0.0907	0.1128*	0.0533
(14) RUNUP	-0.4470*	0.0215	-0.0616	-0.0942	-0.0105	-0.0191	0.065

	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1							
0.1033	1						
-0.0011	0.0388	1					
0.1167	0.1955*	-0.0448	1				
-0.0476	0.0694	-0.0476	0.1022*	1			
0.0445	0.0145	-0.0001	-0.0423	-0.016	1		
-0.0219	-0.0931	0.1091	-0.0681	-0.039	-0.0418	1	

Table 3: This table shows the Pearson's correlation matrix, displaying the correlations between all variables used in the analysis.

According to Pallant (2005), correlations below -0.5 and above 0.5 denote multicollinearity, and levels that go beyond that range denote high correlation. The table shows correlation levels in between the defined range; hence all variables are included in the regression. Moreover, to deal with high levels of skewness and kurtosis, the top and bottom 2% of the outliers of continuous variables that have a minimum below zero are winsorized, and the natural logarithm of continuous variables that are positive are calculated. Subsequently, the statistic specifications for multicollinearity are tested by using the variance inflation factor

(VIF) test. All variables show VIF values below 2.00, which is below the generally perceived cut-off level of 10 (Qiao and Wu, 2020). Therefore, it is concluded that multicollinearity is not a problem in this study. Furthermore, after performing the OLS regressions, the statistic specifications for heteroskedasticity are tested by using the Breusch-Pagan test. The tests were found significant, indicating heteroskedasticity in the model. Because of this, the regressions are performed using robust standard errors.

4.2 Cross-Sectional Regression Analyses

In order to test the first hypotheses, which predict the effect of target ESG disclosure and performance on the bid premium, OLS regressions are performed, and to control for eventual variation over time and within the industry, additionally fixed-effects OLS regressions are run. It is especially important to include year fixed effects to control for variation across years as the sampling period contains the years in which the economic crisis occurred, 2007 and 2008. The regression results are presented in Table 4 and show the standard errors below each variable. The statistical significance of the results is predicated upon robust standard errors in each regression. Column 1 and 2 show the regression results for hypothesis 1a, that predicts that target ESG disclosure has a positive effect on the acquisition bid premium. Columns 3 and 4 show the regression results for hypothesis 1b, which states that target ESG performance has a positive effect on the acquisition bid premium.

The results in column 1 indicate a strong positive relationship (18.0734***) between target ESG disclosure and the bid premium. Column 2 includes year and industry fixed effects; including these effects in the regression model sharply increases the adjusted R-squared from 30.15% to 53.91%, which indicates an improved fit of the model. The results show a similar significant positive relationship (22.5764***) between ESG disclosure and the acquisition premium. In economic terms, this means that in case the target has disclosed an ESG score, the bid premium increases by 22.58% compared to if a target does not have a disclosed ESG score. In line with the findings of Crifo et al. (2015) and Choi et al. (2015), CSR performance disclosure has a significant positive effect on the valuations and hence the bid premium. The positive relationship indicates that CSR can function as a signal of firm quality and trustworthiness of their operations and improve their reputation (Fisman et al., 2006; Fombrun and Shanley, 1990). Therefore, it can reduce information asymmetry, which is valued by PE investors and reflected in higher premiums (Crifo et al., 2015; Yu et al., 2017). In line with this reasoning, the results of the analyses provide evidence that PE investors value both target CSR

disclosure and performance and accordingly pay higher premiums for socially responsible targets.

Secondly, the results in column 3 indicate a positive relationship (0.6235***) between target CSR performance and the acquisition bid premium. Column 4 again includes year and industry fixed-effects into the regression, which increases the adjusted R-squared from 50.40% to 65.98%. The coefficient slightly decreases (0.5930***), but still shows a positive significant relationship between target ESG performance and the acquisition premium. Economically, this means that if the ESG score increases by one point, the acquisition premium increases by 0.59%. The findings are in support of the findings of Gomes and Marsat (2018), who found significant evidence that the CSR performance of a target is positively associated with acquisition bid premiums, holding all else constant. An explanation for this can be the importance of CSR as a strategic asset and a potential source of competitive advantage, as suggested by the resource-based view (Qiao and Wu, 2019). CSR can be used as a new source of value creation for PE portfolio companies and therefore lead to higher takeover premiums for socially responsible targets (Crifo and Forget, 2013). Corresponding to the previous reasoning, the results of the performed analysis provides evidence that PE firms react positively to target CSR performance which is reflected in higher bid premiums.

<i>Independent Variables</i>	(1)	(2)	(3)	(4)
ESGDUMMY	18.7034*** (3.2910)	22.5764*** (3.2816)		
ESGSCORE			0.6235*** (0.8010)	0.5930*** (0.0699)
<i>Firm-specific Control Variables</i>				
TARGETTA	-4.9951*** (1.3475)	-4.9317*** (0.8093)	-4.7225*** (1.0726)	-3.9984*** (0.6656)
TARGETGROWTH	14.1586 (11.1465)	18.6483 (9.6304)	16.4931 (11.1850)	18.4354 (10.1423)
TARGETLEVERAGE	-3.2555 (4.6599)	-3.6584 (3.8843)	-4.8303 (3.7540)	-4.6543 (3.1460)
TARGETRD	-1.4799 (1.6485)	-2.8125 (1.6369)	-2.9150* (1.3857)	-3.3818* (1.4525)
TARGETLIQUIDITY	-0.8782 (0.5965)	-0.1998 (0.7187)	-0.3558 (0.5029)	0.1801 (0.5919)
TARGETROE	0.0072 (0.0518)	0.0749 (0.04514)	0.0107 (0.0463)	0.0583 (0.0406)
<i>Deal-specific Control Variables</i>				
ALLCASH	-3.3915 (5.6847)	0.7985 (4.4365)	-3.7317 (4.6609)	-1.8801 (3.6039)
CROSSBORDER	4.7446 (3.8050)	-1.8538 (3.7487)	3.6896 (3.9393)	-1.4556 (3.6398)
HORIZONTAL	-3.2564 (4.5260)	-4.4228 (4.8125)	-2.2807 (3.3939)	-4.3320 (3.7725)
RUNUP	-39.2052* (16.4140)	-57.0218*** (12.767)	-28.0256 (14.8368)	-47.7729*** (13.0718)
Constant	92.4016*** (18.3834)	56.1162** (16.8079)	77.4122*** (16.206)	77.0209*** (14.0721)
Year Fixed Effects	No	Yes	No	Yes
Industry Fixed Effects	No	Yes	No	Yes
Adjusted R-squared	0.3015	0.5391	0.504	0.6598
Observations	150	150	150	150

Table 4: This table reports the OLS and fixed effects regressions which test hypothesis 1a and 1b. The dependent variable of the model is Bid Premium calculated as the difference between the price paid per share and the pre-acquisition stock price, divided by the pre-acquisition stock price. Column 1 and 2 present the OLS regression and the fixed effects regression results for hypothesis 1a in which the effect of target ESG disclosure is tested. Column 3 and 4 present the OLS regression and the fixed effects regression results for hypothesis 1b in which the effect of target ESG performance is analyzed. The independent variables are the target ESG disclosure as measured by a dummy variable and target ESG score. The t-statistics are based on robust standard errors which are presented below each regression coefficient. The *, ** and *** stand for statistical significance at the 0.05, 0.01 and 0.001 level, respectively.

Finally, to further examine the positive relationship between CSR performance and the bid premium, the sample is split up into a sub-sample in which the target has a strong CSR performance by adding a dummy variable in which the dummy equals one when the target has a higher ESG score than the median. Subsequently, the bid premium is regressed on the dummy variable. The results are shown in Table 5; the effect of ESG disclosure on the acquisition premium remains positive and significant. The coefficient in column 1 (23.9434***) increases when compared to the effect of target CSR disclosure on the bid premium. However, the fixed effects model presented in column 2 (21.7169***) shows a coefficient that is slightly lower when comparing to the fixed effects regression results of the effect of target CSR disclosure. Nevertheless, the results are significant and show that strong target CSR performance indeed affects the bid premium, in line with the findings of Gomes and Marsat (2018).

Except for target firm size and R&D expenditures, all firm-specific control variables are insignificant. Hence, conclusive explanations about these control variables cannot be inferred from the results. However, the directions of these results show relationships between the firm-specific control variables and the dependent variable that are consistent with previous studies for some variables and inconsistent for others. Target firm size, as measured by the natural logarithm of target total assets (TARGETTA), shows a significant negative relationship with the bid premium in all regression models. This provides evidence that for larger firms, lower bid premiums are paid. This is in line with Gomes and Marsat (2018), who found a significant negative effect of target size on the bid premium. Larger target firms are associated with higher integration costs, which is reflected in a discount on the acquisition premium (Comment and Schwert, 1995). Similarly, target growth (TARGETGROWTH) has a positive coefficient, which is also in line with Gomes and Marsat (2018), who found a significant positive relationship between the average sales growth over the three years pre-acquisition.

Contrary to target growth, leverage (TARGETLEVERAGE) has a negative impact on the bid premium. This is consistent with Renneboog et al. (2007), who found that for firms with a small portion of leverage, higher premiums are paid. The unused debt capacity increases the ability to take on more debt, which is commonly done in PE. Although significant at the 5% significance level, the negative effect of R&D expenses (TARGETRD) on bid premium is in contrast with prior research. For instance, Laamanen (2007) found that target R&D has a positive effect on the acquisition premium. Investments in R&D and R&D growth rates are a signal of the company's growth outlook and can positively affect the takeover premium (Laamanen, (2007). Similarly, the negative coefficient of liquidity (TARGETLIQUIDITY) is inconsistent with Officer (2006), who found that acquisition prices of private targets with liquidity constraints are heavily discounted. Finally, in contrast with the findings of Gomes and Marsat (2018), who found a significant negative relationship between target ROE and the bid premium, the coefficient for ROE is positive.

<i>Independent Variable</i>	<i>(1)</i>	<i>(2)</i>
ESGHIGH	23.9434*** (3.5357)	21.7169*** (3.1825)
<i>Firm-specific Control Variables</i>		
TARGETTA	-3.9076** (1.1716)	-3.2280*** (0.8110)
TARGETGROWTH	5.1884 (11.3002)	8.2338 (10.0601)
TARGETLEVERAGE	0.9768 (4.4498)	0.8517 (3.7206)
TARGETRD	-1.6625 (1.4826)	-2.6687 (1.6574)
TARGETLIQUIDITY	-0.4587 (0.5670)	0.2600 (0.7262)
TARGETROE	-0.0252 (0.0503)	0.0219 (0.0481)
<i>Deal-specific Control Variables</i>		
ALLCASH	-3.5480 (4.9569)	-2.3540 (3.8150)
CROSSBORDER	2.7302 (3.7256)	-1.6234 (3.6367)
HORIZONTAL	-2.4168 (3.8213)	-4.0927 (4.2975)
RUNUP	-41.2427** (14.7390)	-61.5810*** (12.3426)
Constant	89.5688*** (16.7857)	85.6673*** (14.6911)
Year Fixed Effects	No	Yes
Industry Fixed Effects	No	Yes
Adjusted R-Squared	0.4192	0.5688
Observations	150	150

Table 5: This table reports the regular OLS and fixed effects regression results for hypothesis 1c in which a dummy variable is utilized to split the sample into deals in which the target has an ESG score above the median and vice versa. The dependent variable of the model is Bid Premium calculated as the difference between the price paid per share and the pre-acquisition stock price, divided by the pre-acquisition stock price. The t-statistics are based on robust standard errors which are presented below each regression coefficient. The *, ** and *** stand for statistical significance at the 0.05, 0.01 and 0.001 level, respectively.

The deal-specific control variables are all insignificant, except for the price runup (RUNUP). The variable for deals that were paid in cash only (CASH) has a negative coefficient. This finding is in contrast with prior literature. For instance, Slusky and Caves (1991) were the first ones to find that an all-cash M&A transaction increases the bid premium significantly. However, in PE, generally, all deals are paid all in cash as PE funds cannot give out shares, and the effect of an all-cash deal could therefore differ from general M&A literature. Similarly, in all fixed effects regressions, the coefficient for international deals (CROSSBORDER) is negative, which is also inconsistent with previous findings. Mateev and Andonov (2015) found a positive relationship between acquisition premiums and cross-border acquisitions. The variable that accounts for deals performed in the same industry (HORIZONTAL) has a negative coefficient. This is in contrast with the findings of Gomes and Marsat (2018), who find a positive relationship between intra-industry deals and the acquisition premium. Similarly, in contradiction with the findings of Schwert's (1996) and Betton et al. (2008b), who found a strong positive relation between offer premiums and runups, the variably

that indicates a runup (RUNUP) shows a significant negative coefficient. According to Schwert's (1996) markup price hypothesis, the higher the runup, the higher the premium paid to acquire the target.

The regression results for hypotheses 2a and 2b, which state that target CSR disclosure and performance in international deals have a positive effect on the acquisition premium, are shown in Table 6. To obtain these results, an interaction variable between a dummy that equals one in the case of a cross-border acquisition and ESG disclosure is added to the regressions. Subsequently, the bid premium is regressed on this interaction variable. Similar to hypotheses 1a, 1b, and 1c, OLS regressions are run, and the robust standard errors are shown below the coefficient of each variable. The regression results in column 1 show that the coefficient of the interaction term between target CSR disclosure and a cross-border deal is insignificant negative (-11.4080), and the effect of CSR disclosure is significantly positive (21.0196***). This only provides evidence that CSR disclosure in a national deal has a positive effect on the bid premium. Combined the target CSR disclosure in an international deal has a positive effect (9.6116) on the acquisition premium, however this is insignificant so no implications can be inferred. When including fixed effects in the regression (column 2), the robust standard errors almost remain the same. However, the adjusted R-squared sharply increases from 30.34% to 55.53%, which indicates an improved fit of the model. Moreover, the positive effect of ESG disclosure on the acquisition premium increases (27.3436***) and remains significant, in addition, the coefficient of the interaction term decreases (-19.8513*) and becomes significant. Therefore, the combined effect of target CSR disclosure on the bid premium in international deals is significant and positive (7.4923). This means that if targets that are located in a foreign country, disclose an ESG score, the acquisition premium increases by 7.49%. Although, this positive effect is driven by ESG disclosure of domestic targets, the result is in line with Gomes and Marsat (2018), who found supporting evidence that CSR disclosure is valued in cross-border deals and affects the bid premium. In an international study on bid premiums, they specifically find that social performance only contributes to the premium in cross-border acquisitions. This suggests that in highly uncertain cross-border deals, social performance functions to overcome cultural and regulation differences and reduce information asymmetries, which results in a positive effect on the premium. Socially responsible targets can bridge the relationship between the acquirer and stakeholders and broaden the local social network of the acquirer after the acquisition, which reduces operational uncertainty (Qiao and Wu, 2019).

<i>Independent Variables</i>	(1)	(2)	(3)	(4)
ESGDUMMY	21.0196*** (3.9312)	27.3436*** (3.7411)		
ESGSCORE			0.7367*** (0.0933)	0.7026*** (0.0700)
CROSSBORDER	11.3767 (6.7118)	9.1711 (6.5042)	17.1165** (5.9415)	11.2691* (4.9479)
ESGDUMMY*CROSSBORDER	-11.4080 (8.8185)	-19.8513* (8.8012)		
ESGSCORE*CROSS BORDER			-0.5283** (0.1818)	-0.5092*** (0.1482)
<i>Firm-specific Control Variables</i>				
TARGETTA	-5.1492*** (1.3736)	-5.3475*** (0.8162)	-4.8522*** (1.0146)	-4.1997*** (0.6310)
TARGETGROWTH	11.1175 (10.7922)	12.8435 (8.8020)	9.6128 (10.7392)	10.901 (9.5158)
TARGETLEVERAGE	-3.2733 (4.6778)	-3.2030 (3.8345)	-4.6635 (3.7060)	-4.0742 (2.9413)
TARGETRD	-1.4203 (1.6465)	-2.7187 (1.5863)	-2.7669* (1.3607)	-3.0663* (1.379)
TARGETLIQUIDITY	-0.5357 (0.6196)	0.3229 (0.7236)	0.2156 (0.5104)	0.5761 (0.5335)
TARGETROE	-0.0028 (0.0514)	0.0616 (0.0423)	-0.0145 (0.04428)	0.0360 (0.0363)
<i>Deal-specific Control Variables</i>				
ALLCASH	-3.6606 (5.6945)	0.7637 (4.4150)	-5.0854 (4.4583)	-2.8813 (3.3675)
HORIZONTAL	-3.8533 (4.6211)	-5.7384 (4.6700)	-3.4455 (3.2570)	-5.6293 (3.4583)
RUNUP	-37.6364* (16.4166)	-53.5258*** (11.6920)	-22.2954 (14.3656)	-40.7025** (12.1527)
Constant	89.9104*** (18.2104)	96.7200*** (16.9634)	69.4481*** (15.6913)	78.8538*** (14.5950)
Year Fixed Effects	No	Yes	No	Yes
Industry Fixed Effects	No	Yes	No	Yes
Adjusted R-squared	0.3034	0.5553	0.5373	0.6919
Observations	150	150	150	150

Table 6: This table reports the regular OLS and fixed effects regression results for hypothesis 2a and 2b. The dependent variable of the model is Bid Premium calculated as the difference between the price paid per share and the current stock price, divided by the current stock price. Column 1 and 2 present the OLS regression and the fixed effects regression results for hypothesis 2a in which the effect of the interaction of target ESG disclosure and a dummy for cross-border acquisitions is tested. Column 3 and 4 present the OLS regression and the fixed effects regression results for hypothesis 2b in which the effect of the interaction of target ESG disclosure and a dummy for cross-border acquisitions. The t-statistics are based on robust standard errors which are presented below the regression coefficients of each variable. The *, ** and *** denote statistical significance at the 0.05, 0.01 and 0.001 levels, respectively.

The regression results for hypothesis 2b are shown in columns 3 and 4. Column 3 shows a significant positive effect of ESG performance (0.7367***) on the acquisition premium, whereas the interaction term has a significant negative effect (-0.5283**). The direct effect of cross-border deals itself is positive and significant (17.1165**). Hence, the combined effect of target CSR performance in a cross-border deal on the bid premium is significant and positive (0.2084). In column 4, fixed effects are included in the regression, the positive effect of ESG performance on the bid premium decreases slightly but is still significantly positive (0.7026***), and the coefficient of the interaction term significantly negative (-0.5092***). The direct cross-border effect decreases but remains positive and significant (11.2691*). Combined, the total effect of target CSR performance in an international deal has a positive

effect (0.1934) on the bid premium. This means that if the ESG score of a foreign target increases by 1 point, the acquisition premium increases by 0.19%. In line with the studies by Gomes and Marsat (2018) and Qiao and Wu (2019), as explained above, the results of the performed analyses provide evidence that PE firms value both target CSR disclosure and target CSR performance in international deals, which is reflected in higher bid premiums.

The regression results for hypotheses 3a and 3b are shown in Table 7. Hypothesis 3a predicts that target CSR disclosure has a positive effect on the time it takes to complete a deal. To test this hypothesis, again, an OLS regression is performed. Column 1 shows an insignificant positive effect (0.0565) of target CSR disclosure on the days to completion. This indicates that target CSR disclosure increases the time to complete a deal. When including fixed effects in the regression, the coefficient decreases (0.0001) and remains insignificant. Besides the coefficients, the robust standard errors are also small. Furthermore, the adjusted R-squared slightly decreases from 14.76% to 14.03%. The low adjusted R-squared values imply that the model does not have much explanatory power.

<i>Independent Variables</i>	(1)	(2)	(3)	(4)
ESGDUMMY	0.0565 (0.1037)	0.0001 (0.1183)		
ESGSCORE			0.0019 (0.0020)	0.0011 (0.0025)
<i>Firm-specific Control Variables</i>				
TARGETTA	0.1397*** (0.0313)	0.1477*** (0.0333)	0.1405*** (0.0317)	0.1459*** (0.0335)
TARGETGROWTH	0.5482 (0.2841)	0.7240* (0.2806)	0.5551 (0.2847)	0.7359* (0.2841)
TARGETLEVERAGE	0.1044 (0.1210)	-0.2758 (0.1465)	0.997 (0.1217)	-0.0369 (0.1472)
TARGETRD	-0.0455 (0.0515)	-0.0594 (0.0557)	-0.0498 (0.0524)	-0.0653 (0.0566)
TARGETLIQUIDITY	0.0571* (0.0269)	0.0106 (0.0263)	0.0586* (0.0275)	0.0113 (0.0266)
TARGETROE	0.0017 (0.0014)	0.0024 (0.0017)	0.0017 (0.0014)	0.0024 (0.0017)
<i>Deal-specific Control Variables</i>				
ALLCASH	-0.1795 (0.1184)	-0.1600 (0.1293)	-0.1805 (0.1161)	-0.1587 (0.1252)
CROSSBORDER	-0.0104 (0.1145)	-0.0433 (0.1243)	-0.0136 (0.1116)	-0.0432 (0.1252)
HORIZONTAL	0.1624 (0.1172)	0.1323 (0.1468)	0.1654 (0.1164)	0.1359 (0.1440)
RUNUP	-0.0614 (0.2475)	0.0453 (0.3044)	-0.0280 (0.2534)	0.0848 (0.3138)
Constant	3.4585*** (3.3843)	3.6753*** (0.4126)	3.4137*** (0.3761)	3.5853*** (0.3764)
Year Fixed Effects	No	Yes	No	Yes
Industry Fixed Effects	No	Yes	No	Yes
Adjusted R-squared	0.1476	0.1403	0.1501	0.1417
Observations	150	150	150	150

Table 7: This table reports the regular OLS and fixed effects regression results for hypothesis 3a and 3b. The dependent variable is Time to Completion calculated by the difference between the announced date and the completed date of the deal, in days. Column 1 and 2 show OLS and the fixed effects regression for hypothesis 3a in which the effect of target ESG disclosure on the time to complete a deal is tested. Column 3 and 4 show

OLS regression and the fixed effects regression results for hypothesis 3b in which the effect of target ESG performance on the time to complete a deal is tested. The t-statistics are based on robust standard errors which are presented below each regression coefficient. The *, ** and *** denote statistical significance at the 0.05, 0.01 and 0.001 levels, respectively.

Similarly, hypothesis 3b states that target CSR performance leads to faster deal completion. Both column 3 and column 4 show an insignificant positive effect (0.0019) and (0.0011), respectively. In column 4, fixed effects are included in the regression, which again decreases the adjusted R-squared from 15.01% to 14.17%. These findings suggest that an increase in target CSR performance leads to a very small increase in the number of days it takes to complete a deal. This is in contrast with previous research, Deng et al. (2013) found a positive effect of target CSR performance on deal completion time. However, in a PE context, these findings do not seem to hold. The regressions have also been performed using the data from the unmatched sample. An overview of these regressions can be found in Appendix I-L.

5. Conclusion

5.1 Discussion

Although the literature on CSR and M&A is extensive, research on the effect of CSR on the market value of firms is limited. Various studies examine the effect of CSR performance on firm value as perceived by the stock market (Aktas et al., 2010; Cho et al., 2020; Deng et al., 2013). This study aims to contribute to the limited existing literature by empirically looking at the effect of target CSR performance on the firm value as measured by the acquisition premium. Furthermore, this paper examines this effect in a private equity context. Lastly, this paper looks at a global sample instead of a U.K. or U.S.-based sample. To examine the research question and test the predictions of the different hypotheses resulting therefrom, OLS regressions are performed on a matched sample constructed by using propensity score matching to reduce the potential effect of selection bias. The analyses are further extended by including year and industry fixed-effects models.

The hypotheses constructed in this study build on extensively researched economic theories. The findings for hypothesis 1a provide evidence that target CSR disclosure positively affects the bid premium paid by PE acquirers. Therefore, the hypothesis is accepted. This is in line with the findings of Crifo et al. (2015), who also find a positive effect of target firm CSR disclosure on a firm's valuation by PE investors. A possible explanation found in this paper is that the fact that a firm is willing to disclose this information already is a signal of the quality and trustworthiness of their operations (Fombrun and Shanley, 1990). The transparency that is accompanied by disclosing ESG performance leads to a decrease in investor information asymmetry and results in a higher premium increases firm performance (Yu, et al., 2017). Therefore, the results provide support for the signaling theory.

In the case of hypothesis 1b, the results indicate a significant positive relationship between target CSR performance and the bid premium paid by PE acquirers. Therefore, the hypothesis is again accepted. Although not based solely on a PE sample, this is in support of the study of Gomes and Marsat (2018), who also found a significant positive effect of target CSR performance on the bid premium. The results show support of the stakeholder theory and the resource-based view. Due to improved stakeholder management, CSR performance indicates higher stakeholder goodwill and lower firm risk. The reason for this is that CSR engagement reduces conflicts between various groups of stakeholders and management (Heal, 2005; Jo and Harjoto, 2011), which in turn improves financial performance. In light of the resource-based view, CSR activities can develop valuable intangible assets such as enhanced

management capabilities, company culture brand equity, innovation, and reputation (Aragon-Correa and Sharma, 2003; Vilanova et al., 2009; Wernerfelt, 1984). These assets are key determinants of a firm's competitiveness and, in turn, can improve a firm's financial performance (Orlitzky et al., 2003). The findings show that higher CSR performance is rewarded with a higher bid premium, indicating that CSR performance is indeed perceived as a source of value by PE.

To further support the findings of hypotheses 1a and 1b, the results for hypothesis 1c show that a higher level of CSR performance is associated with a stronger positive impact on the bid premium. The findings are positive and significant; hence the hypothesis is accepted. This proves that; indeed, the level of performance is an important determinant of the bid premium.

The results of hypothesis 2a are significantly positive. Although the incremental effect of CSR disclosure in a cross-border deal is negative, the overall effect is significant and positive hence the hypothesis is accepted. Therefore, this study concludes that foreign target CSR disclosure in international deals is positively valued by PE investors. This is because, in cross-border deals, the information asymmetry between target and acquirer increases, and the signaling function of CSR disclosure becomes more important. In this highly asymmetric context, a disclosed CSR score can send out positive signals about a target's business operations and the risks the firm faces, which results in a higher premium (Choi et al., 2015). Therefore, this result provides evidence for the signaling theory.

In line with this finding, the results for hypothesis 2b also show a significant and positive relationship between target CSR performance and the bid premium paid in international deals. Therefore, again the hypothesis is accepted. The explanation for this is twofold. On the one hand, CSR resolves conflicts between managers and stakeholders, accordingly especially social performance is found to be valued by investors, as it functions to overcome cultural and regulation differences, in line with the stakeholder maximization view (Gomes and Marsat, 2018). On the other hand, CSR is a strategic asset that can help establish a reputation, attract new talents and broaden the local social network of the acquirer, which reduces operational uncertainty and increases the potential of sustained competitive advantage. In support of the resource-based view, CSR is found to be a source of value and result in a higher acquisition premium (Qiao and Wu, 2019).

The OLS regression results for hypotheses 3a and 3b find no evidence that disclosure and the level of target CSR negatively affect the time to complete a deal. The findings even show that there is a small, positive relationship between target CSR and deal completion time.

Therefore, both hypotheses 3a and 3b are rejected. The insignificant findings suggest that target CSR disclosure and performance do not impact the days it takes to complete a deal in PE transactions. This is inconsistent with the findings of Deng et al. (2013), who found significant results. These results do not support the stakeholder theory and the signaling theory. A possible explanation could be that in PE, the acquirer and the target firm will work closely together; hence the trust in each other, as suggested by Donaldson and Preston (1995), is already there and does not additionally impact the acquisition process.

This paper found significant results for the positive relationship between target CSR disclosure and the acquisition premium paid in PE deals. Moreover, it is found that this relationship holds in a cross-border context. These findings support the signaling theory, which argues that CSR can function as a signal of firm quality and performance and therefore can overcome information asymmetries between targets and acquirers that remain although thorough due diligence is performed. In addition, this study has found a significant positive relationship between the level of target CSR performance and the acquisition premium paid by PE investors. This supports the stakeholder maximization theory and the resource-based view. The former states that CSR can be value-enhancing by incorporating the interests of all stakeholders involved in the firm. The latter views CSR as a valuable intangible resource that can be used as a strategic asset and lead to a sustained competitive advantage.

The implications of the findings of this paper are twofold. For CSR firms, the findings have managerial implications as enhancing CSR performance can increase stakeholder satisfaction and positively impact shareholder gains through increased potential acquisition premiums. Accordingly, this study shows that CSR performance positively impacts the bid premium. Secondly, the findings also extend the knowledge for PE investors, CSR performance can indicate trustworthiness and function as a positive signal for lower firm-specific risk and higher stakeholder goodwill; therefore, it can be used as a useful tool for investment decision-making. Moreover, PE firms should value CSR by including it in the valuation analyses as CSR is often an intangible but valuable resource and the results of this study show that CSR performance is rewarded with higher premiums.

5.2 Limitations

This study examines the relationship between target CSR performance and PE acquisition premiums. Although the results show a positive effect between these variables, there are several limitations that should be contemplated.

The availability of PE data is an important limitation to consider. As the name suggests, PE firms and their portfolio companies are exempt from publicly disclosing performance data. Therefore, the size of the sample of 422 PE deals, of which only 211 have an ESG score available, is relatively small. Moreover, due to the limited financial data of the (private) companies, the sample is even further reduced when performing the regressions. Therefore, the generalizability of the findings may be limited.

Another important limitation of this study is the manner in which PE data is retrieved. Because the ESG scores are mainly disclosed by public firms, retrieving PE deal data on companies that have a disclosed ESG score could (almost) only come from the public to private transactions. By taking firms private, generally, a premium of 15 to 50 percent is paid (Renneboog et al., 2007). Therefore, the results can be biased upward and could have enhanced the positive effects found in this study.

Lastly, alongside the Thomson Reuters ASSET4 ESG database, there are two other leading ESG databases, the IVA and the KLD database. Dofleitner et al. (2015) show that the different databases utilize diverse measurement techniques and therefore result in other outcomes. Specifically, the ASSET4 utilizes a continuous scale from 1 to 100 to measure ESG performance, while IVA uses a discontinuous scale of seven points, and the KLD employs a binary point structure in which the points add up to a total score. Moreover, the databases differ concerning the years included, the amount of firms examined, the amount of categories used, and the countries covered. Therefore, the findings of this study are not readily comparable to the findings of studies using other databases. To conclude, the overall ESG score is biased towards firms that publicly report information on the categories that are included in the rating, which are often larger and more resourceful firms that have the capabilities to disclose this information. This could result in a low score for small socially responsible firms and a high score for large socially irresponsible firms that have the capability to invest in publicly disclosing particular information. Despite these limitations, this paper offers insightful findings on how to target firm CSR influences acquisition premiums in PE.

5.3 Further Research

This study uses the Thomson ASSET4 database, while previous studies use either the IVA database or the KLD ESG database. As mentioned in the limitations section, the type of CSR measure can lead to different outcomes. Hence, further research could accommodate a meta-analysis of the relationship between CSR and takeover premiums based on the different

databases to provide a better understanding of this relationship and to be able to compare the different measures.

While this paper focuses on the total CSR score, further research could analyze the effect of the individual CSR pillars to disentangle the differential influences of the dimensions on the premiums. This could provide information on the underlying motives of how target CSR affects the investment decisions and, in turn, the acquisition price.

Moreover, this study is based on three economic theories, which are all confirmed. However, the different effects of these theories on the bid premium remains unclear. Further research could try to differentiate between the theories to provide a more thorough understanding of how these theories may underpin this new field of investing in CSR companies and how they affect the acquisition premium.

Finally, this paper looks at the relation between target CSR performance and the bid premium in a PE context. However, as in any acquisition, there are two parties involved. Further research could be aimed at considering both parties and provide information on the role certain types of PE funds play, and examine what fund-specific characteristics influence the valuation of CSR performance.

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Appendices

Appendix A

Pillar	Categories	Indicators Used for Rating	Weight (%)
Environmental	Emission	22	12
	Innovation	19	11
	Resource Use	20	11
Social	Community	14	8
	Human Rights	8	4.5
	Product Responsibility	12	7
	Workforce	29	16
Governance	CSR Strategy	8	4.5
	Management	34	19
	Shareholders	12	7
Total		178	100

Table 7: This table shows the three pillars of the ESG scores and their indicators on which the total ESG score is measured and calculated.

Appendix B

Search Criteria

Request	Description	Observations
Country	United Kingdom & United States	438,498
Current Deal Status	Completed-Confirmed	490,514
Sub-Deal Type	LBO, Public Takeover by Private Equity	3,106
Deal Financing	Private Equity	2,630
Bid premium	Data available in Zephyr	900
Matched sample	Treated and control group	422
Total		422

Table 8: Data retrieval process.

Appendix C

Panel A: Distribution by industry

Target Industry	Freq	Percentage (%)	Acquirer Industry	Freq	Percentage (%)
Accommodation	26	6.16	Accommodation	9	2.13
Administrative & Support Services	7	1.66	Administrative & Support Services	5	1.18
Agriculture	2	0.47	Construction	2	0.47
Arts	4	0.95	Financial and Insurance Services	161	38.15
Construction	5	1.18	Health & Social Work	2	0.47
Education	2	0.47	Information & Communication	14	3.32
Electricity	12	2.84	Mining	2	0.47
Financial and Insurance Services	21	4.98	Manufacturing	21	4.98
Health & Social Work	16	3.79	Other Services	4	0.95
Information & Communication	80	18.96	Real Estate	5	1.18
Manufacturing	110	26.07	Scientific Services	8	1.9
Mining	4	0.95	Water Supply	3	0.71
Other Services	13	3.08	Wholesale Trade	20	4.74
Real Estate	2	0.47	Unknown	166	39.34
Scientific Services	31	7.35	Total	422	100
Transportation & Storage	11	2.61			
Water Supply	4	0.95			
Wholesale Trade	72	17.06			
Total	422	100			

Panel B: Distribution by Year

Year	Freq	Percentage (%)
2002	3	0.71
2003	16	3.79
2004	15	3.55
2005	24	5.69
2006	29	6.87
2007	48	11.37
2008	12	2.84
2009	2	0.47
2010	23	5.45
2011	32	7.58
2012	23	5.45
2013	30	7.11
2014	18	4.27
2015	23	5.45
2016	26	6.16
2017	31	7.35
2018	21	4.98
2019	32	7.58
2020	14	3.32
Total	422	100

Panel C: Distribution by Target Country

Country	Freq	Percentage (%)
Great Britain	37	8.77
United States	385	91.23
Total	422	100

Panel D: Distribution by Acquirer Country

Country	Freq	Percentage (%)
Australia	3	0.72
Bermuda	2	0.48
Canada	4	0.24
Cayman Islands	13	0.25
Germany	1	0.49
Great Britain	41	10.29
Ireland	2	0.49
Qatar	1	0.25
United States	347	82.84
Unknown	8	3.95
Total	422	100

Table 9: Sample distribution. This table shows the sample distribution by industry, year the deal is completed and country. The sample includes 422 deals over the period 2002 - 2020. Furthermore, it consists of targets from the U.S. and the U.K. from 18 different industries, and acquirers from nine different countries and 13 different industries.

Appendix D

Variable	Obs.	Mean	Median	SD	Min	Max
Treated	211	0.4673	0.4762	0.2178	0.0654	0.9549
Control	211	0.3797	0.3748	0.1535	0.0654	0.9041
Difference		0.0876	0.1014	0.0642	0.0000	0.0509

Table 10: This table shows the distribution of the propensity scores of the treated and the matched control group. The matching is performed by using the nearest neighbor matching technique without replacement. Targets with an ESG performance score are in the treated group and targets without an ESG performance score are in the matched control group. It must be noted that the number of targets in the treated group has decreased from 284 to 211, as 73 targets could not be matched.

Appendix E

Variable	Mean		Bias (%)	T-test	
	Treated	Control		T-stat	P-values
TARGETTA	7.1246	6.5251	37.7	3.87	0
TARGETEMPLOYEES	7.96	7.6805	16.2	1.67	0.096
TARGETNETINC	56.6	31.773	19.1	1.96	0.05
TARGETGROWTH	0.0999	0.0797	7.3	0.75	0.451
TARGETROE	8.7836	9.0059	-0.7	-0.07	0.945
L1ASSETS	0.0104	0.0120	-4.2	-0.43	0.664
L2ASSETS	0.0091	0.0078	3.2	0.33	0.745
L1TURNOVER	0.0153	0.0135	3	0.31	0.755
L2TURNOVER	0.0106	0.0124	-2.9	-0.3	0.763
INDUSTRY	7.9431	8.3744	-9.7	-1	0.319

Table 11: This table shows the statistical balance test of all the variables used for propensity score matching. Treated indicates that a target has disclosed an ESG performance score and the control group includes matched targets without a disclosed ESG performance score. The p-values illustrate whether the variables of the treated and the control group are statistically different.

Appendix F

Variable		Mean		Bias (%)	Bias Reduction (%)	T-test	
		Treated	Control			T-Stat	P-values
TARGET TA	Unmatched	7.1246	6.5251	37.7		3.87	0
	Matched	7.1246	6.8991	17.6	53.3	0.16	0.876
TARGET EMPLOYEES	Unmatched	7.96	7.6805	16.2		1.67	0.096
	Matched	7.96	7.7608	14.3	11.7	0.5	0.617
TARGET NET INCOME	Unmatched	56.6	31.773	19.1		1.96	0.05
	Matched	56.6	52.872	2.7	85.9	0.5	0.928
TARGET MEAN GROWTH	Unmatched	0.09993	0.07967	7.3		0.75	0.051
	Matched	0.09993	0.08877	3.3	54.8	0.43	0.658
TARGET ROE	Unmatched	8.7836	9.0059	-0.7		0.21	0.045
	Matched	8.7836	8.5614	0	0	-0.07	0.96
L1 ASSETS	Unmatched	0.0104	0.01197	-4.2		-0.43	0.164
	Matched	0.0104	0.01083	-3.1	26.2	-1.6	0.131
L2 ASSETS	Unmatched	0.00914	0.00778	3.2		0.33	0.012
	Matched	0.00914	0.00869	2.4	25	0.01	0.937
L1 TURNOVER	Unmatched	0.01534	0.01353	3		0.31	0.155
	Matched	0.01534	0.01611	2.8	6.4	0.05	0.928
L2 TURNOVER	Unmatched	0.01064	0.01241	-2.9		-2.15	0.031
	Matched	0.01064	0.01132	-1.3	55.2	-0.3	0.763
INDUSTRY	Unmatched	7.9431	8.3744	-9.7		-1	0.019
	Matched	7.9431	7.865	2.1	78.4	0.32	0.633
Sample	Pseudo R-squared		Likelihood Chi-square		Prob > Chi-square		Mean Bias
Unmatched			22.37		0.0		10.4
Matched			6.28		1.0		5.0

Table 12: This table shows the statistical balance test of all the variables used for propensity score matching. Treated indicates that a target has disclosed an ESG performance score and the control group includes matched targets without a disclosed ESG performance score. The p-values illustrate whether the variables of the treated and the control group are statistically different.

Appendix G

	Full sample		Target score above median	
	Mean	Median	Mean	Median
BIDPREMIUM	21.4501***	14.4735***	31.3645***	25.61692***
DAYS	4.5194***	4.5433	4.5814	4.559
Observations	422		109	

Table 13: This table reports the mean and median for the main dependent variables, the bid premium and the number of days to complete a deal. The mean and median are shown for the full sample (n=422) as well as for the subsample in which the target has an ESG score above the median. The mean test of differences is based on a two-sample t test and the median test of differences is based on Wilcoxon equality of medians test. The *, ** and *** denote statistical significance at the 0.05, 0.01 and 0.001 levels, respectively.

Appendix H

	Full sample		Target score above median	
	Mean	Median	Mean	Median
BIDPREMIUM	21.4501***	14.4735***	31.3645***	25.61692***
DAYS	4.5194***	4.5433	4.5814	4.559
Observations	422		109	

Table 14: This table reports the mean and median for the main dependent variables, the bidpremium and the number of days to complete a deal. The mean and median are shown for the full sample (n=422) as well as for the subsample in which the target has an ESG score above the median. The mean test of differences is based on a two-sample t test and the median test of differences is based on Wilcoxon equality of medians test. The *, ** and *** denote statistical significance at the 0.05, 0.01 and 0.001 levels, respectively.

Appendix I

Independent Variables	1	2	3	4
ESGDUMMY	16.3880*** (3.3285)	20.0318*** (3.6081)		
ESGSCORE			0.5307 (0.0785)	0.5534 (0.0784)
<i>Firm-specific Control Variables</i>				
TARGETTA	-3.9239*** (1.0953)	-4.1496*** (0.9503)	-3.8492*** (0.8950)	-3.6859*** (0.7736)
TARGETGROWTH	6.2750 (5.9334)	7.9519 (6.0363)	6.4171 (5.7875)	8.6289 (5.6563)
TARGETLEVERAGE	-3.0691 (3.3669)	-1.8229 (3.5312)	-4.3315 (2.9874)	-2.9791 (3.0110)
TARGETRD	-0.1057 (1.2467)	-0.5521 (1.4182)	-0.9466 (1.1361)	-1.1514 (1.2607)
TARGETLIQUIDITY	-1.2056* (0.4692)	-0.8542 (0.5310)	-1.0859* (0.4209)	-0.7671 (0.4840)
TARGETROE	-0.0339 (0.0269)	-0.0218 (0.0247)	-0.0445 (0.0252)	-0.0385 (0.0232)
<i>Deal-specific Control Variables</i>				
ALLCASH	-1.8015 (4.3575)	0.1162 (4.1594)	-1.8388 (3.7256)	-1.0562 (3.5287)
CROSSBORDER	5.5980 (3.2903)	1.9291 (3.5442)	4.3160 (3.3521)	1.4024 (3.4422)
HORIZONTAL	-3.9573 (3.6518)	-3.0185 (4.2747)	-3.3804 (2.9222)	-2.61835 (3.4166)
RUNUP	-37.8529** (12.1931)	-42.5978*** (12.0233)	-29.4904* (11.3637)	-35.0379** (11.7004)
Constant	83.5430*** (15.0739)	82.0165*** (15.6276)	74.0099*** (14.2335)	76.7721*** (14.3149)
Year Fixed Effects	No	Yes	No	Yes
Industry Fixed Effects	No	Yes	No	Yes
Adjusted R-squared	0.2976	0.3486	0.4368	0.4704
Observations	209	209	209	209

Table 15: This table reports the OLS and fixed effects regressions which test hypothesis 1a and 1b in the unmatched sample. The dependent variable of the model is Bid Premium calculated as the difference between the price paid per share and the pre-acquisition stock price, divided by the pre-acquisition stock price. Column 1 and 2 present the OLS regression and the fixed effects regression results for hypothesis 1a in which the effect of target ESG disclosure is tested. Column 3 and 4 present the OLS regression and the fixed effects regression results for hypothesis 1b in which the effect of target ESG performance is analyzed. The independent variables are the target ESG disclosure as measured by a dummy variable and target ESG score. The t-statistics are based on robust standard errors which are presented below each regression coefficient. The *, ** and *** stand for statistical significance at the 0.05, 0.01 and 0.001 level, respectively.

Appendix J

<i>Independent Variables</i>	<i>1</i>	<i>2</i>
ESGHIGH	18.2803*** (3.3922)	19.2700** (3.3605)
<i>Firm-specific Control Variables</i>		
TARGETTA	-2.6382** (0.9273)	-2.4437** (0.83204)
TARGETGROWTH	5.5716 (5.6146)	8.1184 (5.4640)
TARGETLEVERAGE	-1.6922 (3.4824)	-0.1590 (3.4106)
TARGETRD	-0.2873 (1.2455)	-0.2179 (1.3600)
TARGETLIQUIDITY	-0.8996* (0.4496)	-0.5744 (0.5032)
TARGETROE	-0.0311 (0.0266)	-0.0176 (0.0247)
<i>Deal-specific Control Variables</i>		
ALLCASH	-4.0263 (4.2227)	-3.7630 (3.9862)
CROSSBORDER	3.2084 (3.2970)	-0.0173 (3.5316)
HORIZONTAL	-3.3911 (3.5145)	-2.6951 (4.1392)
RUNUP	-35.9616** (12.0359)	-42.0521*** (12.1659)
Constant	76.0736*** (15.3806)	54.9886*** (14.8519)
Year Fixed Effects	No	Yes
Industry Fixed Effects	No	Yes
Adjusted R-squared	0.3393	0.3733
Observations	209	209

Table 16: This table reports the regular OLS and fixed effects regression results of the unmatched sample for hypothesis 1c in which a dummy variable is utilized to split the sample into deals in which the target has an ESG score above the median and vice versa. The dependent variable of the model is Bid Premium calculated as the difference between the price paid per share and the pre-acquisition stock price, divided by the pre-acquisition stock price. The t-statistics are based on robust standard errors which are presented below each regression coefficient. The *, ** and *** stand for statistical significance at the 0.05, 0.01 and 0.001 level, respectively.

Appendix K

<i>Independent Variables</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
ESGDUMMY	17.7325*** (3.867)	22.2049*** (4.3685)		
ESGSCORE			0.6285 (0.0902)	0.6538 (0.087)
CROSSBORDER	8.6444 (5.2337)	6.2018 (6.0754)	12.7149*** (4.8487)	9.882 (5.1048)
ESGDUMMY*CROSSBORDER	-6.2317 (7.0663)	-9.1253 (8.7048)		
ESGSCORE*CROSSBORDER			-0.3859 (0.1387)	-0.3991 (0.1485)
<i>Firm-specific Control Variables</i>				
TARGETTA	-4.0889*** (1.1366)	-4.4278*** (1.0068)	-4.2136*** (0.8967)	-4.0887*** (0.7771)
TARGETGROWTH	5.4369 (5.8955)	6.4127 (6.0827)	4.388 (5.5498)	6.0613 (5.3838)
TARGETLEVERAGE	-3.1864 (3.3667)	-2.0797 (3.584)	-4.5222 (2.9394)	-3.3474 (3.0537)
TARGETRD	-0.201 (1.2529)	-0.7605 (1.4524)	-1.2859 (1.1351)	-1.5764 (1.2587)
TARGETLIQUIDITY	-1.0688* (0.4722)	-0.7025 (0.5497)	-0.6982 (0.4145)	-0.4586 (0.5008)
TARGETROE	-0.0361 (0.0266)	-0.0246 (0.025)	-0.0514* (0.02479)	-0.0451 (0.0236)
<i>Deal-specific Control Variables</i>				
ALLCASH	-1.6984 (4.3195)	0.4971 (4.1165)	-2.0253 (3.5619)	-0.9764 (3.4114)
HORIZONTAL	-4.0603 (3.6618)	-3.3632 (4.3004)	-3.5133 (2.7721)	-3.2159 (3.2464)
RUNUP	-37.0549** (12.2479)	-41.3864 (11.8479)	-26.0718* (11.2393)	-31.5004*** (11.3438)
Constant	82.9439*** (15.0756)	81.4653*** (15.6194)	70.7842*** (14.1988)	69.894*** (13.7812)
Year Fixed Effects	No	Yes	No	Yes
Industry Fixed Effects	No	Yes	No	Yes
Adjusted R-squared	0.2963	0.3497	0.4568	0.4933
Observations	209	209	209	209

Table 17: This table reports the regular OLS and fixed effects regression results for hypothesis 2a and 2b in the unmatched sample. The dependent variable of the model is Bid Premium calculated as the difference between the price paid per share and the current stock price, divided by the current stock price. Column 1 and 2 present the OLS regression and the fixed effects regression results for hypothesis 1a in which the effect of the interaction of target ESG disclosure and a dummy for cross-border acquisitions is tested. Column 3 and 4 present the OLS regression and the fixed effects regression results for hypothesis 1b in which the effect of the interaction of target ESG disclosure and a dummy for cross-border acquisitions. The t-statistics are based on robust standard errors which are presented below the regression coefficients of each variable. The *, ** and *** denote statistical significance at the 0.05, 0.01 and 0.001 levels, respectively.

Appendix L

<i>Independent Variables</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
ESGDUMMY	0.0417 (0.0836)	0.011 (0.0942)		
ESGSCORE			0.0015 (0.0016)	0.0014 (0.0018)
<i>Firm-specific Control Variables</i>				
TARGETTA	0.1044*** (0.028)	0.1024*** (0.0302)	0.1038*** (0.0279)	0.0986** (0.0298)
TARGETGROWTH	0.1264 (0.2093)	0.1495 (0.2457)	0.1264 (0.2085)	0.1507 (0.2461)
TARGETLEVERAGE	0.1697 (0.0984)	0.0834 (0.1032)	0.1654 (0.0987)	0.0754 (0.1028)
TARGETRD	-0.0716 (0.0419)	-0.0902 (0.048)	-0.0745 (0.0423)	-0.0959* (0.0484)
TARGETLIQUIDITY	0.0663** (0.0203)	0.0389* (0.0172)	0.0666** (0.0204)	0.039* (0.0173)
TARGETROE	0.0012 (0.0008)	0.001 (0.0009)	0.0012 (0.0008)	0.0009 (0.0009)
<i>Deal-specific Control Variables</i>				
ALLCASH	-0.2679 (0.102)	-0.2742 (0.1063)	-0.2677** (0.1006)	-0.2718* (0.1045)
CROSSBORDER	-0.0142 (0.1003)	-0.01087 (0.1025)	-0.0175 (0.099)	-0.0098 (0.1029)
HORIZONTAL	0.155 (0.1031)	0.1266 (0.1208)	0.1567 (0.1032)	0.1283 (0.1196)
RUNUP	-0.0523 (0.1493)	0.1522 (0.1911)	-0.0301 (0.1493)	0.1869 (0.1892)
Constant	3.7823*** (0.2933)	3.6864*** (0.3806)	3.7595*** (0.2978)	3.6921*** (0.3796)
Year Fixed Effects	No	Yes	No	Yes
Industry Fixed Effects	No	Yes	No	Yes
Adjusted R-squared	0.1677	0.1979	0.1695	.2002
Observations	209	209	209	209

Table 18: This table reports the regular OLS and fixed effects regression results for hypothesis 3a and 3b in the unmatched sample. The dependent variable is time to completion calculated by the difference between the announced date and the completed date of the deal, in days. Column 1 and 2 show OLS and the fixed effects regression for hypothesis 3a in which the effect of target ESG disclosure on the time to complete a deal is tested. Column 3 and 4 show OLS regression and the fixed effects regression results for hypothesis 3b in which the effect of target ESG performance on the time to complete a deal is tested. The t-statistics are based on robust standard errors which are presented below each regression coefficient. The *, ** and *** denote statistical significance at the 0.05, 0.01 and 0.001 levels, respectively.