The Effect of CSR Engagement on Financial Distress Risk in Emerging Markets

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A Cross-Country Analysis on the Role of
Economic Development and Culture

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Dissertation written under the supervision of Professor Ricardo Reis

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Abstract

This thesis investigates the impact of firm engagement in Corporate Social Responsibility (CSR) on a company's financial distress risk in emerging markets in South America, Asia & Europe. I use Thomson Reuters Environmental, Social and Governance (ESG) – score as a proxy for CSR-performance, Gross National Product (GNP) per Capita as a proxy for economic development as well as three of Hofstede's (1980) cultural dimensions to capture cultural differences to investigate the effect of ESG-performance using two financial distress prediction models: Altman's Z-score and Ohlson's O-score. By analyzing 8301 panel observations from 20 emerging markets countries, I find a significantly weaker effect of CSR-performance on financial distress risk in all emerging markets countries when compared to S&P 500 companies. Further, I find that economic development influences the relationship between economic development and financial distress risk. Lastly, Long-Term Orientation and Power Distance show moderating effects on the relationship between CSR-performance and financial distress risk, Individualism leverages it. My findings are robust to variation in time, industry, and region as well as reverse causality and endogeneity and jointly support Freeman's (1984) hypothesis of the benefits of a strong firm-stakeholder relationship.

Key Words: Financial Distress Risk, Corporate Social Responsibility, Emerging Markets, Culture, Economic Development

Resumo

Esta tese investiga o impacto do envolvimento firme na Responsabilidade Social Empresarial (RSE) sobre o risco de dificuldades financeiras de uma empresa nos mercados emergentes da América do Sul, Ásia e Europa. Utilizo Thomson Reuters Environmental, Social and Governance (ESG) - pontuação como proxy para o desempenho da RSE, um Produto Nacional Bruto (PNB) per Capita dos países como proxy para o desenvolvimento económico, bem como três das dimensões culturais de Hofstede (1980) para captar as diferenças culturais para investigar o efeito do desempenho da ESG utilizando dois modelos de previsão de dificuldades financeiras: Altman's Z-score e Ohlson's O-score. Ao analisar 8301 observações do painel de 20 países de mercados emergentes, encontro um efeito significativamente mais fraco do desempenho CSR sobre o risco de angústia financeira em todos os países de mercados emergentes quando comparado com as empresas S&P 500. Além disso, o desenvolvimento económico influencia a relação entre o desenvolvimento económico e o risco de crise financeira. Por último, a orientação a longo prazo e a distância do poder mostram efeitos moderadores na relação entre o desempenho da RSE e o risco financeiro de angústia, o individualismo aproveita-a. As minhas conclusões são robustas à variação no tempo, indústria e país, bem como à causalidade inversa e endogeneidade, e apoiam conjuntamente a hipótese de Freeman (1984) dos benefícios de uma forte relação empresa-stakeholder.

Palavras-chave: Risco de Angústia Financeira, Responsabilidade Social das Empresas, Mercados Emergentes, Cultura, Desenvolvimento Económico

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Abbrevations

CFP	Corporate Financial Performance
CSR	Corporate Social Responsibility
DOM	Domestic Firms
ESG	Environmental, Social, Governance Performance
FDR	Financial Distress Risk
GNP	Gross National Product
IFE	Industry fixed effects
INT	International Firms
MDA	Multivariate Discriminant Analysis
NGO	Non-Governmental Organizations
NPV	Net Present Value
RFE	Regional Fixed Effects
WBCSD	World Business Council for Sustainable Development
YFE	Year Fixed Effects
2SLS	Two Stage Least Square Regression

1. Introduction

The world we used to know is changing, especially the business world. Previously, it was a firm's utmost purpose to maximize revenue, profit, and future cash flow and therefore to maximize shareholder gains. However, against the backdrop of increasing concerns regarding climate change, societal changes, demographic changes, or shifts to renewal energy sources, it is questionable whether firms should still follow the path of individual profit maximization.

Nowadays, following these concerns, but also due to corporate governance trust issues following recent financial crises, society, and investors in the western world demand firms to go beyond financial profitability; they also request that firms are more responsible in allocating their abundant resources across all their stakeholders. Increasingly, firms should not only produce goods or services for their customers, but also should take on the inherent responsibility of their actions inside the society. This means that companies should not only be financially sustainable but must extend their sustainability dimensions from initially only one pillar, viz financial sustainability, to four pillars: financial sustainability, environmental sustainability, social sustainability, and governance sustainability. While previously, financial sustainability and corporate sustainability were found to be contradicting goals, this understanding turned, and companies now understand how important the integrative sustainability of all four pillars is. As William Clay Ford Jr., great-grandson of Henry Ford and executive chairman of the Ford Motor Company in 2017 summarized:

"Creating a strong business and building a better world are not conflicting goals – they are both essential ingredients for long-term success".

Given the increased understanding of the importance of corporate social responsibility, henceforth referred to as CSR, the topic has experienced a tremendous surge in interest, awareness, and relevance in the western world. It is now considered that more than 35 trillion US\$ in total financial assets under management can be attained to sustainable financial assets and that more than 1 trillion \$US of ESG related trading products are available to retail investors (GSIA, 2021).

But is doing good benefitting a firm? And if so, how does doing good benefit a firm? Currently, two contrary theories exist that discuss CSR's influence on firms. First, Friedman's (1970) shareholder theory, stating that the only purpose of a firm is maximizing shareholder wealth; thus, companies who participate in CSR face a significant competitive disadvantage. And second, Freeman's stakeholder theory (1984) which stresses the uttermost importance of the

interdependence of the relationships of all stakeholders of the firm: investors, customers, suppliers, employees, governments, communities, etc.; A firm should create value for all stakeholders not only to the firm's owners, which indicates that engaging in CSR should be beneficial to a firm (Freeman, 1984). In the context of these two theories, extensive research has been conducted to test the effects of CSR engagement in practice. Most of the existing research attempts to detangle the relationship between CSR engagement and corporate financial performance in the US and predominantly supports Freeman's (1984) theory. While this trend is true for both, US and non-US markets, some negative relationships were found as well; thus, the literature is not entirely unified in determining the direction of the relationship.

On the other side, research on the relationship between financial distress risk, henceforth FDR, and CSR is not as prevalent. Nevertheless, most conducted studies found a negative relationship between these two (e.g., Boubaker et al., 2020; Chen et al., 2018; Wu et al., 2018; Shahab et al., 2019; Al-Hadi et al; 2019). However, most of the existing studies focus on established economies, mostly the US (e.g., Ullman, 1985; Di Giuli & Kostovetsky, 2014; Krueger, 2015, Boubaker; 2020), research in emerging markets is limited. To my best knowledge, Chen et al. (2018); Wu et al. (2018); Shahab et al. (2019), and Khana et al. (2021) are the only studies covering the emerging markets regions. However, most studies lack a broad confirmation of international research.

Therefore, it is not uniformly determinable whether the effect of CSR engagement is comparable between countries. This is also because only 55% of explainable CSR country variance can be explained by firm and industry characteristics; 35% of the variation can be traced back to country specifics (Ioannou & Serafim, 2012). Especially the prevalence and magnitude of a country's cultural values (Waldman et al., 2006) economic development, and other country-specific variables are highly relevant (Dou et al., 2015).

This study aims to enlarge the existing literature by investigating whether there are differences in the effect of CSR engagement on FDR of companies between countries in emerging markets. Specifically, I investigate whether the status of economic development of a country or cultural differences influences the ESG impact. In this work, I conduct several OLS regressions on 8301 firm-year observations in four different regions: USA, South America, Asia, and Europe. First, I find a general positive association between CSR-engagement and FDR, indicating that CSR-engagement increases a company's risk to fall into financial distress. However, I find a significantly weaker effect of CSR engagement on the FDR of companies in all emerging markets regions: Asia, South America, and Europe, when compared to US observations. Asia

shows the smallest difference, followed by South America. Europe shows the weakest effect compared to the US. Moreover, I find that a market's status of economic development indeed matters and finally identify a significantly weaker relationship between CSR performance and FDR in lower developed countries. For culture, I find that long-term orientation and power distance show moderating effects on the relationship between CSR-performance and financial distress risk, individualism leverages it. My findings are robust to variation in time, industry, region, reverse causality, and endogeneity.

The rest of this work is organized as follows: Section 2 outlines the current state of research in this field and develops the hypothesis. Section 3 outlines the sample composition, the regression variables, and the respective regression models. Sector 4 discusses all relevant results and section 5 the conducted robustness checks. Section 6 concludes.

2. Literature Review and Hypothesis Development

2.1. Corporate Social Responsibility

2.1.1. Emergence and Measurement of Corporate Social Responsibility

CSR has been there for a long time and can be traced back over several centuries (Carroll, 2008). Some authors even argue that CSR was already emerging in the roman empire, where social enterprises, like asylums, hospitals, and orphan homes were created to support the poor (Chaffee, 2017). However, the importance of CSR and its current shape emerged much later in time. Especially Howard Bowen (1953) is referred to be one of the first researchers investigating the responsibility of corporations. He claimed that large corporations which had a big impact on society, through their concentrated power, had to include considerations of their power and impact into corporate decision making and created a definition of social responsibilities in business: "the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society" (Bowen, 1953, p.6).

After this initial research, it took quite some time until CSR began earning relevance. During the 1970s and 1980s especially, CSR awareness increased, as evidenced by avalanching organizational claims to care for "environmental pollution, employment discrimination, consumer abuses, employee health and safety, quality of work life, deterioration of urban life, and questionable / abusiveness practices of multinational corporations" (Carroll, 2008, p.12). Globalization also contributed to this phenomenon, as it led to increased concerns regarding customer awareness, visibility, and increased stakeholder involvement (Carroll, 2015). This development continued and accelerated during the 1990s. Caroll (1991) summarized the, back in the time, four-part definition of CSR and merged it into Carroll's pyramid of CSR.

The dimensions of the pyramid are divided up into four distinct levels of responsibility: economic, legal, ethical, and philanthropical. Most importantly, a firm's basic responsibility is to fulfill its economic responsibility, specifically to be profitable. This responsibility is based on a capitalistic economic system where investors can expect appropriate returns on their investments and are required by society. Building up on that, three additional non-financial responsibilities are added as layers in the pyramid which require increased action by businesses to fulfill: legal responsibilities, ethical responsibilities, and philanthropic responsibilities.

Be a good
corporate citizen   Desired by society

Philanthropic

Do what is fair and
avoid harm   Ethical   Expected by society

Obey laws &
regulations   Legal Responsibilities   Required by society

Be profitable   Economic Responsibilities   Required by society

Legal responsibilities are, like economic responsibilities, required by society and describe corporate obligations to fulfill and comply with existing law and regulations. Complying with existing laws and regulations can rather be assessed as passive engagement in CSR. Ethical responsibilities exceed the compliance of laws and regulations by increasing the corporate responsibility level compared to legal requirements and do what is just and fair to eventually circumvent harm (Carroll, 1999). Finally, philanthropic responsibilities are not expected but desired by society and include every action in which a business aims to be a good corporate citizen or believes that pursuing philanthropical actions are just the righteous thing to do (Carroll, 2016). This pyramid reflects the complexity and ambiguity surrounding CSR and conveys that it was quite challenging to define what the righteous thing specifically implies. Along with McWilliams & Siegel (2001), Dhaliwal et al. (2011), and others, I define CSR as "instances where the company goes beyond compliance and voluntarily engages in actions that appear to advance social causes, including committing to environmental and human rights protection, providing community support, and so forth".

Nowadays, these philanthropic actions are not only desired but also increasingly expected by society. Especially during the last couple of decades, CSR continuously increased its relevance for businesses; soon, CSR will be an integral part of a business strategy rather than being attained to the corporate social agenda of a company (Zhang, 2008). This increased relevance can, inter alia, be traced back to several inherent causes: Demographic and societal changes, shifts of energy sources, or climate change acknowledgments. The catastrophes and damages caused by climate change are mounting and bring awareness to a broader bandwidth in society.

Moreover, there is now a better understanding that well-conducted corporate governance is systemically important, especially since the 2008 financial crisis. Combining those explains why CSR is one of the most relevant strategic decisions for corporations today (Hill, 2020).

As CSR engagement is so multifaceted nowadays, and implemented across all divisions of an organization, from diversity policies to air pollution control policies, CSR can appear in numerous shapes, forms, and manifestations. To assess the CSR performance of a company, rating companies split a company's CSR activities into three distinct categories: environmental, social and governance, henceforth ESG. Different KPIs are applied to these three respective ESG pillars to make CSR performance measurable, transparent, and comparable. Therefore, CSR describes all activities of corporations that can be referred to be as better corporate citizens; this directly includes activities regarding social responsibility, but inherently also addresses environmental and governance considerations. Vice Versa, ESG includes the three sustainability pillars explicitly and therefore tends to be a more expansive term (Gillan et al., 2021). Hereafter, ESG-performance is described as a proxy for the commitment to the extent, and the magnitude of conducted CSR activities.

Currently, over 600 ESG ratings and over 4500 key ESG-performance indicators are available to assess corporate CSR performance (WBCSD, 2020). The main providers of ESG ratings are: Sustainalytics, S&P Global, Moody's ESG, KLD, Refinitiv, MSCI (Berg et al., 2020). In this paper, I follow the approach of several authors (e.g., Shen et al., 2016; Lins et al., 2017, Velte, 2017) and use the methodology provided by Refinitiv, which is shown in Figure 2. The database comprises data for more than 400 ESG indicators starting from 2002 for over 7000 public companies from North America, Latin America, Europe, Africa, Asia, and Oceania and is based on publicly disclosed information.

Figure 2: ESG-score Methodology of Thomson Reuters
(Own representation based on Thomson Reuters (2021).
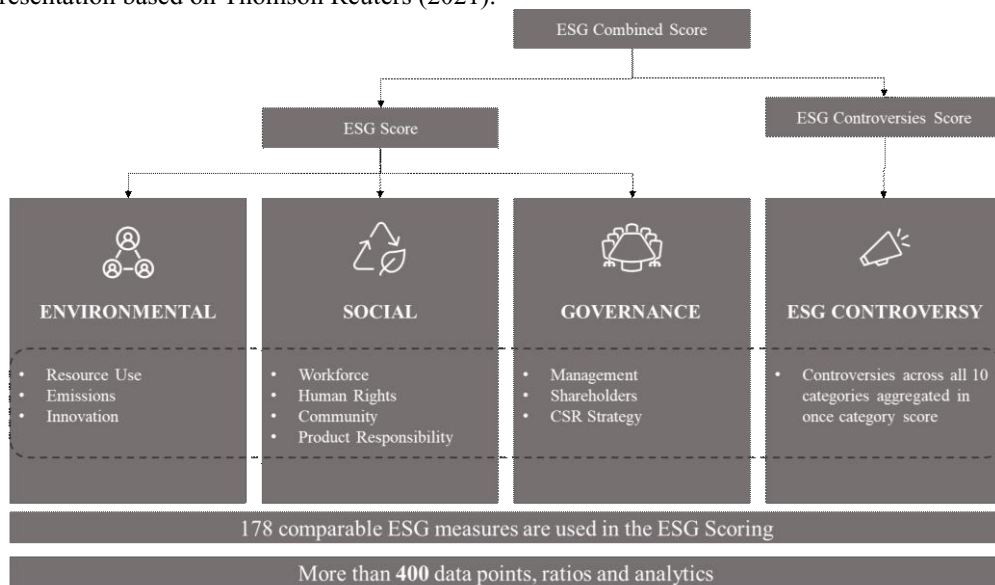
2.1.2. Corporate Social Responsibility in Emerging Markets

2.1.2.1. Why Economic Development Matters for CSR

While it is proven that CSR engagement is surging all around the world, the degree of engagement is still tremendously diverging. While some countries race far ahead in sustainability, e.g. Finland, Sweden, Germany, and Belgium, others, e.g., Central African Republic, South Sudan, or Chad, are still lacking behind (Sachs et al., 2021). The reasons for this difference are multifold, however, reasons regarding the economic environment in which firms operate, e.g., organizational structures, nascent capital markets, financial information disclosure, law and regulations, the effectiveness of institutional supervision, and investor visibility were found to be important (Freitas, 2016). These characteristics are often highly different for firms in countries with diverging economic status, thus there should also be a diverging degree of CSR engagement between countries with different economic development statuses (Welford, 2004; Baughn et al., 2007).

Further, CSR engagement is, in some regions, still considered post materialistic, indicating that considerations regarding environmental, social, or governance protection measures are only applied when financial safety is secured. This is also why, CSR often is a practice for firms that have abundant resources and excess cash, which is not readily available in poorly developed countries (Inglehardt, 1997). This is validated by Arevado and Aravind (2011), Montiel (2008), and Hoffman (1999) who find that the degree of CSR-engagement is related to past financial performance. As countries develop and become wealthier, resources become more abundant, enabling more companies to participate in CSR engagement. The CSR engagement and

disclosures are rewarded by investors, also since CSR considerations are now more often integrated into their investment process, in turn pressuring businesses to implement CSR practices into their running operations to be considered worth investing.

Another explanation might be variations in the institutional environment between developed and undeveloped countries. These variations can moderate the pressure external stakeholders can put on organizations in that institutional environment. The link between the institutional environment, the economic conditions, and the CSR engagement on the firm-level is, inter alia, dependent on the presence and power of non-firm institutions such as public regulators, private regulators, and non-governmental organizations, henceforth NGO (Campbell, 2007). These organizations moderate and supervise corporate behavior and can endorse corporate sustainability integration. This supervision can either take place by regulation of harmful processes, such as CO_2 emission regulation or by providing corporate incentives for CSR integration. e.g., tax breaks for philanthropic firms. The presence and the effectiveness of these institutions and processes are stronger in developed countries; Undeveloped countries often lack effective supervisory mechanisms and struggle to establish them (Wang et al., 2008).

Variation in these mechanisms also impact information asymmetry between firms and external stakeholders by providing a wider variety of information channels and the reliability of disclosed company data; this makes companies more transparent and visible for external stakeholders (Dou et al., 2015). The more visible firms are, and the more efficient corporate communication is, the more efficiently stakeholders can obtain company information and respond efficiently to firm actions (Wang & Qian, 2011). The successful integration of CSR is thus more readily noticed in developed financial markets and can result more easily in financial gain for companies, increased financial performance, and in turn, to decreased FDR. Contrary, high CSR investment in undeveloped countries can remain unnoticed, hence unrewarded. This visibility and efficiency are mostly available in developed markets; undeveloped markets often face a shortage of valid media and effective public supervision which might lead to less visibility and increase information asymmetry (Dou et al., 2015). Hence, developed countries experience an advantage in the level of CSR engagement (Nwabuzor, 2005).

Besides the outlined reasons, there are still various characteristics related to the economic variables, such as economic growth or inflation, which influence ESG-performance and are also important to consider. However, in this work, I specifically focus on economic development, proxied by the GNP per capita of the respective country.

Finally, it can be outlined that the status of economic development is highly likely to influence the degree of CSR engagement and the effect CSR engagement has on FDR. The question, which has not been addressed in the literature is now: Does economic development moderate the effect CSR engagement has on FDR?

2.1.2.2. Why Culture Matters for CSR

While the economic environment is important in being effective in putting pressure on corporations to engage in CSR integration in the business, they do not explain the entire variation between the ESG-performance of countries. The pressure put on organizations does not only result from effective supervision mechanisms but is also heavily dependent on investor interest and their resource allocation. Resource allocation of investors is increasingly now considering companies engaging in sustainability issues. The changing interest is, inter alia, due to a change in societal culture, predominantly in the western world, where profit maximization now conflicts with increasing stakeholder interest in doing good. The change in societal culture likewise alters investor preferences and in turn asset allocation. Therefore, it can be concluded that culture is an important influence on financial asset allocation all around the world and that changes in culture might affect corporate CSR integration and ESG-performance (Cai et al., 2016).

In the past, cultures were mostly regionally unconnected; however, globalization has now connected distinct cultural groups from around the world which has resulted in a broader variety of cultural values. This is especially pressuring for companies with a high international exposure because firms now do have to take a broader variety of cultural values into corporate decision-making. Given this, and the vast recent academic research posting the benefits of ESG-performance on firms, it should be suggestable that firms around the world are increasing their ESG-performance to make use of these benefits; however, this is not the case. ESG-performance between countries is still highly divergent as outlined in Figure 5 (Cai et al., 2016). Culture can be one of the main reasons attributed to these differences (Sucheta-Martínez & Gallego-Álvarez, 2017). This is supported by Baughn et al. (2007) as well as Ewing and Windisch (2007) who claim that, especially in Asia cultural differences could have hindered CSR to be effectively implemented in the past. Moreover, Roy and Goll (2014) find that cultural practices impact sustainability behavior, with a focus on environmental issues. Buhr and Freedman (2001) confirmed cultural differences between Canada and the US, by finding that Canada displays a more collectivistic behavior.

This is, inter alia, because culture is an important influence on corporate decision-making processes, firm structure, and behavior (Richardson & Boyd, 2005). In this case, cultural aspects might be important for individuals and firms when conducting asset allocation decisions. The values that determine cultures therefore also determine the stakeholder expectations on corporate decision making. Hence, external stakeholders and their inherent values they stand up for can put, through similar channels as already described in the economic development section, put pressure on corporate decision-makers, which might force corporations to integrate CSR measures (Campbell, 2007).

Following Guiso et al. (2006), culture can be defined as "those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation" (p.23-24). This definition conveys the exalted relevance of culture for all societies. However, culture can have an infinite number of characteristics and has been traditionally hard to capture. The most preeminent work in this field was conducted by Hofstede (1983). By conducting a study on more than 115 000 employees in 40 countries, Hofstede was first able to define four, today six dimensions that capture cultural differences between countries and are now widely used in the existing literature. I follow several researchers (e.g., Baldini et al., 2018; Thanetsunthorn, 2015; Halkos & Skoloudis, 2016) and use Hofstede's model. While there are originally six dimensions, I include the three most applicable to my work: Power Distance, Individualism, and Long-Term Orientation, which can be seen in Table 1.

Table 1: Hofstede's Cultural Dimensions
 (Own representation based on Hofstede, 1980)

Name	Power Distance	Individualism	Long-Term Orientation
Key Words	Inequality Acceptance	Ties to other individuals	Societal time horizon
Description	Refers to the degree of inequality and acceptance of inequality between society participants with or without power.	Describes the tightness of ties between people within the society. Refers to the degree of self-utility maximization vs. the well-being of the society.	Thrift and education in long-term-oriented societies collide with strong convictions, values, and personal rights in short-term-oriented societies.

2.2. Corporate Social Responsibility and Financial Performance

Due to definitional, measurement, and methodological issues and despite extensively conducted research, relevant research is lacking a definite consensus of the linkage between CSR and corporate financial performance, henceforth CFP. Effects were either found to be positive, neutral, or negative, hence highly contrary (e.g., van Beurden and Gössling, 2008; Aupperle et al., 1985; Hoepner and McMillan, 2009).

Historically, two major theories have been discussed to be contrary: The stakeholder theory developed by Freeman (1984) and the shareholder theory developed by Friedman (1970). The Friedman (1970) view on the link between CSR and CFP grounds on the principal-agent theorem which states that the only purpose of a firm is to increase the profits of its shareholders. According to the theorem, the shareholders, the agents, and the management of a firm, the principals, have an inherent conflict of interest and objectives (Dou et al. 2015). By spending firm resources on CSR, the principals oppose a direct cost to the firm and spend money which would have, in case of non-spending, gone to the shareholders or firm value-enlarging risky projects (Friedman, 1970; Ullman, 1985). Therefore, CSR yields a competitive disadvantage to firms who do participate in it (Aupperle, 1985). The theory suggests that CSR engagement is costly and thus financially unbeneficial for firms and their shareholders. Against this backdrop, firms who do participate in CSR should financially perform weaker than their non-CSR participating peers. However, recent research casts increasing doubt on the theory of shareholder maximization and gave rise to an increasing debate on companies' role in society (Wang et al., 2015).

The opposite theorem is grounded on the stakeholder theory and is now more prevalent in existing research. The theory suggests that, especially in the globalized capitalist world, a firm has a diverse palette of stakeholders, such as employees, customers, investors, shareholders, communities, and society (Freeman, 1984). The stakeholders are, in this case, an integral part of their environment (Dou et al., 2015). The interests of these stakeholders are interlinked and hence, stakeholder interests cannot be looked at distinctively. This implies that a firm should create value for all these stakeholders, because that pleasing their needs, through social performance, is an inherent purpose of companies (Freeman, 1984). Therefore, CSR engagement may result in a high degree of stakeholder satisfaction which yields elevated stakeholder and investor appreciation. Finally, this appreciation might yield a higher firm value and higher financial performance.

This increased financial performance can, inter alia, be attributed to enhanced reputation (Fombrun et al., 1990; Brammer et al., 2005). The enhanced reputation therefore can be attained to a company's intangible assets which enhances the competitive advantage of a firm (Barney, 1991). Better reputation with the competitive advantage might lead to a tighter connection to the customer base, employees, and suppliers which in turn will lead to higher profits (Brown et al., 1998). Higher profits in turn can be traced backer to higher sales (Ambec and Lanoie, 2008), higher revenues (Lev et. al., 2010), or reduced costs (Porter and Linde, 1995), and eventually in increased financial performance (Herremans et al., 1993).

I follow the stakeholder theorem in this work and hypothesize that financial performance is positively associated with CSR performance. When evaluating existing research, this theory is supported by most researchers. Friede et al. (2015) provide the most extensive analysis and conducted a meta-analysis on more than 2000 firms and find that 90% of 2000 investigated empirical studies found a non-negative interlink between CSR and CFP. A more recent meta-analysis by Atz et al. (2021) provides a more updated view on this interlink and support the findings of Friede et al. (2015). However, most of the existing research is conducted in established markets with mature firms. As stated below, it is questionable whether these findings can also be applied to emerging markets firms.

2.3. Financial Distress Risk

Financial distress is traditionally a very vague term and research was struggling to provide a universal definition for the term financial distress. Various terms are used simultaneously to describe financial distress: insolvency, failure (e.g., Beaver, 1966), bankruptcy (e.g Altman, 1984; Ohlson, 1980) and default (Merton, 1974) are some of the most discussed terms which surround financial distress. Most of the previous work defined financial distress in two different ways: the doorway to distress (e.g., Cheng & Li, 2003; Lau, 1987; Hill et al., 1996) and legal financial distress (e.g., Altman, 1968; Shumway, 2001; Wu et al., 2010). As the terms are remarkably diverse, a universal definition for financial distress remains complex and literature could not agree on a universal definition. Wruck (1990) defines the state of financial distress as the state wherein the firm has "insufficient cash flows to meet its obligations" (p. 421).

Several researchers have attempted to predict this cash flow insufficiency and financial distress risk since Beaver's first prediction model in 1966, in which he used financial ratios to predict corporate failure. This was followed by additional prediction models (e.g., Altman, 1984; Ohlson, 1980; Zmijewski, 1984), which were validated to be more accurate than Beaver's approach in the 1960s. Over time, additional models were developed, modified, and altered to

predict financial distress more accurately. Nowadays, FDR prediction models can be classified into two distinct categories: accounting-based models and market-based models, which mostly attempt to predict bankruptcy. Both types of models rely on using company financials to assess the FDR, however, the specific financials vary between studies.

Accounting-based bankruptcy prediction models use accounting data publicly disclosed from the companies and normally use a palette of weighted financial ratios on distressed and non-distressed firm samples to predict corporate bankruptcy (Agarwal & Taffler, 2007). While diverse accounting-based models exist, the Altman Z-score (1968) and Ohlson's O-score (1980) are the two models which remained most prominent and are applied the most often (Platt & Platt, 2006). Hence, I focus on these two models and explain them more briefly.

1. Being developed in 1968 by Edward E. Altman, the Altman Z-score was the first prominent model to predict corporate bankruptcy by applying multivariate discriminant analysis, hereafter MDA. Hereby, the Z-score is created through the computation of the weighted average of five financial ratios. Altman applied his model on 66 firms, 33 bankrupt firms, and 33 non-bankrupt firms to predict whether firms are likely to go bankrupt within t+2 years following the year of computation t (Rahman et al., 2021). Altman's model accurately categorized 95% of the sample into the correct group, bankrupt firms, or non-bankrupt (Altman, 1968). While the original model was only applicable to US manufacturing companies, Altman created customized models, Z'-score and Z''-score, for private firms in 2017 (Altman, 2017).

2. Being created in 1980 by James Ohlson, Ohlson's O-score is a logit model to predict corporate bankruptcy. Ohlson uses a nine-variable combination of weighted financial ratios in a conditional logistic regression, to predict the likelihood of financial distress (Ohlson, 1980). Ohlson used more than 2000 companies when estimating his coefficients.

More recent research has advanced from the classic accounting-based measures and used market-based data, e.g., security prices, to predict corporate bankruptcy. More advanced techniques have been developed in recent years, such as neural networks, genetic algorithms, or decision trees. Some of the most prominent models are by Zmijewski (1984), Shumway (2001), and Blums (2003).

While market-based models were widely applied in existing literature, they have also been subject to criticism by researchers, questioning the accuracy of these models (Hillegeist, et al.,

2004). Especially the backward orientation of the models (Opler & Tittmann, 1994), the computation under the going concern principle, and the lack of volatility incorporation (Hillegeist, 2004) are major points of criticism.

Finally, research is not unified whether accounting- or market-based measures yield more accurate bankruptcy prediction results (Agarwal et al, 2007). I follow the approach of several researchers (e.g. Berger, Ofek, and Swary, 1996; Dichev, 1998; and Griffin and Lemmon (2002) and use Ohlson's O-score (1980) and Altman's Z-score (1968) in this work. An in-depth description of other bankruptcy prediction models, especially of market-based models would exceed the scope of this work; hence I do not include them here.

2.4. Linking Corporate Social Responsibility with Financial Distress

There are many channels through which ESG-performance is impacting but mostly benefitting the risk of falling into financial distress. One reason might be that CSR engagement of a firm leads to higher stakeholder engagement; this, in turn, has an enhancing effect on customer loyalty, customer satisfaction, and indirectly a positive effect on firm reputation (Carter, 2005). In case of the occurrence of negative events, firms with higher firm reputation and customer loyalty experience less reproach; this, in turn, mitigates punishments and moderates cash flow and sales volatility which results in decreased firm risk (Godfrey et al., 2009). This moderating effect can not only be found in the case of negative events but also in times of crisis. This means that CSR engaging firms can lower their systematic risk exposure, especially in times of crisis (Benabou & Tirole, 2010). This resilience can be traced back to higher customer loyalty and satisfaction which lowers a product's price elastic demand (Albuquerque et al., 2019) and a decreased firm beta (Lambert et al., 2007). Hence, CSR, by enhancing firm reputation can moderate the volatility of corporate income and cash flow (Carter, 2005). This makes firms less likely to slither into financial distress (Chava & Purnanandam, 2010).

Further, higher ESG-performance might lead to reduced capital constraints, which in turn might reduce FDR (Waddock and Graves, 1997). Specifically, firms with higher sustainability performance are more prone to disclose more detailed reports on their sustainability performance. These firms are also more likely to provide assurance by external auditors for these reports (Dhaliwal et al., 2011). Disclosure and assurance increase a firm's transparency (Cheng et al., 2014) and credibility and simultaneously reduce the information asymmetry. This reduces capital constraints (Hubbard, 1998). Moreover, greater disclosure attracts external investors, enlarges a firm's investor base, and reduces the cost of capital (Merton, 1987), all

indicating reduced frictions in issuing equity and debt for companies engaging in ESG. ESG-performance, therefore, leads to lower capital constraints and therefore leads to reduced FDR.

Moreover, addressing all the needs of stakeholders can be considered as superior management performance (Waddock and Graves, 1997). This is supported by Gross (2009) who finds a positive association between ESG-performance and management performance, indicating an effective run of the company, financial planning, and forecasting accuracy as well as financial stability (Oikonomouet al., 2012). Again, good management is valued by external stakeholders which leads to lower capital constraints, increased capital market access, and more. Hereby, Altman & Hotchkiss (2006) find that good management leads to lower FDR.

The theory stands in line with the empirical literature linking CSR and financial distress. The direct effect between corporate financial distress and ESG has not been a widely studied topic. Most of the existing studies have been conducted in the US (e.g., Boubaker et al., 2020; Jo & Na, 2012) where a predominantly negative relationship was found. Al-Hadi et al. (2019) studied public Australian firms and found a negative relationship between ESG and financial distress, where the strength effect is positively correlating, however non-US studies from Europe, Africa, South America, or Asia are rare. While some studies exist for Chinese firms (e.g Wu et al., 2020) and Pakistan (e.g., Khana et al., 2021; Farooq et al., 2021), existing research is still lacking wide acknowledgment and confirmation of their findings. Nonetheless, especially the US findings were found to be robust. I ground my first hypothesis on that and suggest:

H1: *CSR-performance proxied by the ESG-score generally reduces FDR of a company*

While some research investigated the general effect of CSR on FDR, research is lacking regional differences on these effects. Although research finds tremendous differences in the CSR engagement between countries, especially emerging markets (Asia, Europe, and South America) remain a widely unexplored field. To my best knowledge, Chen et al. (2018), Wu et al. (2020), Khana et al. (2021), Farooq et al. (2021) are the only studies aiming to address the ESG-performance effect on FDR in emerging markets. Most of the papers studying emerging markets also find a negative relationship. However, the papers also focus on Asian exposure, which finally results in a lack of Non-US and Non-Asian companies. Given the high regional differences in development and CSR engagement between these regions, I propose:

H2: CSR-performance proxied by the ESG-score has regional differences in the strength of its effect on FDR

Following the answer of the regional differences between the ESG-performance effect, it is highly interesting to investigate which factors drive these differences. Most likely, country-specific determinants influence the effect. Research found that culture is an important determining factor for shaping the institutional environment in which businesses operate. Culture, therefore, influences corporate decision processes as well as investor decision processes by putting pressure and expectations on company top-management (Hahn & Kühnen, 2013). Therefore, culture might be an impactful factor in determining the regional effects of ESG-performance on FDR. Given its effect on sustainability engagement of firms, I can outline hypothesis 3:

H3: Cultural differences, proxied by Hofstede's cultural dimensions moderate the effect of ESG-performance on FDR between regions

As previously outlined, there are highly significant regional differences between the degree of ESG-performance. It was found that developed countries experience a significant advantage compared to lower developed countries. Besides Wang (2015), who finds that the relationship between CSR and CFP is stronger in developed countries than in undeveloped countries, research solely discusses the general state of CSR engagement between countries with different development statutes. I build op on this lack and suggest that the strength of the effect is dependent on a country's development status. By investigating them jointly, I can outline my fourth hypothesis:

H4: Economic Development, proxied by GNP per Capita, moderates the effect of ESG-performance on FDR between regions

3. Data and Methodology

3.1. Sample Composition

I retrieved data on ESG-performance from Refinitiv Datastream, which is one of the largest databases for ESG-performance collection and is commonly used in existing research (Lins et al., 2017; Stellner et al., 2015; Krüger, 2015; Velte, 2017; Shen et al., 2016). I retrieved financial information in $US for computing financial distress- and control variables also from Refinitiv Datastream. I downloaded macroeconomic variables from the Worldbank website (Worldbank, 2022). Hofstede's (1980) model of national culture is downloaded from Hofstede's Insights (2021). The initial sample consists of 15730 firm-year observations comprising 1573 firms, ranging from 2009 to 2019.

I deleted all firms affiliated with the financial services sector from the sample because their balance sheet composition and structure are highly different from non-financial services firms. After deleting missing values for every variable, the final sample size reduced to a total of 8301 firm-year observations, consisting of 1181 firms in the time range of 2009 to 2019.

Table 2: Sample Composition

Sample Composition	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
Argentina	-	-	-	-	-	1	16	24	34	30	105
Brazil	39	41	47	63	62	59	58	64	67	83	583
Chile	17	11	5	5	6	-	-	-	-	-	44
China	36	39	39	41	41	37	39	169	171	175	787
Colombia	4	5	5	5	6	6	11	12	12	9	75
Czech Republic	3	3	1	1	1	1	1	2	2	2	17
Hong Kong	17	20	21	21	24	24	25	30	31	30	243
Hungary	3	3	3	3	3	3	3	3	3	3	30
India	6	10	12	47	66	69	68	71	71	71	491
Indonesia	-	-	1	1	-	-	-	-	-	-	2
Malaysia	21	22	24	26	27	29	32	33	34	33	281
Mexico	14	16	17	18	20	25	27	31	32	30	230
Pakistan	-	-	-	-	-	-	-	2	2	2	6
Philippines	10	14	14	17	18	18	18	18	18	18	163
Poland	10	13	13	14	16	17	19	19	18	15	154
Taiwan	93	98	101	105	108	109	111	112	113	109	1064
Thailand	9	11	16	17	24	26	28	30	31	28	220
Turkey	15	15	15	16	17	17	15	16	17	16	159
United States	326	335	330	345	356	378	383	396	400	403	3653
Total	623	656	664	745	795	819	854	1032	1056	1057	8301

I collected observations in four different regions: USA, South America, Asia, and Europe. For the latter three, emerging markets countries were selected, finally comprising 20 different countries. Using USA as a benchmark for a comparison to the emerging markets, S&P 500 constituents data was collected.

The highest share of firm-year observations is represented by US observations. This is followed on by Asian observations and South American observations. Observations of emerging markets in Europe represent the smallest share. As shown in table 2, the USA, Taiwan, and China represent the largest portion of the sample composition. Industry affiliation is based on TRBC Economic Sector (TRBC, 2022). Observations in the technology sector have the highest share, followed by industrials and consumer cyclicals.

3.2. Regression Methodology
3.2.1. Dependent Variables
I conducted all my regressions using two dependent variables, Altman's Z-score, and Ohlson's O-score. As outlined previously, these FDR-prediction models were found to be most prominently used in the literature while they also provide accurate prediction results. In the following, I describe the dependent variables very briefly.

Z-SCORE (Z-score): For computing the Z-score, I followed the original approach of Altman (1968) and applied the original ratios and weighting coefficient. Altmann (1968, 2017) has proposed two ways of computing the Z-score. Since the modifications of Altman (2017) have not been applied extensively by the community, I stick to the established standard of Altman (1968).

O-SCORE (O-score): For computing the O-score, I followed the approach of Griffin & Lemmon (2002) and applied their second equation to compute the O-score. Contrary to Ohlson's (1980) approach, their model does not include the GNP price-index level, instead, it only includes firm-specific financial ratios to predict bankruptcy risk of the firm.

After conducting the Jarque-Bera (1968) normality-test and the skewness-kurtosis-normality test, I found that both dependent variables, O-score, and Z-score, were not normally distributed. Logarithimizing and squaring also did not result in more stable results. Nonetheless, several robustness checks (e.g., Durbin-Wu-Hausman-Test, 1978; Breusch-Pagan-Test, 1979) require the normal distribution of the variables. To transform my dependent variables, I applied the transformation developed by Box & Cox (1964). This is a monotonic transformation of the data which stabilizes the variance of the transformed variables by assigning a specific lambda value to them:

Box & Cox (1964) - Power Transformation

$$\gamma_i^{(\lambda)} = \begin{cases} \dfrac{\gamma_i^{(\lambda)} - 1}{\lambda} & \text{if } \lambda \neq 0 \\ \ln(\lambda) & \text{if } \lambda = 0 \end{cases}$$

This transformation is solely applicable to positive values; hence I dropped the observation if Z-score<0 and O-score<0 for my analyses. Figure 3 and Figure 4 show the respective residual plot, before and after the transformation.

Figure 3: Z-score Transformation
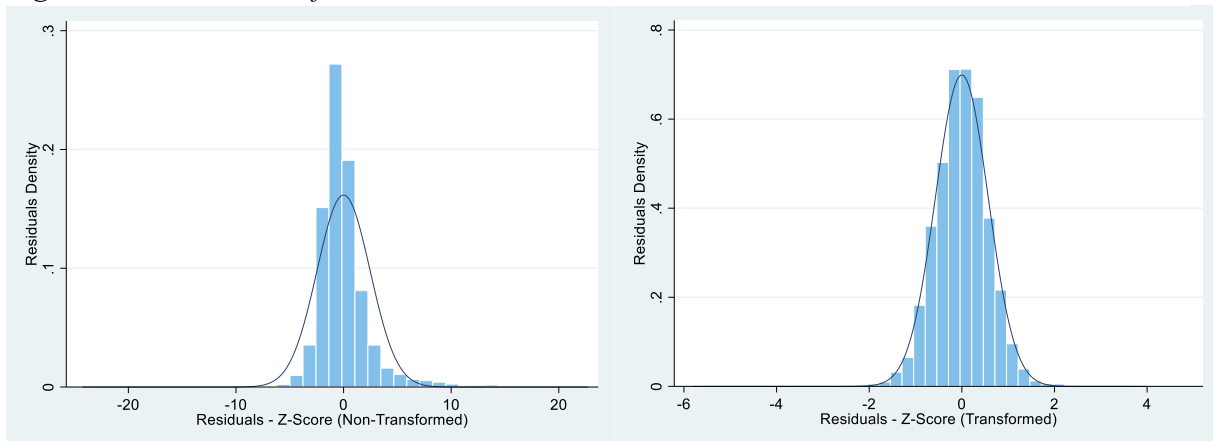
Figure 4: O-score Transformation
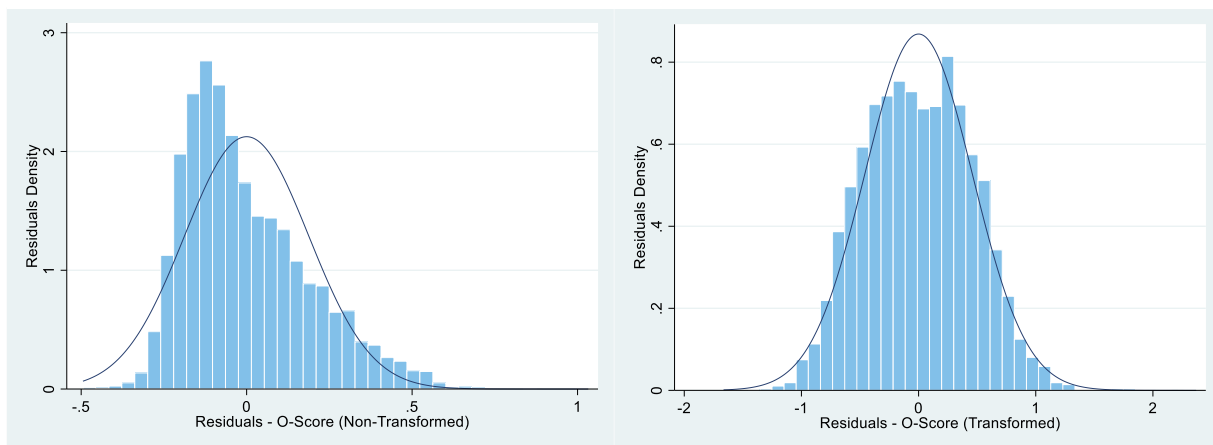
3.2.2. Independent Variables
ESG-Performance:

ESG-score (CSR-ENGAGEMENT): I used the Refinitiv Datastreams ESG-score as a proxy for CSR-performance of companies. The ESG-score provides information about a company's ESG-performance, commitment, and effectiveness across ten main sustainability areas, based on self-reported information. The ESG-score is the weighted average of the three ESG pillars: (i) environmental, (ii) social, and (iii) governance. (i) The environmental score measures a firm's performance in 3 sub-pillars: emission, innovation, and resource use; hence it accurately measures a company's environmental influence along the entire supply chain and its future

orientation. (ii) The social score determines how a company provides a thriving, responsible, and safe environment for all its stakeholders and assesses the effectiveness and the commitment of the inclusion of community guidelines, human rights respect and promotion, product responsibilities, and development of the firm's workforce. (iii) The governance pillar assesses how sustainability strategies, guidelines, and processes are designed and implemented (Thomson Reuters, 2021).

Macroeconomics

GNP PER CAPITA is measured as the country's gross national product per inhabitant in year t, based on current prices in $US. Several authors (e.g., Cai et al., 2016) confirm that inter alia, economic development can explain a large share of sustainability performance in high-income countries. Contrary, low-income countries were found to be slow in increasing sustainability performance (Welford, 2004).

Culture

In Hofstedes' (1980) research on national differences in cultures, he outlined six dimensions to describe national cultures and, inter alia, quantified them on a scale from 0-100. In this work, I use three of them: Individualism, Power Distance, and Long-Term Orientation.

INDIVIDUALISM (Individualism) describes whether a culture places relevance on attaining goals on the personal level or the level as a group, namely the society. A stronger focus on individual goals yields a higher individualism score (Hofstede, 1980). Given that the participation of CSR suppresses the urge of personal utility maximization but rather attempts to achieve holistic well-being, I expect a negative correlation between FDR and the individualism-score.

POWER DISTANCE (Power Distance) describes whether society considers believing that power should be concentrated to a small number of leaders and whether it supports hierarchical organizational structures (Ringov & Zollo, 2007; Waldman et al., 2006). Strong hierarchies and power concentration yield a high power distance score. Contrary, low power distance enables sustainability discussion between management and employees, provides a flourishing environment for CSR initiatives, and reduces external pressure on the organizations. Consequently, I expect a negative association.

LONG-TERM ORIENTATION (LT-Orientation) refers to whether a country is accepting short-term delay in favor of long-term success. In countries with a long-term orientation, short-

term success is neglected or abandoned in favor of the larger goal of sustainable long-term success. Short-term successes are not particularly important in these cultures (Hofstede, 2001). While in established markets the long-term orientation, and thus also the long-term advantage of CSR initiatives, is already widespread, this is rare in emerging markets (Inglehardt, 1997). For this reason, I expect a smaller effect there compared to the US, thus a negative coefficient of this interaction term.

3.2.2. Control Variables

Although the effect of ESG-performance on FDR is the main interest in this paper, FDR is certainly influenced by various determinants. Vast research was conducted in the past to state which variables have specifically high importance and were found to be relevant to impact FDR. I used the following control variables on the firm-level.

Firm:

VOLATILITY (Firm Risk) is characterized as the standard deviation of a firm's monthly stock returns in the respective calendar year. I expect volatility to be positively associated with FDR because organizations yielding high stock return volatilities are often discerned riskier by investors (Boubaker et al., 2020).

ASSET TANGIBILITY (Asset Tangibility) is defined as the ratio of total fixed assets and total assets. Asset tangibility might be positively correlated with the degree of debt financing in a company, given that asset tangibility might, in turn, increase a company's ability to collateralize its debt (Sharpe & Stadnik, 2007). Consequently, I expect a positive correlation between asset tangibility and FDR.

FIRM SIZE (FIRM SIZE) is defined as the natural logarithm of a firm's total assets as of book value. On the one hand, firm size controls for differences in financing opportunities through enhanced capital market access and increased ability to compete with competition. Further, large firms often have more excess capital which in turn may lead to enhanced ESG-performance. On the other hand, firm size is often positively associated with debt ratios which might in turn influence companies' financial health (Hsu et al., 2015).

RETURN ON ASSETS (Profitability) is defined as the ratio of a firm's net income to the firm's total assets. Profitable companies are more likely to be financially stable and healthy, contrary unprofitable companies are more likely to face financial difficulties or finally fall into financial distress. Hence, I expect a negative relationship between a firm's profitability and its FDR.

FINANCIAL SLACK (Financial Slack) is defined as the ratio of cash and cash equivalents and total assets of a firm. According to the pecking order model, firms' with less financial slack have smaller debt burdens and are less dependent on external sources of financing (Verwijmeren and Derwall, 2010). Thus, I expect a negative relationship between financial slack and FDR.

I also acknowledge further variables provided in existing research; due to scope reasons, I did not include them. In existing literature, especially leverage was found to have a significant impact on FDR, however, I identified multicollinearity between leverage and the O-score, hence I did not control my results for leverage.

Finally, I account for year, industry, and regional fixed effects for all my regression models. These dummies mitigate time effects and effects specifically applying to the respective industries.

3.3. Methodology

As standard in the literature, I conduct a set of multivariate linear Ordinary-Least-Squares (OLS) regressions. By conducting the White-Test (1980) to check against heteroskedasticity, I identify heteroskedasticity in my baseline regression. I use robust standard errors against heteroskedasticity in all my regressions. I conducted the Hausman-test (1980) to validate the appropriate use of fixed effects, advantaging the random effects option in my regressions. All computations are conducted in STATA 16. To test my hypothesis, I conducted several regressions:

H1: *CSR-performance proxied by the ESG-score generally reduces FDR of a company*

This regression model tests my first hypothesis, whether a significant relationship between ESG-performance and financial distress exists. To do so, I run two regression models: (1) and (2) by using the transformed Z-score and the O-score, respectively. Aligned with several authors, I expect that ESG-performance and FDR are negatively correlated: indicating that a high ESG-performance results in low FDR. To accomplish this, regression coefficients for the Z-score should be positive and negative for the O-score.

$$FDR_{it} = \alpha_{0it} + \beta_1 ESG - Score_{it} + \beta_2 FimSize_{it} + \beta_3 Volatility_{it} + \beta_4 AssetTangibility_{it} + \beta_5 ReturnOnAssets_{it} + \beta_6 ReturnOnAssets_{it} + \beta_7 FinancialSlack_{it} + \beta_8 GNPperCapita_{it} + + \beta_9 PowerDistance_{it} + \beta_{10} Individualism_{it} + \beta_{11} LT - Orientation_{it} + \varepsilon_{it}$$

H2: CSR-performance proxied by the ESG-score has regional differences in the strength of its effect.

I extend my regression by separating the effects of ESG-performance into the respective regional interaction terms: Asia-IA, Europe-IA, and South America-IA. This tests whether there are regional differences in direction, strength, and significance of ESG-performance of FDR between the effects ESG-performance has on FDR and compares the effects of the stated regions against the effect of the S&P 500 companies in the US. Therefore, the US observations serve as benchmark for the emerging market coefficients; a positive coefficient for the regional interaction terms would indicate an effect that is stronger than for S&P 500 companies. Vice versa, a negative coefficient would indicate a weaker effect than found in US firms.

Confirmed previously by various researchers, I expect a general negative association for the ESG-score. Accordingly, I expect weaker effect in emerging markets, hence also negative regression-coefficients for the regional ESG-scores on my Z-score models; likewise, a positive coefficient for the O-score for Asia, Europe, and South America is expected.

$$FDR_{it} = \alpha_{0it} + \beta_1 ESG - Score_{it} + \beta_2 Asia - IA_{it} + \beta_3 SouthAmerica - IA_{it} + \beta_4 Europe_{-IA-it} + \beta_5 FimSize_{it} + \beta_6 Volatility_{it} + \beta_7 AssetTangibility_{it} + \beta_8 ReturnOnAssets_{it} + \beta_9 ReturnOnAssets_{it} + \beta_{10} FinancialSlack_{it} + \beta_{11} GNPperCapita_{it} + \beta_{12} PowerDistance_{it} + \beta_{13} Individualism_{it} + \beta_{14} LT - Orientation_{it} + \varepsilon_{it}$$

H3: Cultural differences, proxied by Hofstede's cultural dimensions moderate the effect of ESG-performance on FDR between regions

To test H3, I include three of Hofstede's (1980) dimensions into my regression model to investigate whether cultural differences can change the influence CSR has on FDR. I create three interaction terms viz (i) Power Distance-IA, (ii) Individualism-IA and (iii) Long-Term Orientation-IA to capture moderating effects of the interaction terms on the ESG effect. I expect that (i) Power Distance and (ii) Individualism have a negative relationship with CSR performance; contrary to (iii) Long-Term orientation, which expectedly should proof a positive association with CSR performance and likewise with FDR.

I conduct three different regressions, each of them including on interaction term and one culture variable, next to the control variables I utilized before:

$$FDR_{it} = \alpha_{0it} + \beta_1 ESG - Score_{it} + \beta_2 PowerDistance - IA_{it} + \beta_3 IA - Individualism - IA_{it} + \beta_4 IA - LT - Orientation - IA_{it} + \beta_5 FimSize_{it} + \beta_6 Volatility_{it} +$$

$$\beta_7 AssetTangibility_{it} + \beta_8 ReturnOnAssets_{it} + \beta_9 ReturnOnAssets_{it} +$$
$$\beta_{10} FinancialSlack_{it} + \beta_{11} GNPperCapita_{it} + \beta_{12} PowerDistance_{it} + \beta_{13} Individualism_{it} +$$
$$\beta_{14} LT - Orientation_{it} + \varepsilon_{it}$$

H4: The strength of the effect of ESG-performance proxied by the ESG-score on FDR of a company is dependent on a country's economic development status.

I create three different interaction terms to capture the regional differences in economic development; this enables the model to capture whether the ESG effects change between the different economic development statuses: developed, semi-developed, and undeveloped countries. The interaction terms capture the effect of ESG-performance on FDR compared on the state of economic development and compare them to the US observations (see Table 7). Along with Wang et al. (2015), I expect that wealthy countries display a stronger effect of ESG-performance on FDR than in deficient economies; this is due to the positive relationship between ESG-performance and country wealth and the inherent lower FDR. Given that the US observations proxy the established markets, I expect negative coefficients for (i) Undeveloped-IA (ii) Semi-developed-IA and (iii) Developed-IA which would indicate smaller effects in the emerging markets countries compared to the US observations in the sample.

$$FDR_{it} = \alpha_{0it} + \beta_1 ESG - Score_{it} + \beta_2 Undeveloped - IA_{it} + \beta_3 Semideveloped - IA_{it} +$$
$$\beta_4 Developed - IA_{it} + \beta_5 FimSize_{it} + \beta_6 Volatility_{it} + \beta_7 AssetTangibility_{it} +$$
$$\beta_8 ReturnOnAssets_{it} + \beta_9 ReturnOnAssets_{it} + \beta_{10} FinancialSlack_{it} + \beta_{11} GNPperCapita_{it} +$$
$$\beta_{12} PowerDistance_{it} + \beta_{13} Individualism_{it} + \beta_{14} LT - Orientation_{it} + \varepsilon_{it}$$

4. Empirical Results

4.1. Descriptive Statistics

Table 3 reports the descriptive statistics for all variables used in the regression models. The average and the median of both dependent variables, seen in Panel A, indicate a moderate number of outlying observations. This may be traced back to the winsorizing of the 0.5 and 99.5 percentile of both dependent variables. Panel B reports the descriptive statistics for my main variables of interest. I can report small mean-median deviations for ESG-score, Power Distance, and Individualism. Regarding GNP per capita and Long-Term Orientation, the median is significantly smaller than the mean. Standard deviation remains high for all independent variables. Panel C describes the control variables of the regression models on firm-level. As I found before, I can observe a median-mean deviation for some of the control variables. Inter alia, this may be explained by high US exposure of the sample. Almost all variables show a relatively high standard deviation, indicating a dataset that inherits a diverse palette of firm-year observations. Most likely, this can be traced back to the sample exposure, including 20 different countries.

Table 3: Descriptive Statistics

	N	Mean	Median	Std. Deviation	Min	Max
Panel A						
Z-score	8301	1.044	1.031	0.781	-1.428	3.580
O-score	8301	-1.198	-1.186	0.529	-2.409	-0.113
Panel B						
ESG-score	8301	48.00	49	21.20	1.300	95.19
GNP per Capita	8301	32574.6	25704	23031.4	1220	65910
Power Distance	8301	57.58	58	18.09	40	100
Individualism	8301	56.23	48	32.25	13	91
Long-Term Orientation	8301	45.44	27	25.99	13	93
Panel C						
Volatility	8301	0.0818	0.0728	0.0439	0	1.027
Asset Tangibility	8301	0.311	0.257	0.233	0.000106	1.395
Firm Size	8301	15.91	15.90	1.375	9.751	20.52
Return on Assets	8301	0.0605	0.0541	0.0734	-1.073	1.556
Financial Slack	8301	0.1498	0.1148	0.1317	0.0001	0.842

When having a look at the overall ESG-score across all regions, an almost continuous increase over the years can be observed. Given that the sample, to a considerable extent, comprises observations from emerging markets, this increase is quite notable. The overall ESG-

performance is reported in figure 5. Excluding the exceptions below, it can be observed that there was a continuous increase in Asia, USA, and Europe throughout the observed period. Firms in South America followed a different trend in that period. While a sharp increase in 2011 can be observed, the development reversed in the subsequent years and growth turned negative. This may be due to the severe macroeconomic turmoil in that period in South America.

Besides, quite importantly, three exceptions of the continuous increase can be observed: 2010 – 2011, 2012 - 2013, and 2016 – 2017. The significant slowdown in 2010 – 2011 across the entire sample indicates that it was due to global movements, rather than local turmoil. Most probably, this development was due to the recovering process from the global financial crisis, which in 2010, was ongoing. Similar developments occurred between 2012 – 2013, where ESG-performance growth diminished to almost zero. When having a look at the regional developments, it can be found that this slowdown can, inter alia, be accounted to developments in Europe, where the overall ESG-performance growth turned negative. Most likely this can be traced back to the sovereign debt crisis in the European Union. The growth break between 2016 – 2017 is somewhat more puzzling. It can be observed that the slump in that period is due to developments in Asia, where overall ESG-performance dropped, while it simultaneously increased in Europe and the USA, indicating that local factors in that year distorted the Asian development. This is also supported by the immediate return to growth in the year after.

Figure 3: Overall regional ESG-performance by year

Overall ESG-performance, by region and year

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia	30.41	31.01	33.62	34.85	37.77	41.24	44.47	41.84	44.21	47.27
Europe	39.89	39.78	42.23	41.53	42.46	46.81	45.55	49.20	54.13	56.93
South America	43.19	43.96	50.07	50.73	50.61	50.70	49.09	48.20	49.16	48.55
USA	49.82	51.07	51.59	51.76	52.29	53.74	56.58	58.41	59.68	61.72
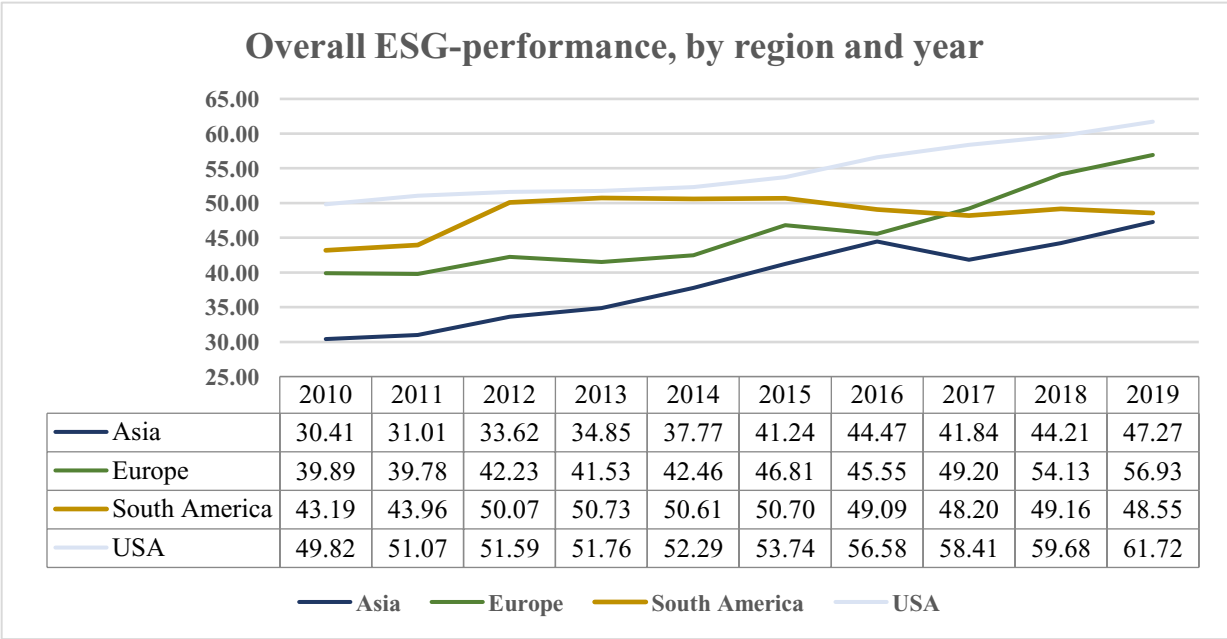
4.2. Regression Results and Discussion

In the following chapter, I outline the results of my conducted regression models that were utilized to test my four hypotheses stated in the chapters before.

H1: *CSR-performance proxied by the ESG-score generally reduces FDR of a company*

Table 8 shows the results for testing hypothesis H1. Regarding the Z-score regression, I find a non-significant coefficient of the ESG-score, indicating that no association between ESG-performance and FDR in the utilized dataset exists. However, this dataset comprises a diverse palette of firm-year observations, covering 20 different countries. The non-significance could occur from testing the ESG-score on the entire dataset. Further, the Altman Z-score was designed to predict FDR for US manufacturing companies. Consequently, effects could either cancel out or reverse regional-specific effects.

Given this model constraint; Ohlson's O-score might be more appropriate for this regression model; this score is uniformly applicable across regional levels because it provides FDR probability rather than a score. I yield significant positive ESG-score coefficients for my O-score regressions at the 1% level. A significant positive coefficient confirms the hypothesis that ESG-performance generally influences a firm's FDR and indicates that the CSR-engagement positively associates with a company's FDR because the risk of falling into financial distress increases as a company engages more in CSR. However, this finding contradicts most of the existing literature which mostly expects a negative link between ESG-performance and FDR. However, the existing literature was mostly conducted in developed markets, such as the US, EU, or Great Britain. Consequently, including emerging markets into the analysis deteriorates the results, compared to a sole investigation of established markets. A positive association between FDR and ESG in emerging markets is supported by the theory that ESG is mostly important to financially stable firms which already accomplished firm maturity (Inglehardt, 1997). Given that, emerging markets firms might still be driven by the retainment of their excess resources to invest in positive NPV projects, rather than spending those resources on ESG improvement (Ullmann, 1985; Aupperle et al., 1985).

Contrary, I find the coefficients of my control variables to be in line with previous research. While the economic development proxy is insignificant, the remaining control variables on firm-level are significant at the 1% level. Firm size, volatility, and asset tangibility are negatively associated with the Z-score, return on assets positively. Conducting an F-test

including all used variables in this regression model yield a joint significant effect for the Z-score (F-value $(7, 96) = 356.46$) and the O-score (F-value $(7, 96) = 176.63$)

Finally, given that only the O-score yields significant results, and the Z-score does not, I can only partly confirm my first hypothesis H1.

H2: CSR-performance proxied by the ESG-score has regional differences in the strength of its effect.

The regression model finds a significant negative relationship between the ESG-performance and the Z-score for US firms, indicating that CSR-engagement reduces FDR for firms in the US. This finding is supported by existing research and follows Freeman's shareholder theory (1984) in which engaging in CSR should benefit a firm. However, results of the O-score show a contradicting effect, finding a positive effect of the US, significant at the 1% level. These results do not stand in line with my expectations. Conducting the same regression model with non-transformed dependent variables yields similar results. This finding is quite notable because existing literature mostly finds a negative relationship between FDR and ESG-performance (e.g., Chen et al., 2018; Wu et al., 2020; Cheng et al., 2016 and Khana et al., 2021). Only Farooq et al. (2021) find an explicit positive relationship for firms in Pakistan. However, most research was conducted in developed markets and transfer to emerging markets is limitedly transferrable to emerging markets economies.

Results for the emerging markets interaction terms (Asia-IA, South America-IA, Europe-IA) are consistent across the three regions for the Z-score and statistically significant at the 1% level. The negative interaction terms for the emerging markets regions show that the effect of CSR engagement in emerging markets is weaker than it is in the US. This finding is also confirmed by previous research (e.g., Wang et al., 2015). Asia coefficient is the smallest; therefore, it reports the smallest difference to the US observations which gets followed on by South American observations. My results show the largest differences for observations in Europe. The results indicate that the benefit of CSR integration and CSR awareness is in Asia most comparable to the US. Observations in South America and Europe show greater differences, indicating that CSR integration is not as valued as it is in US. These findings might be reasoned by an accelerating relevance of CSR in Asia in the recent years which can be seen in Figure 5. Vice versa, the relevance of CSR seems to be stagnating in Europe and South America, proving that CSR is not seemed as advantageous as it is in USA.

The remaining control variables are all significant at least at the 10% level; thus, successfully controlling for possible occurring impacting effects. They also stand in line with the findings of H1, while GNP per Capita is the only exception, now yielding a negative impact. However, although significant at the 1% level, the effect in this regression is negligible, given the magnitude of the coefficient. Conducting an F-test including all used variables in this regression model yield a joint significant effect.

The results for the emerging markets interaction term indeed show that the effect of ESG-performance on FDR diverges between the investigated regions. Hence, engaging in CSR proves to be more rewarding in established markets and remains to be not as profitable for firms in emerging markets. Finally, I can confirm my hypothesis H2. The effect of ESG-performance on FDR is diverging between regions.

H3: Cultural differences, proxied by Hofstede's cultural dimensions moderate the effect of ESG-performance on FDR between regions

To test this hypothesis, I conducted three different regression models, totaling to six regressions. I yield significant results at the 1% level for all ESG-score coefficients along the regression models. For the regression models including Power Distance and LT-Orientation I find respective positive associations between CSR-engagement and FDR. Contrary, I identify a negative association for the regressions including Individualism. The results show the penitence of the newly included interaction terms because I find more stable results compared to my baseline regressions when included the culture interaction terms. Thus, culture proves to be important in explaining results variation between the respective models. The explicit results for the specific interaction terms are outlined in the following:

Power Distance: The regression models find a small negative coefficient for Power Distance-IA, which is found to be significant at the 1% level for the Z-score (P-value = 0.000) and the O-score (P-value = 0.000). This indicates that power distance has a moderating influence on the ESG effect, meaning that the ESG effects decrease with the increase of a culture's distance to power; hence, distributed power and flat hierarchies tend to increase the effect of ESG. CSR initiatives are more prone to be discussed, implemented, and developed when power distance is low (Ringov & Zollo, 2007). On the other hand, high power distance suppresses the CSR discussion between management and employees and decreases external CSR pressure by consumers (Peng & Dashdeleg, 2014). The magnitude of the coefficient shows that the ESG effect reverses when power distance gets sufficiently large. This stands in line with

Thanetsunthorn (2015) and Cohen et al. (1996) who find that high power distance is negatively related to ESG-performance.

Individualism: The regression model shows a significant positive effect of ESG on FDR by resulting a positive coefficient significant at the 1% level for the Z-score and a significant negative coefficient at the 1% level for the O-score, thus indicating the leveraging effect of individualistic societies on the ESG effect. This indicates that societies that primarily rely on their well-being strengthen the effect of ESG on FDR significantly. This does not withstand my expectations, which suggested that CSR is significantly negatively related to individualistic societies (Ho et al., 2012, Berrone & Gomez-Mejia, 2008).

Long-Term-Orientation: I find a significant negative coefficient for Long-Term Orientation-IA at the 1% level (P-value = 0.000) Z-score model. This proves that the relationship between ESG-score and the Z-score is stronger in the short-term, as companies often focus on short-term benefits and short-term profit maximization. The relationship in short-term-oriented societies may be stronger, as companies focus on short-term returns. Given that firm performance is often short-term oriented and directly related to distress risk, a firm's long-term orientation could cause harm to short-term financial performance. Therefore, long-term orientation weakens the impact of environmental practices on firm performance and in turn on financial distress risk (Tsai et al., 2020).

The control variables can be found to successfully control for their respective purposes by predominantly achieving significant results along the stated expectations. They also stand in line with the previous results, conveying the consistence and relevance of the included control variables. Conducting an F-test including all used variables in this regression model yield a joint significant effect. Finally, I can confirm hypothesis H3.

H4: The strength of the effect of ESG-performance proxied by the ESG-score on FDR of a company is dependent on a country's economic development status.

The general results show a significant negative relationship between ESG-performance and FDR; displaying a positive coefficient for the general ESG-score which is significant at the 1% level (P-value = 0.000) in regression model (1). Again, regression model (2) yields contrary results, showing a positive relationship between ESG-performance and FDR.

The declustered regional results stand in line with my expectations. In regression model (1), all models result negative coefficients for all three interaction terms. The results of the interaction

terms Undeveloped-IA and Developed-IA are significant at the 1% level for both models. Generally, the coefficients yield results in similar magnitude in both models, (1) and (2). In model (1) they yield a P-value of 0.000 and 0.000 for Undeveloped and Developed, respectively. In model 2, the variables yield P-values of 0.000 and 0.006, respectively. Solely, the coefficient for undeveloped countries in model (1) remains insignificant. F-tests find joint significant results for all variables: $F(13, 96) = 163.88$. The three independent variables yield a significant F-value of $F(3, 96) = 29.35$.

All results stand in line with my expectations; only the result of the interaction term for developed countries in model (2) raises questions given that model (2) results in contrary findings for developed countries.

Nevertheless, these results confirm the hypothesis that the effect of ESG-performance on FDR differs between regions and degrees of economic developments. Moreover, they also support my expectations that the low-established markets yield a smaller effect than the US markets. As outlined previously, low established markets rank significantly behind in ESG integration, which might explain these results. Further, low investor recognition of high ESG-performance in developing markets could yield lower benefits for engaging in ESG in developing markets, than in developed markets.

It seems that the effect outside of the US is smaller, regardless of the respective region. This gets conveyed by the similar size of the coefficients. Given that the US is the most investigated market and the most ESG aware market in my sample, efficiencies, and benefits of ESG integration could be the most advanced. Emerging countries lack this efficiency.

Finally, I can confirm that economic development indeed plays a role in explaining differences between the effect of ESG-performance on FDR. However, it seems that the weaker effect of ESG-performance on FDR is a non-US finding because the coefficients yield results in similar magnitude while achieving similar significance. Hence, I can confirm hypothesis H4.

5. Robustness Checks

5.1. Time lag - The Matter of Regional Development

During my analyses to test H2, I found that the state of economic development indeed matters for the level of ESG integration and its relevance on firm FDR. However, it might be that the divergence of the effect between the economic development status is just the lag of development emerging markets experience. It might be that developed countries only began to implement corporate CSR measures way earlier than undeveloped countries and that early integration led to earlier broader acknowledgment of CSR integration in developed markets, here: USA. This would signify those undeveloped countries only experience a time lag of ESG integration and finally on the ESG-performance effect on FDR. If this is the case, the relevance of ESG-performance on FDR should decrease when controlling for this lag. Vice versa, constant or increasing coefficients would support my findings in H2.

To test for the existence of a time lag between the regions, I conducted three additional regression analyses, in which I lagged the US observations for 3-, 5- and 8 years, respectively. This tests whether the effect of ESG-performance on FDR in emerging markets is decreasing over the degree of time lag of the US back 3-, 5, or 8 years, respectively. I run three different regression models, all for both dependent variables, Z-score, and O-score. I find consistent results across all three-time lags and both dependent variables. I find a consistent increase of ESG relevance on financial distress with an increase in time lag. These findings are consistent across the regional interaction terms and the general ESG-score. This indicates that the difference in ESG-performance between the emerging markets and the developed markets has been increasing over time. These are quite interesting results, because I expected a decrease of relevance when controlling for time lags.

This might be explained by the available ESG data. In my sample, the maximum time lag is 8 years, meaning that the earliest observations are from the year 2002. Back then, ESG-performance was not widely implemented across all countries in my sample. The broad adoption of CSR measures started later and is still on the surge. Given that public disclosure of ESG-performance is voluntary, it might be that only companies which were already performing well in CSR integration were disclosing CSR performance. The available data back then might be biased to well-performing companies. This is different from today. Nowadays, ESG-performance is still mostly voluntary, however, the public disclosure of ESG-performance is more common; consequently, the data also covers more companies, also more of which are not performing well in ESG. Therefore, it might be that the findings of this robustness check are

subject to the lack of reliable data for ESG-performance. However, the findings still suggest a diverging effect between the relevance of ESG-performance between the different time lags and the economically undeveloped regions. The results do still partly confirm my second hypothesis, indicating a relevance of economic development between undeveloped and developed regions,

5.2. Comparison of International and Domestic Firms

To further proof H3, I further clustered the sample into two subsamples of domestic and international firm observations to test whether non-international firms are more dependent on country specific developments, such as culture and economic development than international firms. Therefore, international firms should experience a significantly smaller effect than domestic firms. This is because international firms are, inter alia, influenced by both, domestic and host-country institutions, shareholders, and cultural values (Ioannou and Serafeim, 2012). Consequently, international firms should be more resilient to country specific effects which diminishes the magnitude of the coefficient

The first models include observations from non-international corporations, meaning that this subsample includes all observations of firms of which the foreign assets to total assets ratio is <10%. The second subsample includes all international firm observations; hence I include all observations of firms with a foreign assets / total assets ratio>=10%. Similarly, to the previous robustness check, I rerun my regression models to test H1. As stated, I expect a larger moderating effect of the GNP Interaction term for domestic firms and a smaller effect for international firms.

$$FDR_{it} = \alpha_{0it} + \beta_1 ESG - Score_{it} + \beta_2 GNP - IA_{it} + \beta_3 FimSize_{it} + \beta_4 Volatility_{it} + \beta_5 AssetTangibility_{it} + \beta_6 ReturnOnAssets_{it} + \beta_7 ReturnOnAssets_{it} + \beta_8 FinancialSlack_{it} + \beta_9 GNPperCapita_{it} + \varepsilon_{it}$$

My results yield significant results for the economic development term only in regression model (1). Regression models (2), (3), and (4) yield insignificant results, hence I only focus on GNP-IA term here. Results of regression yield joint significant results, achieving an F-value of $F(7,46) = 240.31$.

GNP-IA for non-international firms yields a positive coefficient, significant at the 1% level (P-value = 0.002). This indicates that the status of economic development positively impacts the ESG influence on financial distress. Further, the effect is economically larger than in my baseline results, indicating that excluding international firms from the sample strengthens the

influence of economic development. This stands in line with my expectations because non-international firms are more dependent on a country's development status and country specific effects, such as cultural values. Institutional pressure on non-international firms is mono channeled through one country exposure; contrary international firms face institutional pressure from several countries, which blurs the effect of cultural and development specifics on the firms. However, the results must be viewed with caution, given that the ESG-performance coefficient is statistically insignificant.

The insignificance of the GNP coefficient for international firms indicates that no relationship with economic development exists. I hypothesize that the international firms might be dominantly detached from developments in their home countries which might explain the insignificance of the results. The control variables yield results consistent with the previously conducted baseline regressions.

Although the results indirectly support the hypothesis, I cannot confirm the hypothesis given the insignificance of the findings. However, the significant positive coefficient indicates for non-international firms that the relevance of country specifics, such as culture and economic development is increasing and strengthen H3.

5.3. The Moderating Role of Economic Development

In H4, I tested, whether the degree of economic development has a moderating effect on ESG-performance impact. Compared to Cai et al. (2016), my findings were not as robust, yielding inconsistent results across the four applied regression models. I now conducted further analyses to support H4 and test whether the sub-clustering of the dataset yields more convenient results. Following Cai et al. (2016), I expect a stronger effect for high-income countries compared to low-income countries.

$FDR_{it} = \alpha_{0it} + \beta_1 ESG - Score_{it} + \beta_2 GNP - IA_{it} + \beta_3 FimSize_{it} + \beta_4 Volatility_{it} + \beta_5 AssetTangibility_{it} + \beta_6 ReturnOnAssets_{it} + \beta_7 ReturnOnAssets_{it} + \beta_8 FinancialSlack_{it} + \beta_9 GNPperCapita_{it} + + \beta_{10} PowerDistance_{it} + \beta_{11} Individualism_{it} + \beta_{12} LT - Orientation_{it} + \varepsilon_{it}$

I find significant results for the economic development coefficient GNP-IA term for regression models (1) and (3), so for both models using the Z-score as a dependent variable. Both coefficients are significant at the 1% level, yielding a P-value of 0.003 and 0.008 for regression models (1) and (3), respectively. The F-test indicates jointly significant results, respectively.

Interaction coefficients were non-significant for the O-score regression models; hence I exclude them from my interpretation.

I find negative coefficients for low-income countries and positive ones for high-income countries, which indicates a positive moderating effect of economic development on the ESG-performance effect on FDR. These effects support the hypothesis that a moderating effect of economic development exists and is particularly strong in high-income economies. Besides, it must be noted that the ESG-score itself is insignificant for both models, models (3) and (4). This analysis, therefore, confirms my hypothesis. However, given the baseline results, I can finally only partly support hypothesis.

5.4. Two-Stage Least Square Regressions

Reverse causality can be an issue to regressions and occurs when the dependent variables impact the independent variables and not vice versa. In this work, this could occur because firms with a low FDR might invest more resources into their CSR engagement because of more excess capital. As my research proposed, there are regional differences in ESG-performance; hence average country ESG-performance strongly relates to firm ESG-performance. To test endogeneity and reverse causality concerns, which might emerge between the relationship of ESG-performance and financial distress, I conduct an instrumental variables analysis using two-stage least squares regressions, henceforth 2SLSI and use the ESG country mean as an instrumental variable. Although they modeled industry mean rather than country mean, I follow Al-Hadi et al. (2019), Sun & Cui (2014), and Zheng et al. (2019) by conducting a 2SLS regression. I do not use industry mean, because this work especially addresses the inter-regional dispersions, modelling the country mean can hence more accurately support or weaken my hypothesis.

$Stage \quad I: \quad ESG - Score_{it} = \alpha_{0it} + \beta_1 CountryMean_{it} + \beta_2 FimSize_{it} + \beta_3 Volatility_{it} + \beta_4 AssetTangibility_{it} + \beta_5 ReturnOnAssets_{it} + \beta_6 ReturnOnAssets_{it} + \beta_7 FinancialSlack_{it} + \beta_8 GNPperCapita_{it} + + \beta_9 PowerDistance_{it} + \beta_{10} Individualism_{it} + \beta_{11} LT - Orientation_{it} + \varepsilon_{it}$

$Stage \quad II: \quad FDR_{it} = \alpha_{0it} + \beta_1 ESG - Score_{it} + \beta_2 FimSize_{it} + \beta_3 Volatility_{it} + \beta_4 AssetTangibility_{it} + \beta_5 ReturnOnAssets_{it} + \beta_6 ReturnOnAssets_{it} + \beta_7 FinancialSlack_{it} + \beta_8 GNPperCapita_{it} + + \beta_9 PowerDistance_{it} + \beta_{10} Individualism_{it} + \beta_{11} LT - Orientation_{it} + \varepsilon_{it}$

I report my findings in Table 14 and Table 15. The first stage includes regressing the ESG-score against the country mean ESG-score (instrumental variable) including the remaining control variables. The regression model yields a highly significant positive coefficient (P-value=0.000), indicating the appropriateness of this defined instrumental variable. Hence, it is possible to use the county mean ESG-score as instrumental variables in the second stage. In line with the findings in the regression models testing H1, I only find significant results for the O-score models, the findings are robust at the 5% level. Results for the Z-score model remain insignificant. This overall proves a relationship between firm ESG-performance and FDR, even considering endogeneity and reverse causality concerns. This supports my findings throughout my regression model and conveys that endogeneity and reverse causality cannot explain my findings.

6. Limitations and Conclusion

Finally, I stress the limitations of my study. First, company financial information for public companies is mostly validated by external auditors which reduce the risk of accidental or deliberate manipulation or fraud of the reported financial information. Hence, the financial data is mostly trustworthy and can be considered correct. ESG data comprises mostly voluntarily disclosed, often weakly regulated datapoints of non-legally protected terms (e.g., carbon emissions); hence, companies might greenwash their ESG-performance by either, glossing ESG indicators or vice versa, only report those indicators inheriting a beneficial performance.

Another limitation could be the actual scope of the firm observations in my sample size. The variety of the countries and their inherited differences might limit the interpretational ability of my regression results. This is because unobserved, non-included variables might distort the regression results differently, if included. This is especially true for samples with high varieties, e.g., a high number of countries or a high number of different industries where regional, industrial or time characteristics could distort the results.

Moreover, as suggested by Berg et al. (2020), ESG-scores are highly diverging between different providers of ESG-performance measures. ESG-scores are mostly driven by scope and measurement differences of the respective score computation. This means that a score is highly dependent on the scope of the included performance measures but also on the weighting of the inclusion of these performance measures. Given that I only used Refinitivs ESG-score, regression results might yield biased results according to the used ESG-score. It would be interesting to conduct my analyses with other measures of ESG-performance to further confirm the findings.

However, this work enlarged, regardless of the stated limitations, existing literature in several aspects and yielded interesting results. While extensive literature exists on the general effect of ESG-performance on FDR, this work closes several gaps in the research by being the first work to provide a cross-country comparison on the relationship of CSR engagement and FDR. Further, this work, with a few other works, is pioneering in including emerging markets data of South America, Asia, and Europe. Moreover, it is also pioneering in analyzing moderating country-specific variables in the relationship between ESG-performance and CSR; to do so this work includes a country's economic development status and culture to assess the relevance of these indicators on FDR.

Baseline results yielded significant results for one of the FDR-measures, the O-score. Results suggest a positive correlation between CSR engagement and FDR, indicating that CSR-engagement increases a company's FDR. Although this stands contrary to most existing literature, this work is the first one to include a cross-national dataset, which brings variety into the dataset which might have influenced the results. When declustering the researched effects into regions, I yield a significant association between ESG-performance and FDR for all emerging markets regions: Asia, South America, and Europe. I find that the effect ESG-performance has on FDR is significantly smaller in all emerging markets regions, compared to the US. Asian observations show the smallest difference, followed by South American observations; The difference is the largest for emerging markets in Europe.

Interestingly, also country-specific effects are important in explaining varieties of the ESG-effect. In terms of culture, I find that Power Distance, Individualism, and Long-Term Orientation have moderating effects on the effect of ESG-performance on FDR. I find that distributed power, high individualism, and short-term orientation strengthen the effect of ESG-performance. Similar accounts for a country's economic development status, where the ESG-effect is increasing with a country's respective GDP per capita. Finally, my results get mostly confirmed by my robustness checks.

Although this work addressed several gaps in existing research, it would be highly interesting to see other researchers also fill this gap and conduct similar analyses in emerging markets. This will be especially interesting as emerging markets develop, the relevance of CSR engagement surges, more firms participate in CSR, and data becomes more readily available; finally, given the current CSR mountings around the world, this development is only a matter of time.

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Appendix

Table 4: Correlation Matrix I

The table outlines the correlation between the applied dependent variables and the control variables. Dependent variables are displayed post-transformation. Sample consists of 8301 observations from 2010 to 2019.

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	Z-score	1								
(2)	O-score	-0.642***	1							
(3)	ESG-score	-0.0334**	0.104***	1						
(4)	GNP per Capita	0.0820***	0.0811***	0.268***	1					
(5)	Individualism	0.110***	0.0960***	0.317***	0.854***	1				
(6)	Volatility	-0.129***	0.0630***	-0.193***	-0.194***	-0.170***	1			
(7)	Asset Tangibility	-0.280***	0.113***	0.0713***	-0.117***	-0.100***	0.00488	1		
(8)	Firm Size	-0.371***	0.231***	0.428***	0.347***	0.344***	-0.164***	0.138***	1	
(9)	Return on Assets	0.492***	-0.361***	0.0488***	-0.0659***	-0.0198	-0.205***	-0.113***	-0.184***	1

Table 5: Correlation Matrix II

The table outlines the correlation between the applied independent variables (interaction terms). Independent variables are displayed post-transformation. Sample consists of 8301 observations from 2010 to 2019.

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	USA	1								
(2)	Asia	-0.537***	1							
(3)	South America	-0.275***	-0.230***	1						
(4)	Europe	-0.157***	-0.132***	-0.0675***	1					
(5)	Individualism	0.945***	-0.458***	-0.142***	-0.0156	1				
(6)	Power Distance	-0.114***	0.500***	0.357***	0.112***	0.140***	1			
(8)	LT Orientation	-0.239***	0.704***	0.00651	0.0674***	-0.107***	0.617***	0.482***	1	
(9)	GNP-Dummy	0.955***	-0.421***	-0.246***	-0.128***	0.920***	-0.00335	0.308***	-0.0437***	1

Table 6: Description of the Variables

The table describes the applied dependent, independent and control variables used in the regression models.

Variables	Definition
Panel A	
Dependent Variables	
Altman Z-score (Non-transformed)	Altman's (1968) Z-score for bankruptcy prediction. Calculated as: Z-score = 1.2 * (Working Capital / Total Assets) + 1.4 * (Retained Earnings / Total Assets) + 3.3 * (EBIT / Total Assets) + 0.6 * (Market Value of Equity / Book Value of Total Liabilities) + 0.99 * (Sales / Total Assets)
Ohlson O-score (Non-transformed)	Ohlson's (1980) O-score for bankruptcy prediction. Calculated as: O-score = -1,32 - 0,407 * log(Total Assets) + 6,03 * (Total Liabilities / Total Assets) - 1,43 * (Working Capital / Total Assets) + 0,076 * (Current Liabilities / Current Assets) - 1,72 * (Total Liabilities Dummy) - 2,37 * (Net Income / Total Assets) - 1,83 * (Funds from Operations / Total Liabilities) + 0,285 * (Net Loss Dummy) - 0,521 * (Net Income_t - Net Income_t-1 / |Net Income_t| + |Net Income_t-1|))
Bankruptcy Probability (Ohlson's O-score)	$$P =$$ where P is the probability of bankruptcy and X represents the respective O-score. Probability ranks from 0 to 1. Financial Distress Risk and O-score are positively correlated.
Z-score / O-score (transformed)	Left-Sided BoxCox (1964) parametric transformation to normalize dependent variables. Model transforms γ to $\gamma^{(\lambda)}$. λ is the vector transforming the variables. γ is Z-score (non-transformed) and Ohlson's bankruptcy probability (non-transformed $\gamma^{(\lambda)} =$)
Panel B	
Independent Variables	
ESG-score	ESG-score (Refinitiv Eikon) to proxy ESG-performance
Interaction Terms	
Asia-IA	ESG-score * Asia-Dummy (1 if observation in Asia, 0 otherwise)
Europe-IA	ESG-score * Europe-Dummy (1 if observation in Europe, 0 otherwise)
South America-IA	ESG-score * South America-Dummy (1 if observation in South America, 0 otherwise)
GNP per Capita	GNP per Capita for the respective country
GNP-IA	GNP per Capita * ESG-score
Culture	Hofstede's (1980) cultural dimensions to proxy culture
Power Distance	Power Distance-Score for the respective country
Power Distance-IA	ESG-score * Power Distance-Score
Individualism	Individualism-Score for the respective country
Individualism-IA	ESG-score * Individualism-Score
LT-Orientation	Long-Term Orientation-Score for the respective country
LT-Orientation IA	ESG-score * LT-Orientation-Score
Panel C	
Control Variables	
Firm Size	Natural logarithm of a firm's total assets
Volatility	Standard deviation of monthly stock returns.
Asset Tangibility	Total fixed assets / total assets
Return on Assets	Net income / total assets
Financial Slack	Cash and Cash equivalents/Total Assets

Table 7: Regression Results - Hypothesis 1

This regression model tests H_1 and displays the coefficients of the transformed dependent variables of the Altman Z-score and Ohlson's O-score on Refinitiv's ESG-score in the period of 2010 – 2019. Region, year, and industry fixed effects are applied. Robust standard errors are displayed in parentheses. ***, ** and * represent the significance level at 1%, 5% and 10%, respectively.

VARIABLES	(1) Z-score	(2) O-score
ESG-score	0.00071	0.00187***
	(0.00044)	(0.00047)
Volatility	-1.88986***	1.14094***
	(0.23585)	(0.13623)
Asset Tangibility	-0.10238**	-0.10342***
	(0.04437)	(0.03436)
Firm Size	-0.18654***	0.03745***
	(0.00725)	(0.00634)
Return on Assets	3.84540***	-2.26522***
	(0.31517)	(0.15065)
Financial Slack	1.42557***	-1.09407***
	(0.07386)	(0.08884)
GNP per Capita	0.00000	-0.00002
	(0.00094)	(0.00074)
Power Distance	0.00153	0.00022
	(0.00112)	(0.00079)
Individualism	0.00726***	0.00010
	(0.00069)	(0.00045)
Long Term Orientation	0.00213***	-0.00061
	(0.00052)	(0.00044)
Constant	3.12456***	-1.63336***
	(0.16989)	(0.11432)
Observations	8,301	8,301
R^2	0.43613	0.24274
IFE	Yes	Yes
RFE	Yes	Yes
YFE	Yes	Yes

Table 8: Regression Results - Hypothesis 2

This regression model tests H1 and displays the coefficients of the transformed dependent variables of the Altman Z-score and Ohlson's O-score on the regional interaction terms the period of 2010 – 2019. Region, year, and industry fixed effects are applied. Standard errors are displayed in parentheses. Robust standard errors in parentheses. ***, ** and * represent the significance level at 1%, 5% and 10%, respectively.

VARIABLES	(1) Z-score	(2) O-score
ESG-score	0.00309***	0.00174***
	(0.00052)	(0.00048)
Asia-IA	-0.00349***	0.00046
	(0.00065)	(0.00039)
South America-IA	-0.00416***	-0.00028
	(0.00056)	(0.00044)
Europe-IA	-0.00652***	-0.00037
	(0.00072)	(0.00046)
Volatility	-1.86448***	1.15099***
	(0.23295)	(0.13585)
Asset Tangibility	-0.10637**	-0.10759***
	(0.04296)	(0.03520)
Firm Size	-0.19267***	0.03796***
	(0.00760)	(0.00622)
Return on Assets	3.79120***	-2.27420***
	(0.31457)	(0.15020)
Financial Slack	1.41087***	-1.09301***
	(0.07337)	(0.08890)
GNP per Capita	-0.00340***	-0.00031
	(0.00097)	(0.00070)
Power Distance	0.00058	-0.00022
	(0.00114)	(0.00073)
Individualism	0.00606***	0.00010
	(0.00065)	(0.00055)
Long Term Orientation	0.00172***	-0.00090*
	(0.00052)	(0.00051)
Constant	3.45707***	-1.59097***
	(0.17548)	(0.12360)
Observations	8,301	8,301
R^2	0.44205	0.24321
IFE	Yes	Yes
RFE	Yes	Yes
YFE	Yes	Yes

Table 9: Regression Results - Hypothesis 3

This regression model tests H1 and displays the coefficients of the transformed dependent variables of the Altman Z-score and Ohlson's O-score on the regional interaction terms p, the period of 2010 – 2019. Region, year, and industry fixed effects are applied. Robust standard errors are displayed in parentheses. ***, ** and * represent the significance level at 1%, 5% and 10%, respectively.

VARIABLES	(1) Z-score	(2) O-score	(3) Z-score	(4) O-score	(5) Z-score	(6) O-score
ESG-score	0.00733***	-0.00086	-0.00301***	0.00243***	0.00445***	0.00180***
	(0.00119)	(0.00087)	(0.00078)	(0.00050)	(0.00060)	(0.00061)
Power Distance-IA	-0.00011***	0.00005***				
	(0.00002)	(0.00001)				
Power Distance	0.00275*	-0.00170*				
	(0.00152)	(0.00089)				
Individualism-IA			0.00007***	-0.00001*		
			(0.00001)	(0.00001)		
Individualism			0.00249***	0.00103***		
			(0.00062)	(0.00036)		
LT-Orientation-IA					-0.00008***	0.00000
					(0.00001)	(0.00001)
LT-Orientation					0.00140**	-0.00070*
					(0.00064)	(0.00036)
Volatility	-1.75569***	1.14226***	-1.86219***	1.12823***	-1.74039***	1.14040***
	(0.22569)	(0.13617)	(0.23302)	(0.13795)	(0.22545)	(0.14012)
Asset Tangibility	-0.15064***	-0.10775***	-0.10209**	-0.10461***	-0.12158***	-0.10370***
	(0.04426)	(0.03499)	(0.04376)	(0.03471)	(0.04347)	(0.03395)
Firm Size	-0.18476***	0.03912***	-0.18647***	0.03775***	-0.18250***	0.03791***
	(0.00744)	(0.00635)	(0.00785)	(0.00645)	(0.00741)	(0.00647)
Return on Assets	3.95601***	-2.25177***	3.81135***	-2.25413***	3.87167***	-2.26247***
	(0.32956)	(0.14432)	(0.31386)	(0.14855)	(0.32204)	(0.14916)
Financial Slack	1.32958***	-1.10493***	1.43189***	-1.09735***	1.38340***	-1.09357***
	(0.08362)	(0.08789)	(0.07576)	(0.08935)	(0.07901)	(0.08666)
GNP per Capita	-0.00060	0.00025	-0.00054	0.00005	-0.00033	-0.00002
	(0.00092)	(0.00077)	(0.00094)	(0.00075)	(0.00095)	(0.00074)
Constant	3.35984***	-1.59543***	3.58041***	-1.69185***	3.40162***	-1.61496***
	(0.15743)	(0.10619)	(0.12969)	(0.09532)	(0.13172)	(0.10056)
Observations	8,301	8,301	8,301	8,301	8,301	8,301
R^2	0.42360	0.24314	0.43769	0.24252	0.42636	0.24273
IFE	Yes	Yes	Yes	Yes	Yes	Yes
RFE	Yes	Yes	Yes	Yes	Yes	Yes
YFE	Yes	Yes	Yes	Yes	Yes	Yes

Table 10: Regression Results - Hypothesis 4

This regression model tests H4 and displays the coefficients of the transformed dependent variables of the Altman Z-score and Ohlson's O-score on the regional interaction terms the period of 2010 – 2019. Region, year, and industry fixed effects are applied. Robust standard errors are displayed in parentheses. Robust standard errors in parentheses. ***, ** and * represent the significance level at 1%, 5% and 10%, respectively.

VARIABLES	(1) Z-score	(2) O-score
ESG-score	0.00310***	0.00148***
	(0.00051)	(0.00047)
Undeveloped-IA	-0.00119	0.00162***
	(0.00073)	(0.00045)
Semi-developed-IA	-0.00426***	0.00185***
	(0.00053)	(0.00034)
Developed-IA	-0.00493***	-0.00101***
	(0.00063)	(0.00036)
GNP per Capita	-0.00054	0.00442**
	(0.00031)	(0.00033)
Volatility	-1.80520***	1.08626***
	(0.23417)	(0.13621)
Asset Tangibility	-0.10939**	-0.08683**
	(0.04362)	(0.03466)
Firm Size	-0.19478***	0.03431***
	(0.00759)	(0.00631)
Return on Assets	3.78248***	-2.28387***
	(0.31314)	(0.15050)
Financial Slack	1.40234***	-1.10108***
	(0.07365)	(0.09031)
Power Distance	0.00182	-0.00055
	(0.00115)	(0.00082)
Individualism	0.00510***	-0.00033
	(0.00060)	(0.00046)
Long-Term Orientation	0.00272***	0.00021
	(0.00059)	(0.00045)
Constant	3.31414***	-1.61361***
	(0.18457)	(0.11741)
Observations	8,301	8,301
R^2	0.44446	0.24663
IFE	Yes	Yes
RFE	Yes	Yes
YFE	Yes	Yes

Table 11: Regression Results - Robustness Check – Time Lag

This regression model tests the robustness of my regressions and displays the coefficients of the transformed dependent variables of the Altman Z-score and Ohlson's O-score on the regional interaction terms the period of 2010 – 2019 in which all US-observations are lagged for 3, 5, and 8 years. Region, Year, and industry fixed effects are applied. Standard errors are displayed in parentheses. Robust standard errors in parentheses. ***, ** and * represent the significance level at 1%, 5% and 10%, respectively.

VARIABLES	(1) Z-score-3Y	(2) O-score- 3Y	(1) Z-score-5Y	(2) O-score-5Y	(1) Z-score-8Y	(2) O-score-8Y
ESG-score	0.00306***	0.00004	0.00393***	-0.00071	0.00521***	-0.00098*
	(0.00049)	(0.00049)	(0.00057)	(0.00052)	(0.00062)	(0.00054)
Asia	-0.0442***	0.00231***	-0.00498***	0.00291***	-0.00627***	0.00318***
	(0.00080)	(0.00073)	(0.00084)	(0.00075)	(0.00089)	(0.00075)
South America	-0.00248**	0.00169*	-0.00319***	0.00225**	-0.00438***	0.00249***
	(0.00105)	(0.00092)	(0.00108)	(0.00094)	(0.00113)	(0.00096)
Europe	-0.00611***	0.00361**	-0.00703***	0.00440***	-0.00833***	0.00462***
	(0.00147)	(0.00153)	(0.00148)	(0.00154)	(0.00146)	(0.00150)
Volatility	-1.92083***	1.17150***	-1.95990***	1.26902***	-2.15782***	1.18563***
	(0.26169)	(0.16475)	(0.29683)	(0.17018)	(0.29583)	(0.16555)
Asset Tangibility	-0.08950**	-0.10985***	-0.12983***	-0.09621**	-0.14823***	-0.11889***
	(0.04354)	(0.03777)	(0.04520)	(0.03953)	(0.04722)	(0.04025)
Firm Size	-0.18417***	0.03994***	-0.19288***	0.04841***	-0.19488***	0.04983***
	(0.00783)	(0.00737)	(0.00840)	(0.00683)	(0.00883)	(0.00665)
Return on Assets	4.31796***	-2.64342***	3.78174***	-2.39137***	3.64759***	-2.42994***
	(0.33827)	(0.17865)	(0.32338)	(0.16573)	(0.31590)	(0.16820)
Financial Slack	1.38175***	-1.14073***	1.47247***	-1.19236***	1.46170***	-1.14527***
	(0.07565)	(0.07813)	(0.07885)	(0.08225)	(0.08123)	(0.08533)
GNP per Capita	-0.00323***	-0.00127*	-0.0030***	-0.00066	-0.0027***	-0.00019
	(0.00104)	(0.00067)	(0.00107)	(0.00079)	(0.00101)	(0.00076)
Power Distance	-0.00140	-0.00019	-0.00095	-0.00045	-0.00078	-0.00078
	(0.00119)	(0.00089)	(0.00118)	(0.00088)	(0.00120)	(0.00089)
Individualism	0.00323**	0.00085	0.00337***	0.00066	0.00349***	0.00072
	(0.00127)	(0.00095)	(0.00125)	(0.00096)	(0.00126)	(0.00095)
LT- Orientation	0.00130**	-0.00086	0.00116**	-0.00086*	0.00129**	-0.00100*
	(0.00059)	(0.00052)	(0.00058)	(0.00052)	(0.00057)	(0.00051)
Constant	3.67054***	-1.60717***	3.81868***	-1.75571***	3.83324***	-1.73584***
	(0.1498)	(0.13499)	(0.15530)	(0.12924)	(0.16122)	(0.12592)
Observations	8,005	8,005	7,724	7,724	7,272	7,272
R^2	0.48296	0.25505	0.44573	0.23604	0.44496	0.24591
IFE	Yes	Yes	Yes	Yes	Yes	Yes
RFE	Yes	Yes	Yes	Yes	Yes	Yes
YFE	Yes	Yes	Yes	Yes	Yes	Yes

Table 12: Regression Results - Robustness Check – International vs. Domestic

This regression model tests the robustness of my regressions and displays the coefficients of the transformed dependent variables of the Altman Z-score and Ohlson's O-score on the regional interaction terms the period of 2010 – 2019. Regression model (1) & (2) only include domestic observations, so where (Foreign Assets/Total Asset)>=10%. Regression models (3) & (4) only include international firms, thus observations where (Foreign Assets/Total Assets)<10%. Region, Year, and industry fixed effects are applied. Standard errors are displayed in parentheses. Robust standard errors in parentheses. ***, ** and * represent the significance level at 1%, 5% and 10%, respectively.

VARIABLES	(1) - DOM Z-score	(2) - DOM O-score	(3) - INT Z-score	(4) - INT O-score
ESG-score	-0.00145**	0.00191***	-0.00045	0.00389***
	(0.00066)	(0.00057)	(0.00176)	(0.00128)
GNP-IA	0.00007***	-0.00000	0.00006	-0.00005
	(0.00001)	(0.00001)	(0.00005)	(0.00003)
Volatility	-1.87026***	1.18777***	-2.15523***	0.70857**
	(0.25376)	(0.14558)	(0.41068)	(0.35155)
Asset Tangibility	-0.12656***	-0.05320	0.06132	-0.58200***
	(0.04613)	(0.03538)	(0.10687)	(0.09656)
Firm Size	-0.19377***	0.04198***	-0.15829***	0.01325
	(0.00820)	(0.00655)	(0.01078)	(0.01670)
Return on Assets	3.85161***	-2.20624***	3.51621***	-2.47853***
	(0.34796)	(0.16002)	(0.37668)	(0.21951)
Financial Slack	1.38027***	-1.03820***	1.72779***	-1.46211***
	(0.08158)	(0.08375)	(0.17669)	(0.23312)
GNP per Capita	-0.00356***	0.00022	-0.00353	0.00179
	(0.00106)	(0.00097)	(0.00446)	(0.00269)
Individualism	0.00759***	-0.00004	0.00085	0.00399**
	(0.00069)	(0.00041)	(0.00154)	(0.00168)
Power Distance	0.00143	0.00056	-0.00513	0.00211
	(0.00118)	(0.00087)	(0.00340)	(0.00250)
LT-Orientation	0.00237***	-0.00116***	-0.00468***	0.00521***
	(0.00051)	(0.00042)	(0.00133)	(0.00131)
Constant	3.32571***	-1.72308***	3.81379***	-1.70915***
	(0.18943)	(0.12184)	(0.44032)	(0.32640)
Observations	7,317	7,317	984	984
R-squared	0.43784	0.24312	0.47735	0.30777
IFE	Yes	Yes	Yes	Yes
RFE	Yes	Yes	Yes	Yes
YFE	Yes	Yes	Yes	Yes

Table 13: Regression Results - Robustness Check III – Economic Development

This regression model tests the robustness and displays the coefficients of the transformed dependent variables of the Altman Z-score and Ohlson's O-score on the economic development (GNP-IA) interaction terms in the period of $2010 - 2019$ Region, year and industry fixed effects are applied. Standard errors are displayed in parentheses. Robust standard errors in parentheses. ***, ** and * represent the significance level at 1%, 5% and 10%, respectively.

VARIABLES	(1) Z-score	(2) O-score
ESG-score	-0.00127**	0.00213***
	(0.00061)	(0.00052)
GNP-IA	0.00007***	-0.00001
	(0.00001)	(0.00001)
GNP-IA	-0.00346***	0.00043
	(0.00109)	(0.00095)
Volatility	-1.88783***	1.14067***
	(0.23448)	(0.13613)
Asset Tangibility	-0.10797**	-0.10268***
	(0.04413)	(0.03434)
Firm Size	-0.18937***	0.03783***
	(0.00751)	(0.00632)
Financial Slack	1.41875***	-1.09317***
	(0.07454)	(0.08864)
Return on Assets	3.82717***	-2.26280***
	(0.31469)	(0.15039)
Power Distance	0.00121	0.00026
	(0.00111)	(0.00081)
Individualism	0.00711***	0.00012
	(0.00068)	(0.00046)
LT-Orientation	0.00190***	-0.00058
	(0.00052)	(0.00044)
Constant	3.30785***	-1.65769***
	(0.17723)	(0.11811)
Observations	8,301	8,301
R^2	0.43785	0.24280
IFE	Yes	Yes
RFE	Yes	Yes
YFE	Yes	Yes

Table 14: Regression Results - Robustness Check IV.I – 2SLS Regressions

The regression model displays the coefficients from the regression of the ESG-score on the respective ESG-score country mean in the period of 2010-2019. Region, year, and industry fixed effects are applied. Robust standard errors are displayed in parentheses. Robust standard errors in parentheses. ***, ** and * represent the significance level at 1%, 5% and 10%, respectively.

VARIABLES	(1) ESG-score
Country Mean	0.92693***
	(0.04158)
Volatility	-23.82756***
	(5.84072)
Asset Tangibility	9.00739***
	(1.27267)
Firm Size	6.20020***
	(0.17848)
Return on Assets	29.00464***
	(4.99186)
Financial Slack	7.92857***
	(1.58300)
GNP per Capita	-0.00020***
	(0.00003)
Individualism	-0.07114***
	(0.01939)
Long Term Orientation	-0.04935***
	(0.01872)
Power Distance	-0.21259***
	(0.02739)
Constant	-73.76529***
	(4.60837)
Observations	8,301
R^2	0.34754
IFE	Yes
RFE	Yes
YFE	Yes

Table 15: Regression Results - Robustness Check IV.II – 2SLS Regressions

The regression model displays the coefficients from the regression of the ESG-score on the respective ESG-score country mean in the period of 2010-2019. Region, year, and industry fixed effects are applied. Robust standard errors are displayed in parentheses. Robust standard errors in parentheses. ***, ** and * represent the significance level at 1%, 5% and 10%, respectively.

VARIABLES	(1) Z-score	(2) O-score
ESG-score	-0.00180	0.00290**
	(0.00226)	(0.00147)
Volatility	-1.77484***	0.85997***
	(0.30774)	(0.16608)
Asset Tangibility	-0.23207***	-0.11494**
	(0.08210)	(0.04970)
Firm-Size	-0.17458***	0.02291*
	(0.01890)	(0.01274)
Return on Assets	4.13129***	-2.27411***
	(0.35546)	(0.17471)
Financial Slack	1.57635***	-1.26187***
	(0.08437)	(0.08974)
GNP per Capita	-0.00000	0.00000**
	(0.00000)	(0.00000)
Individualism	0.00804***	-0.00080
	(0.00067)	(0.00051)
Long Term Orientation	0.00208***	-0.00096*
	(0.00073)	(0.00054)
Power Distance	0.00024	0.00227**
	(0.00181)	(0.00111)
Constant	3.11328***	-1.51744***
	(0.16066)	(0.12435)
Observations	8,301	8,301
R^2	0.46490	0.24834
IFE	Yes	Yes
RFE	Yes	Yes
YFE	Yes	Yes