The Value Relevance of CSR Performance
the influence of national culture

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Content

1. Introduction

In his well-known paper, Milton Friedman (1970) famously stated that "there is one and only one social responsibility of business – to use its resources and engage in activities designed to increase its profits" (Friedman, 1970, p.6). The only nuance he placed on this statement is that it should do so "so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud" (Friedman, 1970, p.6).

With his statement, Friedman laid out the foundation for a dominant stream of literature within the economic field of science, which is categorized as *shareholder theory*. In more classical times of economic research, shareholder theory was to be characterized as the main view on corporate governance. It consistently emphasized the duty of companies to focus solely on their owners: the shareholders. In that sense, firms were to allow shareholders to make returns on their investment by increasing firm value (Fontrodona & Sison, 2006). But the times they are a-changing.

Throughout recent decades, shareholder theory has been frequently criticized, raising the need for a new view upon corporate governance. A need that gave rise to *stakeholder theory*. Within this new view, companies are urged to expand their vision from a sole focus on shareholders, towards a broader scope in which they include all that are influenced by the actions of that particular firm (Freeman, 2015). This new view gave rise to an enlarged emphasis on the actions of firms within the social and environmental sense: with regards to the firms' employees, governmental bodies, and, commonly mentioned, climate change. This practice is generally named Corporate Social Responsibility (CSR) or Environmental Sustainable Governance (ESG).

The newly envisioned purpose of enterprises not only has its influence on the real actions of these entities but also on the type of firm disclosures. Where, traditionally, firms primarily disclosed financial accounting information to outsiders, they have increasingly started to engage in the voluntary disclosure of information concerning their CSR performance (Alotaibi & Hussainey, 2016). As CSR disclosure, or social reporting, is relatively new, research has been accumulating at a fast pace to determine, among other things, the usefulness of CSR information to investors and its repercussions for firm value.

The question whether CSR reporting has its influence on firm value is characterized as an inquiry into the value relevance of CSR information. Research on this topic has found mixed results. Some find that CSR performance information is positively related to firm value (Aureli et al., 2020; Fazzini & Dal Maso, 2016; Jain et al., 2016), in the sense that well-performing firms tend to be rewarded for their efforts. Other research has amounted to the conclusion that a negative relationship is present between the issuing

of a social report and firm value (Cardamone et al., 2012; Carnevale et al., 2009). Other research has amounted to insignificant results (Cordazzo et al., 2020).

These mixed results place doubts in the face of the usefulness of social reporting for shareholders and firms alike. This research builds upon these mixed results in the sense that it attempts to explain the variation among these results found in this previous research. It does so by addressing national culture as an influential factor within the relationship between CSR performance and firm value.

Culture as an explanatory factor has not been considered by previous research, as most research has focused on specific countries (Alotaibi & Hussainey, 2016; Cardamone et al., 2012; Cordazzo et al., 2020; Miralles-Quirós et al., 2018; Setyahuni & Handayani, 2020). The varying results found in previous research could well be due to this primary focus on the analysis in specific countries. To restate, the variance in results could be explained by differences in the countries that they are excavated. Consequently, there is necessity for a cross-nation study, which is exactly what this paper reports.

National culture has been proven to influence CSR engagement (Peng et al., 2014; Thanetsunthorn, 2014) and performance (Ringov & Zollo, 2007). Also, culture has been associated as a significant explanatory factor in the trading behavior of investors, such as herding (Chang & Lin, 2015), risk-taking (Ashraf et al., 2016), home-bias (Wang et al., 2019), and reactions to environmental changes (Lee et al., 2019).

Considering the empirical results on the influence of culture on trading behavior and a firm's CSR engagement, it could prove to be an important explanatory factor for the value relevance of CSR performance information. In that sense, the variation in previous research could be driven by the variation in national culture between the countries studied independently throughout the literature. In other words: the value relevance of CSR performance information might differ in different cultural environments. This proposed influence stems from the cultural influence on the respective weighting of CSR information in the total information mix by different investors with different cultural backgrounds.

This paper addresses these speculations by answering this question: "to what extent does national culture moderate the relationship between CSR performance and firm value?" This question will be analyzed thoroughly by employing an empirical analysis, based on panel data. A fixed effects model is estimated, ultimately answering the posed research question with the support for several hypotheses, indicating significant moderating effects of national culture within the posed value relevance relationship.

By investigating the influence of culture, this thesis elaborates on a growing body of literature by expanding knowledge beyond the objective character of information, towards an understanding of the subjective perception of CSR information. To restate, this thesis expands existing knowledge concerning the usefulness of information towards a broader view in which investors look upon the same information from different perspectives, driven by their cultural backgrounds.

Moreover, this thesis has practical relevance for both firms and policy makers. From a corporate perspective, this thesis adds to an overall understanding of investor preferences and values, as it directly inquires which investors tend to value CSR to a higher extent than others, by looking at their cultural predispositions. This supports a vital part of business in the sense that it allows firm executives to better understand their shareholders, increasing potential for efficient value-increasing firm practices. For policy makers, this paper serves a major purpose in the battle for a better world. Moving into an energy transition in a world of growing inequality, CSR practice carries great promise for the future. By analyzing culture, this thesis adds to an understanding of CSR-supporting and CSR-challenging values within societies. This knowledge can prove to be essential, aiming at fostering the most effective policies to promote CSR practice amongst firms worldwide.

The remainder of this thesis is structured as follows. In section 2, a thoroughly constructed literature review is provided, culminating into the formulation of numerous hypotheses that will be tested empirically. Section 3 sets out to discuss the methodological approach envisioned for the evaluation of the posed hypotheses. Section 4, then, continues to discuss the empirical results and section 5 includes a robustness test based on an alternate method of analysis. Section 6 provides a conclusion to this thesis, while section 7 concludes this thesis with a discussion of implications and recommendations.

2. Literature Review

In this section, prior literature will be discussed. Through this discussion, this section establishes a sense of the currently existing knowledge as well as the gaps in that knowledge. This section will first consider the value relevance approach in its basic sense. Then, the literature on the value relevance of CSR information will be discussed, emphasizing the relevant differences in findings. These differences will, then, be related to culture in the subsequent part of this section. All dimensions of Hofstede will be discussed and related to CSR in turn. These individual discussions will be translated into hypotheses. These hypotheses will be stated in their relevant segments in turn.

2.1 The Value Relevance Approach

The value relevance approach is an empirical operationalization of the decision usefulness approach. Therefore, it is essential to define what this foundational approach states. The decision usefulness approach has guided standard setting in accounting and has, therefore, been very relevant in the realm of information disclosures. The approach mandates that disclosed information should be decision useful to investors (Scott & O'Brien, 2020). So, when is information decision useful?

Within the decision usefulness approach, information is deemed as decision useful when it changes the beliefs of investors about a firm's future performance (Scott & O'Brien, 2020). In that sense, information should have the ability to make investors revise their view on the future performance and profitability of a certain company. This ability to change beliefs makes the piece of information relevant for investors. Otherwise stated, if this particular piece of information were to be omitted from disclosure, the information mix as a whole would lead to other financial decision-making.

The decision usefulness approach is theoretical in essence. However, merely hypothesizing that certain pieces of information are indeed decision useful is not entirely satisfactory from an empirical point of view. Therefore, it is essential for researchers to establish an empirics-based understanding of what information is decision useful to investors. The knowledge these researchers produce then shapes the decisions made by disclosure regulators.

Approaching the decision usefulness from an empirical perspective culminates into the value relevance approach. This approach essentially tests whether the disclosure of a particular piece of information was followed by a market reaction, indicated by a change in the firm's share price. If a significant market reaction follows from the information disclosure, the information is found to be value relevant, confirming its decision usefulness (Scott & O'Brien, 2020).

To create an understanding of this approach, it is essential to understand why a market reaction indicates decision usefulness. In Scott & O'Brien (2020), the channel through which value relevance flows is substantiated clearly. The authors propose the following process. Before the disclosure of information, investors have their own beliefs about the future prospects of a company's performance. When information is disclosed, investors will analyze the information, and revise their prior beliefs based on new information. This shapes new beliefs upon which investors will act in financial markets. As a result of altering trading behavior, a market reaction occurs. Please note that a non-essential piece of information would never have the ability to create a market reaction, as it would not have the ability to alter investor beliefs. Therefore, only decision useful information will be value relevant.

Concluding, value relevance operationalizes what information is decision useful to investors. Information is decision useful when it alters investor beliefs about the future prospects of a firm. This mutation of beliefs will result in a new mix of investment decisions in the market, leading to a significant shift in the share price as a result of the information disclosure. Such significant share price shifts, either negative or positive, confirm the value relevance of that piece of information. Thus, by inspecting the contribution of a piece of information to share price movements, one inspects whether or not investors use a certain piece of information when making financial decisions.

2.2 The Value Relevance of CSR information

Recent trends in corporate disclosure have led to an increasing number of firms disclosing information about their CSR performance. This raised the question whether this information can be useful to investors, leading to a relatively new strand of literature within the value relevance realm: one that investigates the value relevance of CSR information.

As a starting point, it is useful to establish an understanding of how and why CSR information can be useful to investors. A survey-based approach has provided the insight that CSR information is useful to investors as these investors reported to actively use this form of information in the process of revising their beliefs. Investors are found to use CSR information to assess firm reputation, risk and long-term performance prospects (Amel-Zadeh & Serafeim, 2018). Another survey indicated that the vast majority (73%) of respondents, which are financial analysts and portfolio managers, use CSR information in their decision-making (CFA Institute, 2015). It has also been shown that requirements and usages of CSR information are increasing among investors (IFAC, 2012).

So, surveys have pointed out that investors should be using CSR information in order to revise their beliefs. According to these surveys, most investors are using CSR information, although it should be noted that most of these surveys were based on finance professionals and, therefore, do not entirely capture the

behavior of private investors, as these investors are generally less experienced than the professional traders that were questioned in these specific inquiries.

Yet, the survey-based literature does shed light on an important insight: the use of CSR information is of financial nature. What does this mean? The financial use of CSR information is underscored by investors reporting that they actively revise their beliefs about future financial performance, firm risk and profitability. This shows that investors do not necessarily only use CSR information in order to invest in firms that are in line with their personal ethics. Rather, it shows the potential for CSR information to signal future prospects of financial nature. This insight greatly contributes to the proposed value relevance of CSR performance, as it increases the general decision usefulness of CSR information.

Having discussed the potential shown by survey-based research, the remaining question is whether or not the decision usefulness of CSR information can be confirmed through quantitative methods. These strands of literature fall into the value relevance realm, as they look at the influence of information on financial performance. Specifically, these studies inspect share price movements and their relation to CSR information.

Several papers find significant positive reactions of firm value to CSR performance information. For example, Bird et al. (2007) found that investors value firms that satisfy minimum CSR requirements at higher rates than firms that do not meet these requirements. Further, Fazzini & Da Maso (2016) find that environmental disclosures increase firm value. Govindan et al. (2021) find that CSR performance significantly positively influences firm value. Also, in an empirical assessment of Brazilian firms, investors are found to positively value CSR practices, therefore giving positive reactions to CSR information (Miralles-Quirós et al., 2018). Similar valuations have been found in Indonesia (Setyahuni & Handayani, 2020).

Other methods have been employed as well. For example, Jain et al. (2016) looked into the behavior of short-sellers. They conclude that short-sellers tended not to target firms that report on CSR. This, as the authors state, is an indication of those firms having a lower tendency to have decreasing share prices, indicating positive reactions to CSR performance information.

The papers discussed, therefore, report a positive influence of CSR performance information on firm value, thereby confirming the value relevance of CSR performance information. Overall, firms that perform well with regard to CSR increase their share price. Yet, focus should also be expanded towards the value relevance of CSR disclosures in general, without looking at performance itself. By expanding focus towards these papers, substantially mixed results are uncovered.

First of all, we observe negative results, entailing that these papers report significantly negative market reactions to CSR performance information. For example, Carnevale et al. (2009) have found negative price reactions to CSR disclosures in Italy. This states that Italian firms' stock, on average, is traded at a discount when a firm discloses on their CSR practices as opposed to firms that do not. Another, more recent, empirical review in Italy has yielded similar results, stating that results found do not change due to regulatory changes in the EU (Cardamone et al., 2012). As such, CSR reporting need not be rewarding for firms, as these papers show that investors price down firms that do engage in social reporting.

Other research has failed to confirm any value relevance of CSR information. Research performed by Epahbodi et al. (2018) has found no significant alternation in investor price assessments and investment allocations as a result of CSR performance information disclosures. Other research also finds insignificant price reactions to general CSR information disclosures in Italy (Cordazzo et al., 2020). Further, research performed in Saudi Arabia by Alotaibi & Hussainey (2016) stated that the value relevance of CSR information depends on the classification of firm value, as they find a significantly positive effect on market capitalization, but no significance on Tobin's Q and the Return on Assets (ROA) measures. These papers, thus, state that there is no value relevance of CSR information or CSR performance information specifically.

This review of the existing literature indicates that, on average, the value relevance of CSR performance information is likely to be confirmed. However, there exists remarkable heterogeneity in results across the literature concerning the direction and strength of the relationship. Also, shifting focus towards a more general meaning of CSR disclosure, in which analysts do not focus on performance, but rather on the reporting itself, we find significant variation across the results found. From this insight, an important question arises: why do these results differ so substantially?

To answer that question, focus needs to be placed on an important pattern in the discussed literature. Most of the aforementioned papers have considered specific countries, including: Brazil (Miralles-Quirós et al., 2018), Indonesia (Setyahuni & Handayani, 2020), Italy (Cardamone et al., 2012; Carnevale et al., 2009; Cordazzo et al., 2020), and Saudi Arabia (Alotaibi & Hussainey, 2016). Therefore, it is shown that researchers find different results in different parts of the world. In other words: the relationship differs, depending on where it is estimated. This gives birth to the question: why do these findings differ across the globe? This thesis puts forth the claim that national culture is the main driver of these deviations in results. The remainder of this section substantiates that claim.

2.3 National Culture as the Missing Piece

It is likely that the value relevance relationship is influenced by more factors than the mere factual statements presented in information disclosures, were it financial or non-financial in nature. The argument for this is that there occurs a lot in between the event of receiving information and the event of acting upon that information. For example, investors interpret information based on their own beliefs, which is based on their personal mind conditioning, or mind-programming. Also, they have to determine what piece of information is more important that other pieces of information. What determines what investors decide? The answer this thesis will pose: their national culture.

National culture fluctuates between countries: not one country is the same as the other. Therefore, the people in those countries tend to think differently about similar things. This result is significantly guided by culture, that is being taught most intensively during childhood (Hofstede, 1980, 2016; Hofstede et al., 2010). In that sense, their cultural backgrounds could influence the way investors interpret certain pieces of information, leading to different interpretations across cultures, which also leads to different market reactions in different nations, even though CSR performance scores would have been equal.

Consequently, this thesis does not merely investigate the objective usefulness of CSR performance information, but extends the analysis by adding the subjective perception of that information through the addition of culture. In other words, this thesis extends the field's understanding of trading behavior across cultures by including a determinant of the interpretation of information by investors.

This raises a new question: how can one define culture? How can one operationalize and conceptualize it? This thesis uses the Hofstede Dimensions to answer both of these questions. In this paradigm, culture is defined as "the collective programming of the mind that distinguishes the members of one group or category of people from others" (Hofstede et al., 2010, p.6). The remainder of this section focuses on the conceptualization of culture through the five Hofstede dimensions. The subsequent chapter will consider the operationalization of these dimensions in further detail.

The Hofstede dimensions are as follows: Power Distance, Individualism, Masculinity, Uncertainty Avoidance, and Long Term Orientation. This thesis will not consider Indulgence, which is also featured on Hofstede Insights. All of these dimensions capture an important segment of national culture. Through these characteristics, culture will be hypothesized to have an effect on the relationship between CSR performance information and firm value. All dimensions will be discussed in turn, with each discussion culminating into a hypothesis specifically related to that cultural dimension.

2.3.1 Power Distance

This dimension belongs to the original four dimensions included in the first four-dimensional model in Hofstede (1980). Power distance relates to the way that a society tends to handle inequality and hierarchy. Cultures that score high in power distance accept hierarchy and inequality to a larger extent than cultures that score low on power distance. In the latter culture, people will instead strive to equalize the distribution of power and unjustified inequality will be tolerated less often.

How does power distance relate to CSR? Power distance has been negatively related to firms' CSR engagement (Peng et al., 2014; Ringov & Zollo, 2007), which shows that firms are pressured to a lesser extent to engage in CSR activities when power distance scores high. Apparently, firms that are situated in societies that have a more relaxed tolerance for inequalities are pressured to a lesser extent to engage in CSR practices than firms originating from societies that are less inequality-tolerant. This could entail that shareholders from such high-scoring societies simply value CSR practice to a lesser extent than shareholders from low-scoring countries. Therefore, they put less pressure on the firm to engage in these practices.

More generally, other research reports that higher degrees of power distance decrease charitable behavior (Winterich & Zhang, 2014). According to the authors, higher degrees of power distance amount to people putting a weaker emphasis on responsibility towards other individuals in the sense that they feel less inclined to help others. This finding signals that people in cultures with high degrees of power distance will put less emphasis on CSR practices: they would rather think that the company has no significant social responsibility. As a result, they will be less likely to act upon CSR performance information when making decisions. If they act upon the information, they should reward a firm's value with a lesser margin than societies with lower levels of power distance, as these would attach more value to CSR practice.

Focusing on the original explanation of the power distance dimension by Hofstede (1980) also provides significant contributions towards an understanding of the moderating role of this dimension. As stated before, the higher the level of power distance, the more acceptance of inequalities in society. This provides an important consideration for firms, depending on their country of origin. In countries with high acceptance of inequality, there will be less emphasis put on the social character of a firm. Rather, these firms would be encouraged to maximize their own value, because they will not get punished or incentivized to share this value with other stakeholders. On the contrary, such pressures will be present in less accepting societies. As a result, shareholders from high-scoring countries will not emphasize CSR performance. Rather, they would discourage the firm to commit precious resources to CSR engagements.

In sum, the cultural traits of people living in areas characterized by high levels of power distance result in a lower valuation of CSR performance information. This entails that increased power distance either decreases the usefulness of this piece of information to investors, because these investors do not consider the information as they are rather indifferent about CSR in general, or shifts the returns to additional CSR performance scores to a negative relationship. Alternatively, people from low power distance countries would value CSR practices to a higher extent, as they think that CSR practice is an important segment of doing business, which would make CSR performance information value relevant in those circumstances.

Thus, it is to be expected that there are positive share price returns for increased CSR performance in low-scoring countries in the power distance index. Then, as power distance levels increase, this relationship becomes less rewarding for firms, as investors are expected to become more indifferent about CSR performance, because these societies tend to emphasize CSR practices to a lesser extent. At a maximum, it could be that very high levels of power distance create a negative relationship between CSR performance and the share price. These insights, then, culminate into the following hypothesis:

Hypothesis 1.   Power Distance negatively moderates the relationship between CSR performance and firm value.

2.3.2 Individualism vs Collectivism

The next dimension has two sides. On the one hand we have individualism. Individualistic societies put emphasis on the individual and his/her ability to take care of him/herself. These societies put pressure on individuals to mind their own wellbeing and that of their immediate families. On the other hand, there is collectivism. In collectivistic societies, society is imagined to be a tightly-knit framework. In that sense, collectivistic societies expect group members to assist each other and to be loyal (Hofstede, 1980). Collectivistic cultures are found to emphasize communal relationships over exchange relationships (Mills & Clark, 1982).

Previous research has been intensively focused on individualism and collectivism, also relating these dimensions to specific personal traits. For example, research based on data from the United States and Japan points out that collectivistic and individualistic cultures tend to react heavily to two moral codes: community and autonomy (Rozin et al., 1999). In this research, the authors find that belonging to a different culture evokes different emotions when confronted with similar situations. They report that the violation of communal codes is answered with more negative emotions in a collectivistic culture than in an

individualistic culture. On the other hand, the violation of autonomy, through for example violation of individual rights, awakes more anger in individualistic cultures. These findings underscore the tendencies of collectivistic societies to emphasize a sense of community and that of individualistic society to emphasize the individual as a focus point.

The dimensions of individualism and collectivism also apply to a person's sense of duty to help those in need. Previous research has pointed out that people from collectivistic cultural backgrounds were more likely to help out other people, being less dependent on the role of 'liking', which refers to the individual's social image as a result of his/her actions (Miller & Bersoff, 1998). In this research, it was found that Americans, who are predominantly individualistic in cultural background, established less feelings of responsibility to aid siblings or colleagues when liking was relatively unimportant. Other research also underscores that there are very significant differences with respect to the sense of morality depending on the individualistic or collectivistic nature of culture. Overall, collectivistic societies tend to put more emphasis on moral behavior while individualistic societies tend to do so to a lesser extent (Triandis, 2001; Vauclair et al., 2014).

Previous research also covered employees and their perception of internal and external CSR (Jia et al., 2019). Internal CSR practices relate to the exchange processes between the firm and its employees, while external CSR practices relate to the processes between the firm and its external stakeholders and the environment. The authors find that individualistic employees emphasize internal CSR practices, as it provides a sense of self-fulfillment for employees. Societies that are more collectivistic tend to emphasize external CSR practices because they value the firm's impact on the community. Again, it is shown that individualism decreases the emphasis on environmental and communal impact.

Individualism and collectivism, thus, carry significant influence on the emphasis of the community and sense of morality. Overall, individualistic cultures tend to emphasize the individual and his/her well-being and, therefore, focus less on a sense of morality. On the other hand, collectivism awakes a stronger duty to aid those in need and a larger emphasis on the community. This distinction will have its influence on the value and overall relevance of CSR performance information, because the practice of CSR is social in nature. Through CSR, firms expand their individualistic view towards a view in which the interaction with stakeholders is taken into account, too. In other words, by engaging in CSR, a firm automatically widens its view through a shift of focus from the individual firm towards the community as a whole.

This shift of emphasis towards society will naturally be met with largely positive effects when a firm is traded in a country with a more collectivistic stance towards culture, indicated by a lower score on the individualism paradigm, as these societies also emphasize the community. Thus, in these low-scoring

environments, better CSR performance will be met with large share price increases, indicating a positive relationship. On the contrary, the shift in emphasis away from the individual will have an adverse effect on the rewards to the firm in more individualistic societies, because these shareholders do not find themselves having the same values as the firm. In that sense, CSR performance, at a minimum, would become less relevant to such investors. Rather, these investors are expected to place larger emphasis on more traditional accounting variables, as these provide a more straightforward perspective on the future value enhancing promise of the firm.

To summarize, through a larger emphasis on the community as carried out by firms that successfully engage in CSR practices, therefore increasing their CSR performance, firms are expected to be priced at a premium in collectivistic societies. Then, as societies become more individualistic, rising values on the individualism index will lead to a less steep positive relationship, as individualistic cultures result in indifference towards CSR performance. This leads to the following hypothesis:

Hypothesis 2. Individualism negatively moderates the relationship between CSR performance and firm value.

2.3.3 Masculinity vs Femininity

The third dimension has two sides to the same coin as well. On one side there is masculinity, which refers to societies having characteristics that are traditionally attributed to males, such as high valuation of achievement, assertiveness and an emphasis on material rewards. On the other side, we have femininity, indicating rather female-like characteristics such as the preference for cooperation, care for those in need and modesty (Hofstede, 1980; Hofstede et al., 2010). A lower score on this dimension indicates a rather female-like society, whereas a higher score indicates a predominantly male-like society.

An important difference between masculinity and femininity is the people-things dimension (Lippa, 1998). In this paradigm, the author states that the masculinity trait tends to attach relatively high value to material possessions, while the femininity trait attaches higher value to communal interests. This paradigm was elaborated on by adding the influence of context and coherent dispositions (Lippa, 2001). In that sense, it must be noted that the hard predisposition of these gender qualities is influenced by environmental factors. This entails that there is no hard distinction: there will be a mix of male and female-like characteristics in each society. Also, different circumstances lead to different mixes of these qualities in people. This means

that different people have different predispositions on both the masculine and feminine spectrum, even though these people are from the same culture.

Even though there is no hard truth to be found within this dimension, there is an expected result for CSR performance and its effects on the stock market. It is true that people vary amongst each other. Yet, cultural predispositions in societies, taken at the average of that society, mandates a different overall mix of male and female characteristics. So what does this entail for the moderation effect as to be hypothesized?

From previous research we clearly form a distinction, in which masculinity is associated with materiality and status, whereas femininity is associated with rather communal thinking. This results in the insight that more feminine cultures tend to emphasize the community to a higher extent than more masculine cultures do. This amounts to a similar interpretation as the moderation effect on the individualism paradigm: a larger emphasis on the community will lead to positive rewards as CSR performance increases, whereas a smaller emphasis on the community will lead to indifference or even negative rewards as CSR performance increases.

Therefore, it is to be expected that a lower score on the masculinity index creates a positive relationship to CSR performance. This is, because firms that effectively focus on the societal impact of the firm's endeavors, are more likely to be supported by societies that predominantly are characterized by more feminine characteristics. In contrast, this positive relationship will become weaker in high-scoring environments, because these societies are more indifferent about the firm's societal impact due to their male-like character. These societies tend to focus on material gains and will, therefore, forsake the insight that is provided by CSR performance information. As a result, the third hypothesis is as follows:

Hypothesis 3. Masculinity negatively moderates the relationship between CSR performance and firm value.

2.3.4 Uncertainty Avoidance

According to Hofstede (1980), uncertainty avoidance refers to the degree of comfort a society associates with uncertainty and ambiguity. This does not entail some fear of the future that is different depending on cultural background. Rather, cultural backgrounds differ in their stance towards the unknown future: some will simply let the future unfold, while others try to control it. As for the measurement of a society's stance towards the uncertain future it is to be noted that countries with low uncertainty avoidance scores tend to be more relaxed with regards to the unknown future than higher scoring cultures (Hofstede et al., 2010).

From this definition of this cultural dimension stems the intuition that uncertainty avoidance determines a society's comfortability in the face of risk. This notion has been inspected by prior research. For example, research found that managers with cultural backgrounds with high uncertainty avoidance required higher bid premia in takeovers, as they perceived the move to be of high risk (Frijns et al., 2013). This view clearly indicates the negative impact of risk in the perceived profitability of a takeover deal for managers with large risk aversion. Therefore, this cultural dimension can significantly shape behavior.

The intuition behind the influence of uncertainty avoidance and its relation to risk is that it influences two segments of risk tolerance. First, it impacts an individual's risk aversion, which is defined as ones stance towards risk, where higher risk aversion entails a more negative reaction to additional risk (Markowitz, 1952). Higher uncertainty avoidance entails that people become more averse to risks, decreasing their risk tolerance. Second, uncertainty avoidance impacts one's risk perception. That is, it impacts the way that individuals see and evaluate risk (Hsee & Weber, 1999). In that sense, an identical risk would be evaluated as more risky in cultures with high levels of uncertainty avoidance than in cultures with lower levels. This also influences risk tolerance.

So, higher uncertainty avoidance decreases risk tolerance. How does this apply to CSR practices? To answer that question, one has to turn to the risk character of CSR. Prior literature states that CSR could both decrease or increase risk, depending on one's way of reasoning. On the one hand, CSR could be risk-decreasing, because it provides a certain kind of insurance against litigation by taking stakeholder wellbeing into account (Carnahan et al., 2010). On the other hand, CSR could make firm risk increase. This stems from the fact that CSR is a relatively new practice, which makes it risky in essence (Falck & Heblich, 2007). Therefore, in theory, uncertainty avoidance could have different perspectives on the risk-character of CSR practices.

Empirically testing the relation between uncertainty avoidance and CSR practices has led to a significantly negative result, stemming from research in the restaurant sector (Kim et al., 2018). This research, thus, finds that an increase in uncertainty avoidance will lead to a lower commitment towards CSR. This is rationalized by the authors in the sense that CSR poses additional risks for management. These risks, then, influence the costs and benefits of engaging in CSR. This results in a manager with low risk aversion, resulting from a lower degree of uncertainty avoidance, perceiving a positive net benefit, while a very risk averse manager to perceive a net cost to engaging in CSR. As a result, the risk averse character of a manager shapes their CSR engagement. Yet, the question that remains is: how do investors value CSR performance information?

Looking at the effect of CSR performance on the risks as perceived by investors one finds two main effects. First, as CSR practices are relatively new and undefined, investors can learn a significant deal when they focus on a firm's performance in that business section. In other words, a firm's CSR performance signals how well the firm performs within a new field. This greatly reduces risks to investors as they can ensure themselves that these firms can adapt to changes in its way of doing business and is successful in implementing new strategies. Second, increasing scores for CSR performance could signal decreasing risk in the future. This is derived from the rationale that CSR will most likely be a considerable segment of a firm's attempt to stay relevant in the future as an increasing number of consumers is making more sustainable choices and governments press firms to become more socially active through their policies. Consequently, a firm's CSR performance could signal their ability to remain in business and to outperform competition, which would indicate lower risk for investors in the future.

Relating these two risk-reducing signals of CSR performance to the moderating effect of the uncertainty avoidance index within the value relevance relationship creates an intuitive reasoning. The fact that CSR performance is expected to reduce perceived risk would reduce the costs of investing for all investors, whether or not they are risk averse. Yet, the reduction in costs will be largest for those investors that are very risk averse, as they perceive this reduction of risk as more important than other investors. As a result, they would increase their bullish behavior on this firm's stock.

To conclude, we expect a risk-averse investor to be more positively influenced by better CSR performance signals than a less risk-averse investor, because of risk-reducing qualities of CSR performance. Therefore, higher levels of CSR performance will lead to a more positive reaction in the share price when uncertainty avoidance levels are high as well. The strength of this relationship becomes smaller as uncertainty avoidance is lower, because investors put a lesser emphasis on risk. Therefore, the higher uncertainty avoidance, the stronger the positive relationship with regards to CSR performance.

Hypothesis 4.   Uncertainty avoidance positively moderates the relationship between CSR performance information and firm value.

2.3.5 Long Term Orientation

The last dimension that will be considered in this thesis is the degree of long term orientation. This dimension was added in later work by Hofstede et al. (2010) as an addition to the original four dimensions that were discussed before. Long term orientation relates to the extent to which a culture prepares for the

future. Societies with low scores on this dimension tend to attach a lot of value to long-held traditions and are more normative in nature. In that sense, these societies are more conservative and suspicious with regards to societal changes overtime. On the contrary, high scores of long-term orientation refer to a more pragmatic view of the future. These societies tend to encourage new ideas and efforts in order to prepare for a better future (Hofstede et al., 2010).

Prior literature has synthesized views on the effect of long term orientation on ethical values (Nevins et al., 2007). In this paper, the authors state that long term orientation has two sub-dimensions. First, there is the respect for traditions of the past, and second, there is the planning for the future. The authors place this assertion in line with previous models stating that one's ethical concerns widen as life encompasses an increasing number of people. More practically stated, this finding infers that as a society grows, the more ethics become a central theme.

The authors then proceed to empirically test the influence of long term orientation on ethical values. They find that high levels of long term orientation produce stronger ethical values, in the sense that it awakens greater care for others and a higher degree of concern about the creation of a stronger future through increased work ethic. Thus, long term orientation increases the role of ethics and planning. A higher degree of long-term orientation decreases the role of ideas of the past and promotes ethical thinking. Also, higher levels of long term orientation increase the role of planning for the future, as these societies tend to believe that they can actively shape their future.

Applying the two sub-dimensions to CSR performance, the following can be stated. First, through the traditional values sub-dimension, we can say that societies that score high on the long term orientation scale should behave more favorably in the face of CSR, as these societies tend to emphasize ethics and let go of traditional beliefs. In that stance, they favor the change that CSR brings in shaping a more ethically responsible business environment. Second, through the planning sub-dimension, it can be stated that long term orientation increases the openness to CSR practices, as it is widely believed that strong CSR practices create a better future. In that sense, CSR performance signals the effectiveness of firms to become future-proof. This relates well to the fact that high scoring societies tend to increase their efforts of shaping the future, which in this case can be performed through CSR.

Alternatively, lower values of long term orientation will lead to more conservatism. These societies will be more skeptical to judge CSR practices as having a positive effect on future value creation, because they are averse to changes in firm policy. They would rather hold on to time-proven practices of firms, in absence of most CSR practices. As a result, they will not look at CSR performance as much as higher scoring societies. Rather, they would influence more traditional measures of overall firm performance.

Contrasting these two societies, the moderating effect of the long term orientation measure becomes apparent. As a society scores low on the long term orientation measure, its investors put less emphasis on CSR performance because of the fact that they are skeptical about non-traditional firm practices due to their tendency to hold on to traditional values and beliefs. This would result in a rather indifferent view on CSR performance, leading to the absence of a significant relationship, which would entail that CSR performance information is not value relevant in these cultural environments. On the contrary, a high-scoring society would put a large emphasis on CSR performance as these societies underscore both ethical behavior and planning towards the future. As a result, investors in these societies will be more bullish on firms that are performing well on the basis of CSR, indicating a positive relationship.

To conclude, it is to be expected that higher levels of long term orientation lead to a strongly positive relationship between CSR performance and the share price. Then, as long term orientation decreases, the strength of this relationship will become less, moving towards a more indifferent or even negative stance towards CSR performance information. This all leads to the fifth and last hypothesis:

> Hypothesis 5. Long term orientation positively moderates the relationship between CSR performance and firm value.

This section aimed at providing a comprehensive overview of existing literature relating to the value relevance of CSR performance and the moderating effects within that relationship based on the Hofstede cultural dimensions. In doing so, it first established an understanding of the value relevance approach and how it relates to the concept of decision usefulness. Then, it established a foundational view of existing research on the value relevance of both CSR disclosures and CSR performance information, which has lead to significant deviations in results as research focused on a multitude of specific countries.

Based on those contradictory results, this thesis has posed the potential for national culture to be the main driver of those differences. In order to investigate this relationship, five Hofstede dimensions have been put into the perspective of the value relevance relationship of CSR performance through the cultural tendencies that belong to the predispositions that each dimension measures. These discussions have amounted to the statement of five different hypotheses. For convenience, *Appendix A* includes a schematic overview of all hypotheses, as well as a consolidation of all hypotheses at a bird's eye view.

These hypotheses will be empirically tested in the remainder of this thesis based on an extensive dataset. In order to create a foundational understanding of the data sample and the models to be estimated, the next section discusses the data extraction, variables, and methodological issues.

3. Data & Methodology

This section discusses the data and methodology used in the analysis. In doing so, the following structure will be employed. First, the data extraction process will be discussed, in which the data sources and the data units will be discussed. Second, the different variables that will be used in the analysis are provided, with a basis within previous research. Third, the model will be established, culminating in the regression equations to be estimated. This section concludes with a discussion of summary statistics, preliminary statistical tests and transformations that are used to establish the dataset as it is used in the subsequent results section.

3.1 Sampling Considerations

The units of analysis for this analysis are firms, originating from a range of 18 countries. Firms are categorized based on their country of exchange. Firms with cross-listings, meaning that they are listed in multiple countries worldwide, have not been duplicated, and have been categorized within the country of their original listing. The specific countries that are included in the dataset have been selected in such manner that the dataset consisted of a wide range of the Hofstede cultural dimensions, entailing that a wide range of cultural backgrounds is covered. The countries have been listed in *Appendix B*.

The country-level cultural data has been extracted from the Geert Hofstede website. The cultural dimensions that are covered in this research are all available, for a range of 112 countries. This data is identical to the data used in work by Hofstede (2010), and it has not been changed since. The cultural dimension scores are rarely updated, as national culture is considered stable overtime, and therefore, rarely changes significantly within a short time-span. As a result, this data still accurately measures today's cultural dimensions. The measurements of these variables will be discussed later in this section.

The firm-level data was extracted from the Thomson Reuters: Refinitiv Eikon database. This database is one of the most substantial databases covering firm-level data, as it covers a vast range of variables for both public and private firms across the world. The data covers the time period of 2016-2019 and consists of 4,007 firms across 12 different general industries, culminating in a dataset of 16,028 firm-year observations. In *Appendix C*, the distribution of companies across these industries is provided.

3.2 Variables

This subsection discusses all variables to be used in the analysis. It does so by adhering to a structure in which the dependent variable is discussed first, the independent variables are discussed as second, and the control variables are discussed at last. Yet, before the specific variables are stated, it is important to establish the basis of the model on which this research builds.

3.2.1 The Ohlson Model

This research builds upon the Ohlson Model, which was first introduced in the work of Ohlson (1995). In its most basic form, this model estimates a firm's share price as a function of its financial information. Traditionally, the most important financial factors are book value per share (BVPS) and the earnings per share (EPS) measures (Miralles-Quirós et al., 2018). Including these factors, the most basic form of the Ohlson model is best described with the following regression equation:

$$Share\ Price_{it} = \beta_0 + \beta_1 * BVPS_{it} + \beta_2 * EPS_{it} + \epsilon_{it}$$

The Ohlson model has been extended by previous research in order to allow for an investigation into the value relevance of CSR information by including CSR indicators (Alotaibi & Hussainey, 2016; Govindan et al., 2021; Miralles-Quirós et al., 2018). This thesis performs an identical process, by including CSR performance as an indicator. Adding CSR performance to the Ohlson model creates the following equation, which forms the foundation found in previous research on the value relevance of CSR information.

$$Share\ Price_{it} = \beta_0 + \beta_1 * BVPS_{it} + \beta_2 * EPS_{it} + \beta_3 * CSR\ performance_{it} + \epsilon_{it}$$

This thesis, thus, builds upon this formulated version of the Ohlson model by including cultural backgrounds. Now that this foundational model has been expressed, let us turn to the variables to be included.

3.2.2 Dependent Variable

The dependent variable in this analysis is the closing share price at the end of the month of June in the year after the financial year-end that is analyzed. That is, the factors belonging to the fiscal year of 2016, will be regressed on the closing share price of June 30th 2017. The reason for this is that firms report their prior year's statements somewhere in the next fiscal year. For most firms, the date of publication is April 1st. After that date, the market needs some time to integrate the new information into the share price, which is why a later date of price measurement should be picked. Prior research on value relevance consistently executes the same procedure with regards to price extractions (Alotaibi & Hussainey, 2016; Bird et al., 2007; Govindan et al., 2021).

Most of this research selects April 30th to measure prices. The reason for this is to allow the market to integrate the new information into the share price, while also limiting the effect of other information besides the disclosure to impact the share price, which would happen were the analyst to select a date that lies further into the future. In this research, June 30th has been selected as the measurement date for two reasons. The main reason is that firms originating from different countries have different dates for the fiscal

year-end. Therefore, their disclosure dates are different. For example, Japanese firms have their fiscal year-end at March 31st. Therefore, their disclosures will most of the times not happen before the end of April. As a result, to capture all reported information, a later date must be picked. The second reason is that all prices should be captured at the same date, as this would equalize the industry and world-wide effects on the prices. When, for example, prices would have been extracted one month after the disclosure deadline, leading to different closing price dates, these prices would have been impacted by effects in between the two measurement dates. As a result, the same date of price closings should be picked. Taking these two reasons into consideration, June 30th is the most viable date for the extraction of closing prices. It is true that this allows for some confounding factors besides the influence of disclosed information for the firms that report in April. Yet, this was the only appropriate method to analyze a wide range of countries with multiple cultural backgrounds.

3.2.3 Independent Variables

3.2.3.1 CSR performance

Previous research focusing on CSR performance indicators has increasingly used comprehensive CSR performance scores as their main independent variable. For example, Setyahuni et al. (2020) use Bloomberg scores, and Miralles-Quirós et al. (2018) use ESG scores as found in the Eikon Database. This thesis follows the latter research. This mainly created two benefits: capturing CSR performance in a single number, while allowing data extraction from the same database as all other firm-level data.

The ESG scores within the Thomson Reuters Eikon database are based on the self-reported CSR performance per firm. The ESG score covers all three pillars of ESG: Environment, Social and Governance factors. The score ranges from 0 to 100, where a higher score signifies a better CSR performance. This measure is independent from the firm's size and has therefore not been adjusted for firm size.

3.2.3.2 National Culture

As mentioned in the literature review, national culture will be operationalized using the Hofstede cultural dimensions. These metrics have been chosen because they are oftentimes used in cultural research across the field of economics. Because of the wide recognition that the Hofstede cultural measurements have received throughout the academic world, they are suitable to include in this thesis. The five dimensions and their measurements will be discussed in turn.

The first hypothesis covers the moderating effect of power distance on the value relevance of CSR performance information. Power distance is operationalized by the Power Distance Index (PDI), which measures how a society handles inequality. The PDI ranges from 0 to 100, where a higher score signifies a higher degree of power distance. When a country receives a higher score on the PDI it is found that

inequalities are accepted to a higher level than in countries with a lower score (Hofstede, 1980; Hofstede et al., 2010).

The degree of individualism of society, which is covered in the second hypothesis, is measures by the individualism vs collectivism (IND) measure. Again, this measure ranges from 0 to 100. The higher the score on this measurement, the more individualistic the society. Conversely, lower scoring societies will have a higher focus on the community than the individual (Hofstede, 1980; Hofstede et al., 2010).

The third measure is the masculinity vs femininity (MAS) paradigm. This measure substantiates whether a society has primarily female or male-like characteristics. Within its range of 0 to 100, a higher rate indicates that a society leans more towards the male side of this spectrum, while a lower score shows a tendency for more women-like features (Hofstede, 1980; Hofstede et al., 2010).

As a fourth cultural dimension, the degree of uncertainty avoidance is included, using the uncertainty avoidance index (UAI). This measure indicates how tolerant people are with regards to uncertainty for the future. Ranging from 0 to 100, a low score indicates a higher tolerance of uncertainty, and a higher degree a lower level of uncertainty tolerance (Hofstede, 1980; Hofstede et al., 2010).

The fifth and last measure indicates the degree of long-term orientation, using the long term orientation versus short term normative orientation (LTO) measure. It ranges from 0 to 100. A low score indicates that a society tends to prefer more conservative stances towards the future, while a high range indicates a larger emphasis on progressive thinking (Hofstede, 1980; Hofstede et al., 2010).

The cultural variables have been included as interaction term between the individual dimensions and the ESG score in order to examine the hypothesized interaction effects empirically. For the sake of interpretation, these variables have been centered, which means that the mean has been subtracted for all values, for each dimension individually. Normally, an interaction effect should be interpreted as an increase from a value equal to 0 on the interaction variable. However, through the process of centering, this interpretation shifts towards the interpretation from the mean value for all interaction variables (Wooldridge, 2012).

3.2.4 Control Variables

In order to increase the goodness of fit of the model to be estimated, several control variables have been added. The first two control variables relate to the original Ohlson model: book value per share (BVPS) and earnings per share (EPS). Both are based on the reported values in the financial statements per firm. Both carry great financial accounting information on which investors base their beliefs and trading behavior

(Ohlson, 1995). Other research on value relevance using the Ohlson model also include these two variables as controls (Bird et al., 2007; Miralles-Quirós et al., 2018; Setyahuni & Handayani, 2020).

Aside from these traditional factors in the Ohlson model, this thesis adds more control variables in order to increase the model fit. First, in order to control for company risk, every firm's beta is taken into consideration. The beta measure indicates the strength of the reaction of a particular firm's return to the market return in a given period. In that sense, it is a measure of share price volatility. Depending on the average market return, the prices will vary significantly depending on the difference in beta between firms, which makes it important to control for this factor. The firm beta has been an important factor to measure risk and functions as a cornerstone of a multitude of influential model within the field of economics, such as the well-known Capital Asset Pricing Model (CAPM) (Fama & French, 2004; Lintner, 1965; Sharpe, 1964).

In order to control for firm size, this thesis employs the total of reported assets at year end. It is important to control for firm size because it can significantly shape returns and share prices. Overall, more established and larger firms will be priced at higher rates than smaller firms. It is important to control for this deviation in size in order for the analysis to not pick up the deviation in share price as a result of size rather than CSR performance. Also, firm size has its implications for returns, as becomes apparent from the Fama-French three-factor model. In that model, the authors state that small-sized firms yield higher returns, on average (Fama & French, 1993). Taking these findings into consideration, it is wise to control for firm size effects.

At last, the analysis will control for both industry and time fixed effects. This will be performed through the inclusion of industry and year dummies for each industry and year. The industry dummies will capture all industry-wide effects, decreasing the potential for a pick-up of price deviations between industries due to industry-wide effects. The year dummies will account for time trend effects, which is important to establish a less opaque relationship. Moreover, the inclusion of these dummies is customary within panel data analysis (Wooldridge, 2012).

3.3 Summary Statistics

Now that all variables have been considered, it is time to inspect the data more formally. In *Appendix D*, the summary statistics are depicted. The values as depicted have not yet been transformed into logarithmic values. Also, the cultural values have not yet been centered. The summary statistics will be discussed briefly now.

With regards to the dependent variable, share price, we find 15,824 firm-year observations, indicating some minor number of missing values. The mean share price is 4316.857, with a standard deviation of 36,160.12. The minimum share price equals 0, while the maximum share price is 1,260,000. The ESG scores are found for all firms for all years, with a mean score of 42.817 and a standard deviation of 21.195. The minimum score is 0, which entails that a firm did not report any details on its ESG performance in that given year. The maximum ESG score was 94.552. This spread entails that, with regards to the ESG scores, a wide range of CSR performance is covered by this dataset.

With respect to the control variables, no significant notes should be made, apart from a minor number of missing observations on a number of variables. The missing values have not resulted in an unbalanced panel, as based on the automatic screening ability of STATA. As a result of the absence of major complications due to missing values, no corrections or adjustments have been made.

The dataset consists of relatively large and small firms, as to be seen from the variable total assets, ranging from 110,000 to 519,000,000,000,000. With regards to firm risk, the average firm, as expected, nearly equates the market risk, as the mean value of beta is 1.047. The firms cover a significant range of the beta statistic, ranging from -5.54 to 5.62. The performance measures, EPS and BVPS, also carry significant ranges of profitability. Therefore, it is to be concluded that, on a firm-level basis, the panel is both balanced from a statistical perspective and diverse from a theoretical and methodological perspective.

When focusing on the cultural data, we find that all cultural dimensions are covered with a substantial range, with the widest range being for the masculinity vs femininity paradigm, equaling a range from 5 to 95. The narrowest range is found on the uncertainty avoidance index variable, ranging from 29 to 95. From these ranges it becomes apparent that the dataset as used covers a vastly wide set of cultural values, which indicates its suitability for the analysis to be performed.

3.4 Data transformations

All variables have been inspected on the basis of their distributional properties through obtaining histograms for all individual variables. As OLS regression analyses require normality under the Gauss-Markov normality assumption (Wooldridge, 2012), all variables that were found not to adhere to the normal distribution, have been logarithmically transformed, after which they have been inspected for normality again. The transformation was deemed to be applied correctly only in the case of the variable adhering to a more normal distribution than in the absence of the transformation.

In *Appendix E*, an overview is presented with regards to the transformations of all variables in this analysis.

3.5 Correlations

In order to inspect the presence of multicollinearity, a correlation matrix was produced, which is depicted in *Appendix F*.

Overall, it can be stated that correlations below 0.800 provide substantial evidence of the absence of multicollinearity. Such correlation factors are disturbing only when they occur amongst the independent variables. From the correlation matrix, it is to be concluded that multicollinearity is present amongst some of the variables. The highest correlation factor is the correlation between the natural logarithm book value per share (BVPS) and the natural logarithm of the share price. Another disturbing correlation is found between the natural logarithm of the power distance index and the natural logarithm of the individualism vs collectivism paradigm.

The former correlation factor is deemed acceptable as it occurs between the dependent and independent variable. This, logically, could entail a strong relationship between the two, which is also referred to by previous research as the book value per share is commonly included within value relevance research. The latter correlation factor, however, is more troublesome. Due to the high correlation value, both cultural dimensions should not be added simultaneously in the model in order to relieve the estimation of potential problems. As a result, the decision was made to include all cultural dimensions individually into separate regression estimations. This adaptation effectively alleviates all risk arising from multicollinearity.

3.6 Regression Equations

At last, it is time to end this section with a statement of all regression equations that will be estimated in the empirical analysis. These equations follow the number of the hypothesis that they estimate. Because of the problem of multicollinearity, all cultural effects will be investigated separately. In the case of the addition of an l, the logarithmic transformation is used in the analysis for that specific variable.

3.6.1 Model 1: Including power distance

The first model includes the power distance index (PDI) and the interaction term between the PDI and ESG scores. The regression equation is stated as follows:

$$lPrice_{it} = \beta_0 + \beta_1 * lESG_{it} + \beta_2 * lPDI_{it} + \beta_3 * lPDI_{it} * lESG_{it} + \beta_4 * lBVPS_{it} + \beta_5 * EPS_{it} + \beta_6 * lAssets_{it} + \beta_7 * beta_{it} + \delta_1 * industry_i + \delta_2 * year_t + \epsilon_{it}$$

3.6.2 Model 2: Including individualism

This model uses the individualism vs collectivism (IND) metric, leading to the following equation:

$$lPrice_{it} = \beta_0 + \beta_1 * lESG_{it} + \beta_2 * IND_{it} + \beta_3 * IND_{it} * lESG_{it} + \beta_4 * lBVPS_{it} + \beta_5 * EPS_{it} + \beta_6 * lAssets_{it} + \beta_7 * beta_{it} + \delta_1 * industry_i + \delta_2 * year_t + \epsilon_{it}$$

3.6.3 Model 3: Including masculinity

In the following equation the masculinity vs femininity is used:

$$lPrice_{it} = \beta_0 + \beta_1 * lESG_{it} + \beta_2 * MAS_{it} + \beta_3 * MAS_{it} * lESG_{it} + \beta_4 * lBVPS_{it} + \beta_5 * EPS_{it} + \beta_6 * lAssets_{it} + \beta_7 * beta_{it} + \delta_1 * industry_i + \delta_2 * year_t + \epsilon_{it}$$

3.6.4 Model 4: Including uncertainty avoidance

In order to test the fourth hypothesis, the Ohlson model is extended with the uncertainty avoidance index:

$$lPrice_{it} = \beta_0 + \beta_1 * lESG_{it} + \beta_2 * lUAI_{it} + \beta_3 * lUAI_{it} * lESG_{it} + \beta_4 * lBVPS_{it} + \beta_5 * EPS_{it} + \beta_6 * lAssets_{it} + \beta_7 * beta_{it} + \delta_1 * industry_i + \delta_2 * year_t + \epsilon_{it}$$

3.6.5 Model 5: Including long term orientation

The last relationship to be estimated includes the degree of long-term orientation of a society. The regression equation is given as follows:

$$lPrice_{it} = \beta_0 + \beta_1 * lESG_{it} + \beta_2 * lLTO_{it} + \beta_3 * lLTO_{it} * lESG_{it} + \beta_4 * lBVPS_{it} + \beta_5 * EPS_{it} + \beta_6 * lAssets_{it} + \beta_7 * beta_{it} + \delta_1 * industry_i + \delta_2 * year_t + \epsilon_{it}$$

These models will be estimated through an empirical analysis, which is discussed in the subsequent section.

4. Empirical Analysis and Results

This section considers the empirical analysis and the regression results. It adheres to the following structure. First, it substantiates the conducting of the Hausman test in order to evaluate the appropriateness of random or fixed effects models. Second, it discloses the results of the tests that were conducted for all models in order to check for the presence of heteroskedasticity, as well as the measures taken to alleviate statistical problems in the presence of heteroskedasticity. At last, it will conclude with a presentation and thorough discussion of the regression results.

4.1 Hausman Test

As a first step in the ultimate analysis, it is of vital importance to determine the appropriateness of either random or fixed effects. Within this analysis, using culture, this question is of even greater importance, for the simple reason that the explicit inclusion of culture, which is a stable factor overtime, would be impossible within fixed effects models. The reason for this is that fixed effects models automatically control for all stable factors overtime, through the use of entity dummies. Consequently, were a non-varying factor be added into the model, it would be omitted from the analysis were a fixed effects model to be deemed appropriate.

Yet, it should be noted that this analysis mainly focuses on the interaction between national culture and CSR performance. That is, it mainly questions the effect of a stable variable, multiplied with a variable that does change overtime. Therefore, the inclusion and analysis of such interaction effects would not be omitted in a fixed effects model. The singular effect of culture would simply be controlled for by the fixed effects model itself, even though no explicit estimation is given for the standalone cultural dimension.

In order to inspect what model suits this particular dataset best, a Hausman test was employed. This is a very common test in order to address the appropriateness of a random effects model. A potential problem of random effects arises from the fact that it allows for the inclusion of time-invariant factors, which would be problematic if these time-invariant factors systematically change the variance of the model as opposed to a fixed effects model. The Hausman test checks whether the standard errors produced by a random effects model are significantly different from those produced by a fixed effects model. If they differ significantly, we reject the null hypothesis that the data is free of systematic error, leading to the conclusion that a random effects model is inappropriate. To restate, significance found as a result of a Hausman test would indicate that a fixed effects model should be estimated.

The Hausman test was employed for all different models individually. In every instance, the test produced significant results. Therefore, a random effects model is inappropriate. As a result, fixed effects models will be employed on the data in order to review the aforementioned regression models.

As a note, it should be said that it is customary to include both of the interaction variables in the regression alongside their interaction term. However, this would be impossible in this analysis, because one of the interaction variables is stable overtime. Yet, this thesis does not primarily discuss the influence of national culture on share price. Rather, as stated before, its main term of interest is the interaction effect, which is not omitted by the fixed effects model. The fixed effects model does accurately control for the cultural effect, as it belongs to a specific entity and is stable overtime. Therefore, the estimation should not be hindered by omitted variable bias. The only disadvantage of using a fixed effects model is that it does not allow to inspect the result of culture explicitly. Taking these factors into consideration, it was deemed more appropriate to estimate fixed effects models in order to fully alleviate any statistical problems in the case of the estimation of random effects models.

4.2 Heteroskedasticity

A common problem within regression analysis is the problem of heteroskedasticity. Ordinary Least Squares (OLS) methods are based on the Gauss-Markov Assumptions (Wooldridge, 2012). These, among others, state that the variance should be the same throughout the whole model. That is, residuals of the model should be constant throughout the estimation. This assumption is referred to as the homoskedasticity assumption.

In the case of a significant change in variance throughout the model, this assumption of OLS will be violated. This situation is referred to as heteroskedasticity. The effect of such phenomenon is that the OLS estimation will be biased, in the sense that t-values will be likely to be overstated, because standard errors are estimated to be lower than they actually are. This would greatly endanger the goodness of fit and explanation power of the estimation, which is why it should be accounted for.

In order to check for the presence of heteroskedasticity, all models have been estimated individually based on fixed effects models. For each model, then, the fitted values for the share price have been calculated. These values are then used to estimate the residuals for each model, which is calculated by subtracting the estimated value from the actual value of the share price in the dataset. As a last step, these residuals have been plotted against the actual values of the share price.

From the residual plots as estimated, the conclusion was drawn that heteroskedasticity was present in each and every model, indicated by non-stable residuals throughout the model. As a result, the remainder

of the analysis was carried out in such manner that standard errors are heteroskedasticity-robust. This was done through the calculation of the Huber-White-Sandwich estimator. Through this method, all standard errors have been inflated so that they can be interpreted accurately even though heteroskedasticity is present.

4.3 Results

In table 1 on the subsequent page, the regression results are depicted. These results have been obtained based on panel data within a fixed effects regression model. These models have been estimated using Huber-White-Sandwich standard errors in order to account for the presence of heteroskedasticity. The remainder of this section will provide a thorough interpretation of the regression results as depicted below. Yet, before these interpretations are given, two remarks have to be stated.

First, please note that the interaction terms have been multiplied with the centered values of the cultural dimensions. Therefore, the interpretation of the effect of CSR performance as a standalone factor is to be executed at the mean of the cultural dimension it is interacting with in that particular model.

Also, in the regression table, three types of the r-squared measure are given. The first, labeled as r-squared within, measures the proportion of variance captured within the economic entity, in this analysis that is the firm analyzed, from year to year. The second, labeled as r-squared between, measures the proportion of variance captured between the economic entities within a given year. The third, which is the overall r-squared is the weighted average between the two. Within this research, the primary focus lies on the second and third measure, as the effect of national culture on the value relevance relationship is estimated. The r-squared within the individual firm should not change significantly from model to model, as culture is stable overtime for all firms, and no other firm-specific varying factors are added from model to model besides the interaction effect. As a result, this research does not aim at explaining intra-firm variation. Rather, culture should drive differences between firms, which is why main interest goes out to the r-squared between measure. This value should change throughout the models.

Having stated these remarks, it is time to investigate the results. Starting with the first column of the results table, featuring the estimation of the first model, which includes the interaction term between CSR performance and the power distance dimensions of culture. The results state that there is no significant relation between the share price, 6 months after year-end, and CSR performance as reported. This implies what previous research has found: that the value relevance of CSR performance is debatable when measured across a multitude of countries. However, it must be noted that this is to be interpreted at the mean of the power distance index. That is, in an average scoring country for the power distance index, performing well with respect to CSR does not carry significant return to firms. This, however, does not necessarily reject the posed hypotheses. Rather, this insignificance could indicate a conditional interaction effect, in which

returns to CSR performance primarily depend on the cultural environment. To inspect this possibility, focus should shift to the interaction term included.

The two traditional accounting variables are significant: the earnings per share at the 10% level and the book value per share at the 1% level. Noticeable is that the coefficient of the earnings per share measure is very small, in such a way that it is not of practical economic relevance, which is surprising because it has been indicated by previous research as a major determinant of the share price. The book value per share does carry practical relevance and shows a positive effect, which is also found and hypothesized in previous research. The logarithm of total assets, which measures firm size, carries a significantly positive effect at the 10% confidence level, as was expected. The measure for firm risk, a firm's beta, is found to be insignificant in the estimation of a firm's share price.

With regards to the interaction effect, a significant effect at the 1% level is found. In that sense, deviations from average levels of power distance have a significant effect on the value relevance of CSR performance information. The sign, however, is opposite of the hypothesis as it was stated. The results imply that above average levels of power distance increase the return to CSR performance in terms of share price. A potential reason for this contradictory result is that a country's culture could shape its legal system. In that sense, companies that originate from countries with low tolerance of inequality, will be pressured to reduce inequality, whereas companies from more inequality-tolerant countries would be pressured to a lesser extent. As a result, there is less improvement to be made for these firms in going the extra mile with regards to their CSR performance, which could explain the higher return for firms from more inequality-tolerant countries. Yet, the **first hypothesis** cannot be confirmed based on this evidence altogether.

In order to interpret the change within the value relevance relationship depending on different cultural settings, a margins plot has been created, which is shown in *appendix G*. An important note is that all margins plots depicted are based on random effects estimations. The reason for this is that the creation of effective margins plots is impossible through fixed effect estimations, for the fact that an effective margins plot shows the value relevance relationship of CSR performance in different cultural contexts. Therefore, it should be able to distinguish between levels of cultural dimension scores, which requires an explicit estimation of these factors. This, however, is impossible under fixed effects models. Therefore, the only viable method is the use of random effects models.

Table 1. Heteroskedasticity-Robust Fixed Effects Estimation Results

	Model 1	Model 2	Model 3	Model 4	Model 5
CSR performance (log)	-0.003	-0.004	0.012	0.015	0.005
	(0.026)	(0.026)	(0.025)	(0.024)	(0.025)
Earnings Per Share	-0.000*	-0.000*	-0.000**	-0.000*	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Book Value (log)	0.176***	0.176***	0.175***	0.175***	0.176***
	(0.038)	(0.038)	(0.039)	(0.039)	(0.038)
Total Assets (log)	0.068*	0.068*	0.068*	0.068*	0.069*
	(0.037)	(0.037)	(0.038)	(0.038)	(0.037)
Beta	-0.010	-0.011	-0.010	-0.010	-0.010
	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)
CSR (log) * Power Distance (log)	0.272***				
	(0.079)				
CSR (log) * Individualism (log)		-0.119***			
		(0.036)			
CSR (log) * Masculinity			0.002		
			(0.001)		
CSR (log) * Uncertainty Avoidance (log)				0.091*	
				(0.055)	
CSR (log) * Long Term Orientation (log)					0.119***
					(0.039)
Constant	2.021**	2.019**	1.981**	1.971**	1.965**
	(0.790)	(0.789)	(0.794)	(0.796)	(0.788)
Number of Observations	14728	14728	14728	14728	14728
R-squared Within	0.023	0.023	0.022	0.022	0.023
R-squared between	0.4959	0.5435	0.6173	0.5886	0.6148
R-squared Overall	0.4922	0.5402	0.6131	0.5861	0.6117

Standard errors are in parenthesis

*** p<0.01, ** p<0.05, * p<0.1

Another method is applicable, which is the creation of a margins plot for two subgroups: one group scoring below-average on the cultural dimension and the other scoring above-average. This, however, results in two individual margins plots, with different axis values. As a result, comparison becomes less clear between the two. Therefore, the aforementioned method of creating margins plots under random effects models was executed. Yet, it should be noted that these margins plots, therefore, do not perfectly accurately describe the estimation under fixed effects, they still provide a convenient interpretation.

Looking at the margins plot, we observe that an increase in the level of the Power Distance Index shifts the value relevance relationship downward, as seen from the different intercepts depending on the level of the PDI measure. The overall return to CSR performance seems to be negative in this case. This negative relationship becomes rather flat as we move towards cultures with higher levels of power distance. The margins plot, thus, indicates that firms operating in lower-scoring societies with respect to power distance are met with negative price shocks, while firms operating in high-scoring societies tend to have less negative or no significant price shocks as a result of CSR performance. This, however, **contradicts our hypothesis 1**, which is therefore not supported.

The overall fit of model 1 is relatively good, with an r-squared measure stating that 49.22% of overall variance is explained by the model. Of the within firm variance, only 2.3% is explained, while the between-firm explanation power is higher with 49.59% of variance explained. Thus, this model is able to explain a substantial proportion of between-firm variance with the factors included.

Considering the second model, which is depicted in the second column of table 2, we observe the same results on the traditional accounting variables and the natural logarithm of total assets and the beta measures. Also, the stand-alone effect of the natural logarithm of CSR performance is insignificant, creating the same interpretation as before. When focusing on the interaction between the individualism vs collectivism metric, we observe that there is a significantly negative effect at the 1% level of statistical confidence. The sign supports the second hypothesis as stated in this thesis: higher levels of individualism lead to lesser returns to CSR performance than more collectivistic societies. Yet, to increase the intuitive interpretation, a margins plot is provided again.

The inspection of this margins plot yields an important insight: the higher the individualistic character of a society, the less positive, or even negative, the stock price rewards to CSR performance. In very collectivistic societies, returns to CSR performance are highest, while very individualistic societies even seem to punish firms for their CSR engagement. In other words, firms in more collectivistic societies are rewarded to a higher extent for good CSR performance than firms that originate from more individualistic societies. Also, collectivistic societies price down underperforming firms to a larger extent

than individualistic societies. This supports the hypothesized effects, which leads to the overall **support of hypothesis 2**.

With regards to the explanation power of this model, we observe that the inter-firm variance proportion explained by this model is not enlarged with regards to the first model, which is logical as it is not the focus of this thesis. The between-firm variance proportion explained rises to a respectable 54.35% and the overall variance proportion explained by this model equals 54.02%.

In the third model, we observe the same effect for all variables apart from the interaction term. The interaction term between the masculinity dimension and CSR performance is found to be insignificant. Therefore, **the third hypothesis is not supported** by the data. Rather, it is found that the masculinity dimension does not carry a significant moderating effect within the value relevance relationship of CSR performance. Apparently, a society's tendency towards either male- or female-like characteristics is not of importance within the value relevance paradigm of CSR performance information. The overall fit of this model is the highest throughout all models, however, with 61.31% of overall variance explained by the model.

The fourth model validates the fourth hypothesis, as the interaction term between the uncertainty avoidance dimension and CSR performance is found to be positive and significant at the 10% level. Therefore, based on a society's stance towards uncertainty, it can be said that the value relevance of CSR information is influenced. More practically stated, an above-average degree of aversion towards uncertainty leads to an increasingly positive price reaction in the case of increasing CSR performance than when a society behaves more leniently towards uncertainty. This finding underscores the risk signaling properties of CSR performance information, which are emphasized to a larger extent by more risk intolerant investors.

This interpretation is, however, not supported by the margins plot as depicted in *Appendix G*. Rather, the margins plot shows the opposite effect where uncertainty avoidance negatively moderates the relationship. This is probably due to the fact that the analysis has changed from a fixed effects regression to a random effects regression upon which the margins plot is produced. In order to check whether this is true, a random effects estimation was executed. It is found that the sign of the relationship was inversed, leading to an inverse margins plot. Therefore, nothing can be concluded about this hypothesis based on this margins plot, making the sign of the fixed effects regression the indication to **confirm the fourth hypothesis**.

The overall fit of this model is given by an r-squared measure of 0.5861, again, mainly stemming from between-firm variance explained. All traditional firm-level factors have the same significance and

sign as in the other models. Also, the stand-alone effect of CSR performance is insignificant, underscoring the potential for a conditional relationship, depending upon the cultural context.

In the fifth model, the interaction term between long-term orientation and CSR performance was included. The result is very significant (at the 1% confidence level) and carries the expected sign as hypothesized in the literature review. Based on these results, it can be stated that CSR performance is more value relevant in contexts characterized by higher levels of long-term orientation, than in lower scoring contexts on this cultural paradigm.

Inspection of the margins plot shows that higher levels of long-term orientation shape higher rewards to the same levels of CSR performance for firms. Also, the slope becomes marginally steeper as we move towards higher scores of long-term orientation within society. This interpretation supports the intuition that CSR performance information signals long-term performance prospects to investors. The fact that these signals are more relevant in more long-term oriented cultures is not surprising based on theory. Therefore, the margins plot and the estimation as a whole **supports the fifth hypothesis**.

The overall fit of this model equals 61.17% of total variance explained. Again, all other factors included have the same significance and sign as in all other models. The proportion of variance explained, like all other estimations, stems mainly from the explanation of between-firm variance.

Overall, the panel data amounts to substantial evidence that corroborates the second, fourth and fifth hypotheses. For the first hypothesis, on the power distance index, significance is found, but the sign is inverted as opposed to the hypothesis. The third hypothesis has not been corroborated, as no significance was ultimately found. Even though these results are promising and compelling, they should not be followed blindly. In order to inspect the robustness of these findings, another estimation method is employed. The methods and results from this test are presented in the subsequent section.

5. Robustness

The results as stated in the previous section have been based on panel data. The main benefit of using panel data is that it covers both multiple economic entities and multiple years. As a result, this type of analysis enables the researcher to simultaneously inspect the relationship overtime, as well as on an inter-firm basis. Complementary to this benefit, the sample size is enlarged by a large margin because of the inclusion of observations over multiple years.

Using panel data, like any method, is not free of disadvantages, however. Specifically related to this thesis, a problem could occur because of the use of variables on multiple levels of measurement. To elaborate, this thesis makes use of both country-level and firm-level data. In order to analyze the effect of the higher level cultural variables to the lower level firm variables, the cultural variables have been assigned to groups of firms, based on their country of exchange. This is a process known as disaggregation (Hox, 2002), which makes the higher level variable a contextual variable. In that sense, this thesis has covered the influence of the cultural context of the firms analyzed.

The process of disaggregation, however, involves the risk for potential statistical and conceptual pitfalls. According to Hox (2002), these problems are twofold. The first problem is of statistical nature. When the analyst disaggregates the data, few data points from the higher-level origin are "blown up" because of the fact that these data values are simply repeated for a larger number of units that are analyzed at the lower level. In the case of the analyst failing to account for this, the statistical test will assume all data to be independent from each other. As a result, significance is found more often than is appropriate. Therefore, it could be that the significant results presented in section 4 are mainly driven by the process of disaggregation, creating necessity to perform a robustness check to rule out this possibility.

The second pitfall of disaggregation is conceptual and is referred to as the ecological fallacy. As a result of disaggregation, the data is interpreted on the lower level, even though the main variable of interest is a combination of a higher and lower level variable. To restate, the use of panel data implicitly assumes that all data is of equal level origin. However, in the case of this thesis, this is not true. Therefore, the interpretation of the previous results could be less straightforward and complete than thought beforehand.

Having stated these potential problems, it becomes clear that a robustness check is to be performed. It is essential that the robustness check appropriately accounts for these problems. As proposed by Hox (2002), a multilevel approach is to be employed. This section discusses this method and presents results obtained by using the same data as was used in the panel data analysis before. Ultimately, the combination

of both the panel data and multilevel approaches will provide a clearer view of the relevance of national culture and the robustness of the findings that were presented in the subsequent section of this thesis.

5.1 The Multilevel Approach

The multilevel approach distinguishes itself from more traditional estimation methods in the sense that it treats the population with a hierarchical order, where the higher level rises above the sub-levels (Hox, 2002). In the case of this thesis, the higher level variable is national culture and the sub-units are firms. Because of this hierarchy, the correlation between sub-units belonging within the same higher level context will be higher than the correlation between sub-units belonging to different higher level contexts. In this thesis, this implies that firms that are listed within the same country will be related to a higher extent than two firms listed in different countries. More standard statistical models rest upon the assumption that all observations are independent. However, this does not hold in this case, which is why significance is potentially overstated. By use of the multilevel approach, this assumption is relaxed, creating a robust estimation method in the presence of this violation.

So, how does one operationalize a multilevel approach? The first option is the use of a random intercept model. This approach differs from standard estimation methods in the sense that it allows the sub-units embedded in different higher-level contexts to differ in intercepts. The assumption is, however, that the relationship as estimated has the same slope for all sub-units, independent from their context. The second option is to employ a random coefficient model. This model builds upon the random intercept model in the sense that it allows for different intercepts among sub-units, yet it extends it by also allowing the slope of the relationship to differ depending on higher level context.

Choosing between these two options, then, depends on the question whether or not the relationship is expected to be stable or varying in slope as we move across the national variables. Logically, based on the hypotheses and theories discussed, the latter option is validated. The intuition behind this decision is that the national variable, culture, shapes the relationship as a moderator effect. Therefore, the relationship is hypothesized to be different in different cultural contexts. In order to shed light on this effect, a random coefficient model is to be employed.

Now what remains is the exact operationalization of the random coefficient model. In order to keep the analysis consistent and most straightforward for interpretation, the model will be operationalized using a multilevel interaction term. This term gives the effect of the interaction between a level 1 variable and a level 2 variable to show the effect on the sub-level of the major level variable.

For the robustness check, the interaction term between the cultural variables (level 1) will be interacted with the firm-specific variables (level 2), which is the same interaction effect as used in the panel data analysis. Apart from the change in model, all variables will be the same. The generalized multilevel estimation is given by the following equation:

$$lPrice_{it} = \gamma_{00} + \gamma_{01} * culture_j + \gamma_{10} * lESG_{ij} + \gamma_{11} * lESG_{ij} * culture_j + \beta_2 * lBVPS_{ij} + \beta_3 * EPS_{ij}$$
$$+ \beta_4 * lAssets_{ij} + \beta_5 * beta_{ij} + \delta_1 * industry_i + u_{1j} * lESG_{ij} + u_{0j} + \epsilon_{ij}$$

This equation clearly shows the deviation from the panel data regression equations given before. A first difference is the fact that there is no constant factor, β_0. In the random coefficient model, this factor is given by this equation:

$$\beta_0 = \gamma_{00} + \gamma_{01}$$

This equation holds, because the intercept is allowed to change per group of level 2 variables. Also, because of the fact that the coefficient can change in this model, there is no constant slope factor, β_1. Rather, this slope is given by the following equation:

$$\beta_1 = \gamma_{10} + \gamma_{11} * culture_j + u_{1j}$$

This clearly shows that the slope of the value relevance relationship is impacted by the level 1 variable, being culture. In these equations, the culture variable will be replaced by the Hofstede dimensions per hypotheses. All will be investigated individually, again, because of multicollinearity concerns.

Another difference stems from the addition of multiple error terms. It is useful to explain these error terms. The first term, u_{1j}, shows the variance in the slope between all countries. The second term, u_{0j}, shows the variance in intercepts between all countries. The third term, ϵ_{ij}, provides the variance between the firms, which is also present in more standard models, such as panel data methods.

Now that the regression equation is stated and explained, one final note has to be made, which provides the shortcoming of the multilevel approach. It is fact that multilevel approaches are always cross-sectional in nature. Therefore a major benefit of panel data is forsaken, which is the ability to analyze the relationship overtime. Yet, in order to provide a substantially comprehensive view, all years will be independently analyzed per model. The results will be discussed in the next subsection.

5.2 Results

All models have been estimated for each year individually. All estimates are robust to heteroskedasticity. In turn, the results will be discussed through the inspection of the results tables that are depicted below. Important to note is that every table covers a different model, with a different cultural influence. Per table all four years are depicted. Now, all results will be discussed and contrasted to the results from the panel data analysis.

In table 3, the results have been depicted for the analysis of the model including the power distance index (PDI). All four years have been analyzed independently, and the results are shown in the subsequent columns, each indicated as per year of analysis. From the results we observe that there is a positive effect of CSR performance on a company's share price, which is significant at the 1% level. This finding is contrary to what has been found in the panel data analysis. A potential driver of this difference is the fact that the multilevel analysis can only compare different firms, while the panel data analysis can also analyze the difference from year to year for a given firm. From the multilevel analysis, it is to be concluded that firms that perform well on the basis of their social responsibility receive a significant premium of 0.269 dollars per extra point on their ESG score.

With regards to the financial variables, we observe that the earnings per share, overall, is deemed significant in most years, at a minimum of the 10% level, except for the insignificant result in the year 2007. The coefficient on the earnings per share measure is practically insignificant, however. These findings are consistent with the panel data analysis. The book value per share, also, comes back with the same results as found in the panel data analysis, with a very consistently positive and significant effect at the 1% level. A surprising effect is found on the total assets measure, which is found to have a negative effect, significant at the minimum of the 5% level. This is surprising, as theory and previous findings predict a positive effect. The beta measure is significant, while it was not in the panel data analysis, at the 1% level. The sign is surprising, as it states that firms that carry larger risk are consistently valued at lower rates than firms with higher levels of risk. This is surprising, because higher risks should, on average, be met with higher rewards, in theory.

Then, the variable of interest, given by the interaction term, provides a significantly negative effect at the minimum 1% confidence level. The most significant findings are found in 2017 and 2019. What is most surprising about this finding is that the sign is exactly the contrary of what was found in the analysis based on panel data. Based on the finding presented in table 3, the first hypothesis would have been corroborated, while the panel data analysis had rejected it. As for the interpretation of the interaction effect, a margins plot has been projected in *Appendix H*.

Table 2. Random Coefficient Results: Power Distance

	2016	2017	2018	2019
CSR performance (log)	0.269***	0.336***	0.298***	0.355***
	(0.064)	(0.044)	(0.050)	(0.037)
Earnings Per Share	0.000	0.000**	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Book Value Per Share (log)	0.677***	0.721***	0.704***	0.750***
	(0.089)	(0.077)	(0.075)	(0.077)
Total Assets (log)	-0.092***	-0.090**	-0.078***	-0.109***
	(0.033)	(0.035)	(0.029)	(0.028)
Beta	-0.330***	-0.220***	-0.247***	-0.175**
	(0.093)	(0.071)	(0.088)	(0.069)
CSR (log) * Power Distance Index (log)	-0.360*	-0.513***	-0.470**	-0.513***
	(0.189)	(0.161)	(0.189)	(0.194)
Constant	3.417***	2.841***	2.744***	3.041***
	(0.934)	(0.897)	(0.863)	(0.805)
Variance Power Distance Index (log)	-17.389	-8.424***	-13.726***	-7.796
	(83.325)	(0.011)	(5.007)	(52.543)
Variance Intercept	0.299	0.348**	0.346*	0.374**
	(0.193)	(0.173)	(0.184)	(0.176)
Variance Residuals	-0.078**	-0.172***	-0.123***	-0.101**
	(0.039)	(0.041)	(0.042)	(0.049)
Number of Observations	3437	3704	3768	3819
IntraClass Correlations	.6800	.7387	.7184	.7213

Robust standard errors are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1*

The margins plot in the appendix clearly shows that the models converge towards one point. Overall, thus, firms with exceptionally high CSR performance are always rewarded to somewhat the same extent. We also note that, as the score on the power distance index increases, the relationship becomes less steep. Apparently, societies with higher levels of acceptance towards inequalities are more indifferent to CSR performance than countries with lower tolerance of inequality, who tend to punish bad CSR performance by pricing down the firm's stock. This is what was hypothesized before. Yet, the surprising fact is that this is the exactly opposite result of what was found under panel data analysis. The robustness of that finding, thus, is questionable.

What should be noted from these results is the high intraclass correlation measure. The intraclass correlation measures the ratio of the between-cluster variance to the total variation. In other words, it measures how much of the variation is captured by the clustering of observations, which in this case, is done per country. The high intraclass correlation shows that there is, in fact, a high degree of clustering within the sample, underscoring that the similarities between firms from the same country are supposedly larger than the similarities between firms from different national origins.

Turning attention towards the results with respect to the second model, which includes the interaction effect between a company's CSR performance and the individualism vs collectivism measure, as depicted in table 4. We find identical effects on CSR performance as a stand-alone value. Overall, an increase of 1 unit in the ESG score will be rewarded with an increase in the share price with a lower bound of 0.270 units and an upper bound of 0.367 units. These results are highly significant in all cases, as findings suggest significant deviations from 0 at the 1% confidence level.

With regards to the traditional financial accounting variables, the results project the exact same view as depicted in table 4 in terms of significance. All factors are significant, with exception of the earnings per share measure in the year 2016, only. The signs have not changed with respect to table 3, in which the first model was estimated. We again observe high levels of intraclass correlation.

The interaction effect between individualism and CSR performance is found to be significant at the 1% level in all years, with exception of the year 2016, which yields an insignificant effect. The sign is found to be positive. Again, the findings suggest the exact opposite sign as to the sign found in the panel data analysis. Through the inspection of the margins plot in the appendix, we find that, as the individual character of a society increases, the more positive the rewards to CSR performance will become for firms. This is surprising, as it goes against what was hypothesized and what was found under panel data analysis. The result is that the robustness of that finding should be questioned as well.

Table 3. Random Coefficient Results: Individualism

	2016	2017	2018	2019
CSR performance (log)	0.270***	0.348***	0.308***	0.367***
	(0.071)	(0.055)	(0.057)	(0.038)
Earnings Per Share	0.000	0.000**	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Book Value Per Share (log)	0.678***	0.722***	0.704***	0.750***
	(0.090)	(0.077)	(0.074)	(0.076)
Total Assets (log)	-0.092***	-0.091**	-0.079***	-0.110***
	(0.034)	(0.036)	(0.030)	(0.029)
Beta	-0.328***	-0.217***	-0.244***	-0.173**
	(0.093)	(0.071)	(0.089)	(0.070)
CSR (log) * Individualism (log)	0.120	0.227***	0.234***	0.265***
	(0.098)	(0.075)	(0.080)	(0.068)
Constant	3.429***	2.892***	2.819***	3.126***
	(0.908)	(0.845)	(0.821)	(0.758)
Variance Individualism (log)	-3.195	-7.203	-8.437***	-10.235
	(12.179)	(57.252)	(0.018)	(74.497)
Variance Intercept	0.241	0.255	0.290	0.310
	(0.323)	(0.208)	(0.211)	(0.193)
Variance Residuals	-0.077**	-0.171***	-0.123***	-0.102**
	(0.039)	(0.041)	(0.042)	(0.049)
Number of Observations	3437	3704	3768	3819
IntraClass Correlations	. 6537	.7010	.6954	.6951

Robust standard errors are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1*

Table 4. Random Coefficient Results: Masculinity

	2016	**2017**	**2018**	**2019**
CSR performance (log)	0.255***	0.316***	0.281***	0.347***
	(0.053)	(0.049)	(0.059)	(0.058)
Earnings Per Share	0.000	0.000**	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Book Value Per Share (log)	0.678***	0.723***	0.706***	0.751***
	(0.090)	(0.079)	(0.076)	(0.078)
Total Assets (log)	-0.090***	-0.086**	-0.074***	-0.107***
	(0.033)	(0.034)	(0.028)	(0.028)
Beta	-0.330***	-0.221***	-0.248***	-0.174**
	(0.093)	(0.071)	(0.089)	(0.070)
CSR (log) * Masculinity	-0.001	-0.002	-0.001	-0.002
	(0.002)	(0.002)	(0.003)	(0.003)
Constant	3.185***	2.464***	2.483***	2.536***
	(0.867)	(0.829)	(0.834)	(0.870)
Variance Masculinity	-3.803***	-3.826***	-3.795***	-3.766***
	(0.422)	(0.263)	(0.245)	(0.308)
Variance Intercept	-1.075	-18.973	-16.910	-15.000
	(1.652)	(65.037)	(75.597)	(60.647)
Variance Residuals	-0.076*	-0.168***	-0.119***	-0.099**
	(0.039)	(0.053)	(0.042)	(0.049)
Number of Observations	3437	3704	3768	3819
IntraClass Correlations	.1192	.0000	.7876	.8211

Robust standard errors are in parenthesis
*** p<0.01, ** p<0.05, * p<0.1*

With regards to table 5, in which the interaction of CSR performance and masculinity is analyzed, we find that same conclusions with regards to CSR performance: a significantly positive effect, which is constantly significant at the 1% level. In this model, firms are rewarded with a premium ranging from 0.255 to 0.347 on their share price as per 1 unit increase in their ESG score. The traditional accounting variables are significant, in most cases, and carry the same signs as found in the prior multilevel analyses before. Surprising is the fact that the intraclass correlation is low in both 2016 and 2017, whereas it is quite high in the subsequent years 2018 and 2019. This tells us that clustering is questionable in the first years.

The interaction effect is found to be of no statistical significance. This finding is consistent across all years analyzed and is also consistent with the findings under panel data analysis. As a result, the robustness of the finding in panel data is confirmed. Therefore, masculinity is not playing a role within the value relevance relationship. As a result, the rejection of hypothesis 3 is corroborated repeatedly, independent of the manner of analysis.

Table 6 depicts the results of the model that includes the cultural influence of uncertainty avoidance. With regards to CSR performance, we observe a strongly significant result at the 1%-level. A 1 unit increase in the ESG score of a company, given that uncertainty avoidance is at its mean, would lead to the reward of a premium ranging from 0.270 to 0.378 dollars on the firm's share price. The traditional accounting variables are significant, with one minor exception in 2016 for the earnings per share measure. The signs are consistent with prior findings based on multilevel data.

Emphasizing the interaction effect, we again find that the sign has flipped in contrast to the panel data analysis results. This questions the robustness of the findings presented in the previous section. In order to visualize the value relevance relationship and the influence of the cultural variable, a margins plot has been depicted in *Appendix H*. Again, we see a conversion to a single point. We also find that increasing levels of uncertainty avoidance decreases the slope of the value relevance relationship. However, higher levels of uncertainty avoidance in fact lead to higher valuations to identical levels of CSR performance. This shows some strange results, which not necessarily contradict a positive effect within the cultural context. Yet, due to the negligible change in slope, the moderating effect is not supported substantially. Therefore, the robustness of the finding should be questioned.

Table 5. Random Coefficient Results: Uncertainty Avoidance

	2016	**2017**	**2018**	**2019**
CSR performance (log)	0.270***	0.346***	0.310***	0.378***
	(0.063)	(0.050)	(0.056)	(0.038)
Earnings Per Share	0.000	0.000**	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Book Value Per Share (log)	0.677***	0.721***	0.704***	0.751***
	(0.089)	(0.078)	(0.075)	(0.078)
Total Assets (log)	-0.092***	-0.090**	-0.078***	-0.111***
	(0.034)	(0.036)	(0.030)	(0.029)
Beta	-0.327***	-0.217***	-0.245***	-0.171**
	(0.092)	(0.070)	(0.089)	(0.070)
CSR (log) * Uncertainty Avoidance (log)	-0.204**	-0.291***	-0.278**	-0.350***
	(0.101)	(0.105)	(0.119)	(0.107)
Constant	3.384***	2.782***	2.685***	2.970***
	(0.932)	(0.878)	(0.844)	(0.765)
Variance Uncertainty Avoidance (log)	-11.514	-9.457	-12.230	-7.950
	(56.741)	(81.197)	(45.228)	(13.130)
Variance Intercept	0.232	0.224	0.247	0.267
	(0.204)	(0.196)	(0.199)	(0.182)
Variance Residuals	-0.077*	-0.170***	-0.121***	-0.101**
	(0.039)	(0.041)	(0.043)	(0.050)
Number of Observations	3437	3704	3768	3819
IntraClass Correlations	.6495	.6873	.6763	.6761

Robust standard errors are in parenthesis

*** p<0.01, ** p<0.05, * p<0.1*

Table 6. Random Coefficient Results: Long Term Orientation

	2016	2017	2018	2019
CSR performance (log)	0.274***	0.350***	0.309***	0.365***
	(0.081)	(0.065)	(0.064)	(0.041)
Earnings Per Share	0.000	0.000**	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Book Value Per Share (log)	0.675***	0.717***	0.699***	0.746***
	(0.086)	(0.074)	(0.071)	(0.074)
Total Assets (log)	-0.093***	-0.092**	-0.080***	-0.111***
	(0.034)	(0.036)	(0.031)	(0.030)
Beta	-0.325***	-0.216***	-0.242***	-0.171**
	(0.092)	(0.071)	(0.088)	(0.070)
CSR (log) * Long Term Orientation (log)	-0.163	-0.242***	-0.248***	-0.239***
	(0.103)	(0.059)	(0.070)	(0.054)
Constant	3.519***	3.025***	2.954***	3.222***
	(0.861)	(0.827)	(0.787)	(0.753)
Variance Long Term Orientation (log)	-2.205	-10.447	-8.943	-6.617
	(8.351)	(55.871)	(63.289)	(21569.921)
Variance Intercept	0.244	0.310	0.341	0.326
	(0.983)	(0.214)	(0.211)	(11.046)
Variance Residuals	-0.078**	-0.172***	-0.124***	-0.102**
	(0.038)	(0.041)	(0.043)	(0.050)
Number of Observations	3437	3704	3768	3819
IntraClass Correlations	.6555	.7240	.7170	.7017

Robust standard errors are in parenthesis

*** p<0.01, ** p<0.05, * p<0.1

At last, table 7 will be inspected to see what has happened to the findings for the long-term orientation dimension. All classical variables have the same sign and significance as in the tables presented before. The CSR performance measure, again, yields a significantly positive return to the share price, ranging from 0.274 to 0.365 US dollars per unit of increase in the ESG score per firm. The measure of intraclass correlation is rather stable over the analyzed periods, with a minimum of .6555 and a maximum of .7240, indicating that there was clustering among firms within countries.

Then, the interaction effect is to be inspected. From the table we observe that there is no significance found under multilevel analysis. Therefore, we cannot say anything about a supposed relationship or moderating effect in this case. A further investigation, thus, is inappropriate, which is the reason why no margins plot will be inspected. As a result, the robustness of the finding under panel data analysis, which confirmed a significantly negative relationship, should be put into question.

To summarize, this section employed a multilevel analysis in order to inspect the robustness of the findings presented in the previous section. The panel data analysis as used to generate those results employed a disaggregation method, which could lead to statistical problems due to clustering of firms within countries. The multilevel results have yielded oftentimes contradictory results, as was the case for model 1, 2, and 4. There was no significance found in models 3 and 5, in the multilevel analysis.

Due to the conversions in signs when comparing the two different methods, the robustness of the findings under panel data is questionable. Yet, it is important to consider the potential driver of the differences found. As a suggestion, a potential pitfall of multilevel analysis should be taken into account, here, which is that it cannot investigate effects for the same firm over a prolonged time period. Rather, it can only analyze differences between firms at a given moment in time.

This is a big disadvantage of multilevel analysis, which was ultimately the primary reason to base the main results section on a panel data analysis, which is capable of both. The reason why this shortcoming is very applicable to this particular analysis is the fact that firms' share prices are analyzed. Differences in share prices between firms are oftentimes quite arbitrary, as a lot of different factors are in play that drive these differences. These factors do not only include objective factors, such as those that were added in this analysis. Rather, these differences might be driven by firm-specific bubbles, which are oftentimes guided by heuristics and biases within investor trading behavior.

Panel data, however, can correct for these effects to a larger extent, because it also inspects differences from year-to-year within the same firm, for which the same behavior is logically applicable. This makes an assumption that prices are fair and consistently more viable under panel data analysis than under multilevel analysis. Therefore, the results under multilevel analysis are potentially more questionable

than the panel data analysis. Yet, the robustness of these findings is still to be questioned under the results found in this particular section.

Having discussed two methods of analysis and their results, it is time to conclude this thesis with a conclusory section. In the next section, this thesis and its findings will be summarized. Afterwards, the last section will finally discuss limitations and suggestions for further research.

6. Conclusion

This thesis has set out to discover a rather new branch of economic literature: the value relevance of CSR performance information. Value relevance literature has been accumulated in increasing amounts in the accounting literature, yet it has been applied to a lower extent to the field of Corporate Social Responsibility. As an increasing number of firms worldwide has started to disclose information concerning their social performance, it is of vital importance to investigate the usefulness of this information to investors. Previous literature on the decision usefulness and value relevance of CSR disclosures and CSR performance information is still underdeveloped and suffers from limitations.

First, prior research concerning the value relevance of CSR information, for a substantial proportion, has been based on qualitative method, leaving a void to be filled with quantitative methods based research. Second, the already existent body of literature within this field that is based on quantitative research oftentimes focuses solely on specific countries and industries. This creates the necessity for research investigating the matter while covering both multiple countries and industries. Third and last, results have been considerably mixed regarding CSR disclosures: in some countries prices move negatively in relation with CSR information, while in other regions CSR disclosures are met with positive price movements. Although there is some evidence for a positive relationship of CSR performance information and price movements, the body of literature is still sparse and needs to be elaborated on. Moreover, the variation in results reported in overall value relevance literature on CSR information indicate the potential for differences among countries driving these different results.

As a response to these shortcomings and suggestions from previous research, this thesis estimated an empirical relationship between the share price and a company's CSR performance, as measured by ESG scores. In doing so, it built upon the Ohlson model, which is commonly used in prior research to estimate the value relevance relationship. In addition to this model, in an effort to expand knowledge on the potential drivers of the variation in reported findings in previous research, this thesis added moderating effects with national culture, as it hypothesized that cultural differences amongst countries could play an important role in explaining the differences in results from the national studies considered. National culture was captured by the Hofstede cultural dimensions, as is done in many previous research papers on national culture.

Through an estimation based on panel data, covering a number of 4,007 firms from 17 countries throughout the period 2016-2019, this thesis has found significant findings on several of the moderating effects of the Hofstede dimensions. Through a robustness test based on a multilevel analysis, these findings have been retested, as to check whether they had suffered from severe statistical problems. The conclusions from this thesis are as follows.

Based on the primary analysis method in this paper we learn that culture tends to play a significant moderating role within the value relevance relationship of CSR performance information. More specifically, three major findings have been extracted.

First, it is found that there is a conditional moderating effect for the degree of individualism in a society. From the analysis stems the insight that societies that tend to score below average on the individualism measure tend to value good CSR performance at a premium. This effect is explained by the theoretical perspective that rather collectivistic societies emphasize communal thinking, increasing the emphasis they place on a firm's environmental and social impact. On the contrary, rather individualistic societies tend to be indifferent about a firm's social performance, or even tend to punish firms for CSR performance by pricing down its shares. These individualistic societies tend to shift emphasis away from the community towards the individual, indicating that they do not consider a firm's social impact to be of major importance.

Second, another conditional moderating effect has been confirmed for the uncertainty avoidance index. This conditional moderating effect shows that societies that are more reluctant to face uncertainty tend to reward firms that perform well within the CSR realm. This effect is driven by the idea that CSR performance signals long-term prospects for firms to remain relevant in the future and its ability to adapt to a changing environment. A favorable signal decreases risk to investors and, therefore, increases these shareholder's interest. Societies that are more indifferent towards uncertainty seem to put a larger emphasis on more traditional manners of doing business, as they are found to punish firms that perform well within the social environment. This effect potentially stems from the fact that these shareholders would rather see their firms spend valuable resources on other segments of the enterprise.

Third, the panel data analysis shows another conditional moderating effect for the long term orientation dimension. Explaining this effect shows that societies that tend to plan more for the future, indicated by a higher score on this dimension, tend to reward high CSR performance to a larger extent than societies that behave more leniently towards the future. The latter society tend to reward CSR performance, but to a lesser extent than the former society, which shows that these societies tend to use CSR performance information to a lesser extent when making financial decisions.

These findings show great findings on the influence of culture within the value relevance paradigm surrounding CSR performance. Yet, a robustness test was conducted in order to control whether the panel data analysis suffered from statistical problems. This robustness test was conducted on the basis of multilevel analysis, as this method effectively counteracts the statistical problems that arise in panel data due to the use of variables from multiple levels of analysis.

The robustness test showed surprising results, as all moderating effects were found to have flipped in their signs as opposed to the main analysis based on panel data. Yet, the significance of the influence of culture has been confirmed by both methods. Aiming to explain this surprising conversion in signs, two differences of these methods need to be highlighted. First, the panel data method has a major advantage over multilevel data: it considers both effects within the same firm over multiple years as the differences between firms in a given year. The multilevel approach, however, cannot perform the former analysis, as it is cross-section by nature. Therefore, it solely relies on price differences between firms only. These price differences are usually more arbitrary than price differences from year to year for the same firm, as there are a lot of inter-firm differences. Amongst these differences, there will always be firm-specific effects that cannot be effectively controlled for while maintaining such a large dataset. As a result, the arbitrariness of these price differences between firms could be driving the sign conversion through the potential picking up of an omitted effect of the analysis.

Second, this arbitrariness of the multilevel approach is enlarged by the fact that the panel data method in this thesis employed a fixed effects estimation. Through such estimation, the analyst conveniently controls for all entity-specific non-varying factors. This is impossible in a convenient manner for the multilevel analysis, however. As a result, the overall fit of the first estimation must have been more reliable to inspect the sign of the moderating relationship than under the robustness analysis.

Yet, even though these speculations must be stated, the robustness of the findings presented on the basis of panel data should be questioned actively. One must do so, because it puts a potential limit on the extent of the findings in this thesis. At an absolute minimum, this thesis shows that culture does play a significant role in explaining differences in findings in the literature covering the value relevance of CSR performance information. This can be confirmed by the fact that significance was found through both methods, which are summarized in *Appendix I*. At its maximum potential, this thesis has uncovered a foundational view of the moderating role of three cultural dimensions: individualism, uncertainty avoidance and long-term orientation. In that sense, it carries insight into the manner in which investors use CSR performance information.

One relevant question remains: what are the practical implications of these findings? In the introduction of this thesis, two potential practicalities were given: one for firms and one for policy makers. Using this thesis, firms can establish a more thorough understanding of the preferences and needs of their shareholders. As this thesis has shown, culture partially shapes the rewards or punishments that firms receive for engaging in CSR. Therefore, understanding the cultural environment of one firm's shareholders, this firm can make well-considered decisions on the importance of CSR practice within their firm, resulting in more optimally allocated resources within the firm, optimizing efficient value creation.

For policy makers, then, this thesis makes an important case for the requirement to consider the cultural environment in shaping effective policies. In the battle for a more sustainable and more equal world, good CSR performance is needed within the corporate world. As the human race progresses into this world, CSR practices should be the norm for all firms, regardless of their business, sector, and country of origin. Policy makers, therefore, should shape effective policies that foster such behavior. These policies should be aimed at shareholders, as they provide the pressure for firms to engage in CSR practices more often and more effectively. Understanding the cultural environment of the target group is essential in order to shape such policies.

As this thesis shows, investors from different cultural backgrounds tend to think rather differently about rewarding firms for good CSR performance. This automatically implies that firms traded in different countries are pressured to a varying extent, because of the pressures from shareholders. More practically stated, one must concern the following: why would a firm engage in more CSR practices to improve its CSR performance if it is found not to be rewarded for doing so? These rewards, as found in this thesis, are partially shaped by a cultural background. For instance, a firm operating in a very individualistic society will be most likely to be punished for committing a substantial proportion of its resources towards CSR, because individualistic societies tend to place the individual over the community. As a result, this firm will not be pressured to engage in CSR activities.

The important question, then, is: how can policy makers foster CSR behavior when firms are not pressured to do so naturally? The practical answer cannot be provided easily, and doing so does not belong to the scope of this thesis. Yet, this thesis does show a pathway towards more effective policies through the insight that culture plays a significant role within investor cognition. Understanding culture and its influence within the realm of CSR, thus, will prove to be vital in reaching environmental goals through effective policy. As policy makers become aware of the cultural background of policy targets, they will be able to tailor policies in such a way that the build upon a society's receptive cognitive cultural factors, creating a larger impact made by these policies.

To conclude, this thesis has a simple message: *culture matters*. It is a message that has been found in different subfields within economics, and its relevance has been proven again within the realm of corporate social responsibility. As this thesis is the first to report such influence, it establishes a compelling foundational study for future research to build upon. As future research embarks upon this path towards a more thorough understanding, there are important factors to investigate. In an effort to enlighten the path that is to be taken by future research, the subsequent and last section of this thesis discusses the limitations of this study and provides important recommendations for future research.

7. Discussion

In the introductory section of this thesis, the following research question was posed: "to what extent does national culture moderate the relationship between CSR performance and firm value?" Now that all findings have been discussed, it is time to discuss the final answer to this research question. Without question, it can be stated that national culture significantly moderates the relationship between CSR performance and firm value. In that sense, this thesis has shown that national culture is a relevant moderating factor in the value relevance relationship of CSR performance information. More specifically, it is found that the individualism dimension negatively moderates this relationship, while the dimensions of uncertainty avoidance and long term orientation have been proven to be of positive moderation.

Yet, like any other empirical research paper, this thesis suffers from limitations. These limitations are discussed in this section, as well as recommendations for future research. The limitations in this thesis stem from multiple sources. First, it suffers from theoretical limitations with regards to the population that is used for the estimation. Second, it suffers from statistical and methodological problems with regards to assumptions, estimation and robustness. All limitations will be discussed in turn.

7.1 Limitations

Initiating the discussion with the theoretical limitation, which arises from the fact that this study aimed at providing a foundational study, as no previous study had been published on the influence of culture within the value relevance literature in the CSR realm. Because of this aim, a sample was drawn from an exhaustive population of firms, covering a considerable number of both countries and industries. Although findings, overall, show significance, this result should not blindly be generalized to be applicable to all industries and countries that are used in this paper. Rather, again, this thesis has shown that, on average, culture tends to play a role. Yet, it is probable that the relationship differs per industry, as some industries tend to be more engaged in CSR practices than others. For example, it might be intuitively plausible for the banking sector to engage in more CSR practices than the energy sector. This thesis has not conducted such specific analyses, again, to adhere to its goal and to remain clear in its message.

Then, considering the methodological and statistical problems, multiple limitations must be mentioned. First, there is a limitation regarding the assumptions underlying the statistical model. As in any economic research, this thesis simplifies a dynamic and complex real-world phenomenon, capturing it in a linear estimation model. In order to reach simplification, this thesis rests upon implicit assumptions. Although this simplification need not be hazardous for the implications of this model, as it is generally recognized that simple models are good predictors, one assumption that is specific to this thesis should be mentioned. Without it being stated explicitly, this thesis assumes that firms have a vast majority of investors

that adhere to the same culture as does the firm itself. More practically stated, this thesis assumes a United States originated firm to have a majority of United States originated investors. This assumption is most likely true in the face of the large underlying body of literature covering the phenomenon of home bias, in which it is found that investors tend to invest disproportional amounts of their endowments in firms traded at the stock exchange in their home cultures. Yet, a limitation does arise in the sense that it makes this research more applicable to some countries, while making it less so in other countries. This arises from the fact that some stock exchanges are less internationally well-known than others. In other words, those exchanges that are most renowned internationally will attract more investors from around the globe than those exchanges that are less internationally grounded. Consider the fact that the United States stock exchanges such as the New York Stock Exchange (NYSE) are much more renowned than, say the South Korean Stock Exchange. It is more probable than not to assume that, as a result, there will be a more substantial mix of cultural influence on the more internationally renowned stock exchanges than in exchanges that are less so, due to the simple fact that more people are familiar with the companies traded on these well-known stock exchanges. This should be investigated further, in order to check whether the global character of a stock exchange plays a role within this thesis' findings.

Second, this thesis is limited towards the estimation methods employed. Simply stated: no estimation method is fully flawless. Therefore, a constant trade-off is to be made between estimation methods' strengths and weaknesses. This thesis has used the benefits of two estimation methods. First, it employed panel data, which resulted in two major benefits: the ability to achieve a large dataset and the ability to analyze differences overtime for the same economic entities. However, a major disadvantage of using panel data for this thesis is the fact that it employed fixed effects regressions, as a result of the significant result of the Hausman test. Fixed effects estimations naturally prohibit the explicit estimation of non-varying factors, which is why the cultural dimensions' standalone effects could not be explicitly estimated in this thesis. Another disadvantage that is applicable to panel data in this thesis is the fact that it was interested in a multilevel interaction effect, which leads to implicit clustering behavior of the data through the disaggregation method.

As a second method, a multilevel analysis was employed. This estimation method results in the major benefit that the model can more accurately address the significance on the interaction effect between two variables from multiple levels of analysis. The inclusion of the multilevel analysis, thus, counteracts the second major disadvantage of panel data in this case, as it effectively corrects any statistical problems with regards to the overstatement of significance under panel data. Yet, as a major disadvantage, this method loses the ability to analyze effects overtime for the same entities because of its cross-sectional nature. This resulted in an analysis that relies on rather arbitrary inter-firm price differences. This effect is

enlarged by the fact that the multilevel analysis did not effectively control for unobserved firm-specific factors. The fixed effects method, on the contrary, was able to do so.

Even though these method have been employed in combination, leading to a reduction in overall shortcomings due to either specific method, it should be noted that these two methods have not been perfectly complementary, as both yielded different signs. Yet, both models have shown significance, which shows that, independent of the method of estimation, culture plays an important moderating role within the value relevance paradigm of CSR. Yet, it remains surprising at a minimum that this conversion in signs occurred when the method of analysis changed, which is why the overall robustness of the findings should be noted as a limitation.

Third, this thesis' dataset encountered considerable statistical problems. First of which was multicollinearity amongst the cultural variables, which prohibited the analyst from including all cultural factors in one estimation altogether, resulting in a less comprehensive insight into the interplay of the cultural dimensions. Second, the presence of heteroskedasticity was confirmed. Even though heteroskedasticity only has its effect on standard errors, and therefore, significance of the findings, it still endangers the overall confirmation of significance. This thesis has aimed at alleviating this problem by calculating heteroskedasticity robust standard errors, yet it should be noted that the problem of heteroskedasticity was present in such magnitude that it could be well possible that the results are still driven by its presence. Third, this thesis suffered from the fact that the Hausman test stressed the inapplicability of random effects estimation to the data. As a result, fixed effects models were employed, resulting in the inability to explicitly control for cultural environmental factors, as they are automatically controlled for due to their time invariant character. This thesis, thus, suffered from problems, which it has attempted to alleviate fully. Yet, it should be noted that this alleviation might have been imperfect.

Fourth and last, this method suffers from a limitation in the measurement of its major independent variables: culture and CSR performance. First, capturing culture within a numerical paradigm is not easily performed, as culture is a soft institution: it cannot be touched. Therefore, it is unwise to state that the measurement of the cultural influence is perfect. This thesis has, nonetheless, used a prestigious and well-known measurement of culture: the Hofstede dimensions, which increases its connection with other research in the cultural paradigm of economics. Second, CSR performance is measured by the computed ESG scores that are available in the Refinitiv Eikon Database. It should be noted that this comes with two limitations. First, as overall CSR performance is measured across the total of the three pillars in ESG - Environmental, Social, and Governance - this measure falls short to show excellence on either one of these pillars, while others might lack in performance. This provides a less exhaustive view on the matter of CSR. Second, this measure is based on a firm's self-reported CSR performance, which of course should be met

with a healthy amount of skepticism. It is probable that firms inflate their CSR performance within their reports, even though their actual performance lacks. Therefore, the ESG score should not be taken as an objective and absolute measure, but rather an indication of firm scoring and their respective ranking in terms of performance. Although the embedding of this thesis in prior research' frameworks and measurements, the imperfection of the combination of the two measures of both culture and CSR performance remains a limitation.

To summarize, this thesis suffered from the following limitations. From a theoretical perspective, it covered a vast population in order to establish a baseline for future research, leading to a presentation of results that should not be blindly generalized to be applicable to all industries and countries. From a methodological perspective, this thesis suffered from a questionable applicability of its underlying assumption across different environments, a questionable robustness due to model imperfections, major statistical problems such as multicollinearity and heteroskedasticity, and the imperfection of measurements of its core variables of interest.

These limitations result in interesting paths for future research to discover. Furthermore, as this thesis has established a foundational understanding of the importance cultural influence, it provides major insights for future research to build upon. These insights can be summarized into recommendations, which is performed in the last subsection of this thesis.

7.2 Recommendations

Future research should, first of all, focus on the further elimination of the limitations of this thesis. In order to counteract the theoretical limitation discussed, research should conduct multiple studies with a similar setting, for different industries independently. This will establish a more thorough understanding of where the findings presented in this thesis hold and in what instances they do not. Also, an inquiry can be performed into a population consisting of even more countries or a different selection of countries.

As a second recommendation, aiming to overcome the methodological shortcomings of this paper, multiple suggestions can be made. First of all, to address the validity of the underlying assumption of the dominant culture majority in the country of origin, future research should investigate the potential influence of stock market openness. It could be that more open stock markets have less influence of the national culture in which that market operates because of a more elaborated mix of cultures at play in that market.

Second, future research should investigate multiple methods of investigating the cultural influence on the value relevance relationship of CSR performance and the share price. In doing so, future research should add more complexity and context to the foundation that this thesis provides. It could do so by

including qualitative methods in the form of questionnaires to gain larger insights of the view of shareholders on the importance of CSR across different cultures. Also, the use of random effects regression methods could prove to be useful, were the data to allow such method.

Overall, future research should take the findings in this thesis and build upon them through building a more elaborated understanding of the complexities underlying the findings. What is the most probable initial step in this process is to conduct more research that can validate or falsify the robustness of the findings presented in this thesis. The need for this action is underlined by the questionable robustness of this thesis' findings. One practical manner in which this can be performed is by addressing different dependent variables, apart from the share price, such as returns and cumulative abnormal returns. This is general practice in value relevance research. Yet, these research methods are more advanced and complicated, which is why they were not covered in this thesis. Also, again, this thesis was connected specifically to previous value relevance research of CSR performance, which mostly used the share price as a dependent variable. Still, investigating the influence on cumulative abnormal returns will prove to be very interesting for firms specifically, as this could potential signal other, less conventional, ways to outperform the market.

Apart from overcoming research problems of this thesis, some interesting paths can be discovered by future research. One of these paths is to extend the research towards the inclusion of firm culture. The intuition behind this suggestion is that firms, normally, tend to deviate from national culture in their own way. This is what sets them apart from the competition. This deviation, then, can shape the shareholder base that these firms attract, even though national culture mandates otherwise. The influence of firm culture can be based on qualitative questionnaire research in order to establish an understanding of the prevailing firm culture and simple regressions with the share price. This research carries great promise, as it would show which firm cultures promote CSR performance and boost share prices. This, again, has great practical relevance for both firms and policy practitioners.

Another potentially interesting path for future research to embark upon is the influence of the multinational aspect within firms. Multinational firms could be influenced by different cultural backgrounds, as they are exposed to different cultures due to their cross-border operations. As a result, it could be that we can learn a lot from these firms, as they could use these influences to their advantage in shaping a more efficient firm culture. This firm culture could, then, be of great importance to promote CSR engagement and performance.

At last, a suggestion can be made to include the influence of CSR reporting standards, such as the Global Reporting Initiative (GRI) standards, on the relevance of culture. In recent history, such standards

were much more absent than today, and more standards are being developed. Through the development of these standards, the usefulness of value relevance should, in theory, increase. It would be very interesting to investigate what is the influence of these standards on investor decision-making. For instance, it would be plausible that these standards would make investors act in a more rational way. This would have its influence on the value relevance of CSR performance, overall, and it could be that the role of culture changes, as well.

To conclude, this thesis provides a compelling case for the influence of culture within investor decision-making on the basis of CSR performance information. The fact that culture is found to be of material importance creates the need for future research to embark on inquiries that refine our understanding of the mechanics of this influence. Also, further investigation into soft institutional factors, such as firm culture, should be investigated. Furthermore, the influence of the industrial and regulatory environment could have their influence as well.

At last, the time has come to conclude this thesis. Yet, before doing so, focus should remain on the central message of this work: culture matters. This has been shown consistently through the use of both theory and quantitative methods. The foundation has been laid out. Now comes the time for future research to establish a more elaborate understanding of the cultural mechanics underlying these findings, as well as the different contexts in which its influence resides.

Appendices

Appendix A. Schematic and Consolidated Hypotheses

Table A1 Consolidated Hypotheses

	Hypothesis Statement
1.	Power Distance negatively moderates the relationship between CSR performance and firm value
2.	Individualism negatively moderates the relationship between CSR performance and firm value
3.	Masculinity negatively moderates the relationship between CSR performance and firm value.
4.	Uncertainty avoidance positively moderates the relationship between CSR performance and firm value
5.	Long term orientation positively moderates the relationship between CSR performance and firm value

Figure A2 Schematic Hypotheses
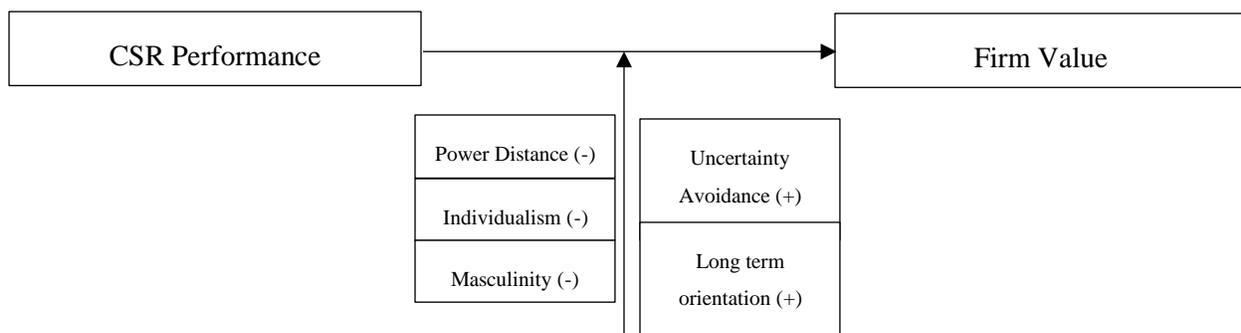
Appendix B. Distribution of Firms Across Countries

Country	Frequency	Percent	Cumulative
Australia	1348	8.41	8.41
Canada	1016	6.34	14.75
China	356	2.22	16.97
France	380	2.37	19.34
Germany	380	2.37	21.71
Hong Kong	736	4.59	26.30
Ireland; Republic of	32	0.20	26.50
Italy	180	1.12	27.63
Japan	1664	10.38	38.01
Korea; Republic (S. Korea)	464	2.89	40.90
Netherlands	156	0.97	41.88
New Zealand	192	1.20	43.07
Russia	136	0.85	43.92
Spain	168	1.05	44.97
Sweden	248	1.55	46.52
United Kingdom	1412	8.81	55.33
United States of America	7160	44.67	100.00

Appendix C. Distribution of Firms Across Industries

ICB Industry name	Freq.	Percent	Cum.
Basic Materials	1392	8.81	8.81
Consumer Discretionary	2736	17.31	26.11
Consumer Staples	848	5.36	31.48
Energy	904	5.72	37.20
Financials	2420	15.31	52.51
Health Care	1212	7.67	60.17
Industrials	2796	17.69	77.86
Other	132	0.84	78.69
Real Estate	1188	7.52	86.21
Technology	1164	7.36	93.57
Telecommunications	380	2.40	95.98
Utilities	636	4.02	100.00

Appendix D. Summary Statistics

Variable	Observations	Mean	St. Dev.	Minimum	Maximum
Share Price	15824	4.052	2.563	-9.21	14.047
CSR Performance	16028	42.817	21.195	0	94.552
Earnings Per Share	16000	242.47	2470.8	-120000	66903.5
Book Value Per Share	15973	3667.407	28894.06	-33400	720000
Total Assets	16001	1.83e+12	1.69e+13	110000	5.19e+14
Beta	15597	1.047	.581	-5.54	5.62
Uncertainty Avoidance Index	16028	52.725	18.678	29	95
Individualism	16028	75.975	23.114	18	91
Masculinity	16028	62.173	15.174	5	95
Power Distance Index	16028	44.422	11.796	22	93
Long Term Orientation	16028	44.172	24.739	21	100

Appendix E. Transformations per Variable

Variable	Distribution	Transformation
Share price	Lognormal	Natural logarithm
ESG score	Normal	None
EPS	Lognormal	Natural logarithm
BVPS	Lognormal	Natural logarithm
Beta	Normal	None
Assets	Lognormal	Natural logarithm
PDI	Lognormal	Natural logarithm
IND	Lognormal	Natural logarithm
MAS	Normal	None
UAI	Lognormal	Natural logarithm
LTO	Lognormal	Natural logarithm

Appendix F. Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Price (log)	1.000										
(2) CSR performance (log)	0.137	1.000									
(3) Earnings Per Share	0.308	-0.011	1.000								
(4) Book Value Per Share (log)	0.807	0.081	0.334	1.000							
(5) Total Assets (log)	0.608	0.282	0.230	0.773	1.000						
(6) Beta	-0.087	-0.011	-0.036	-0.017	-0.009	1.000					
(7) Uncertainty Avoidance Index (log)	0.429	0.038	0.165	0.621	0.467	-0.020	1.000				
(8) Individualism (log)	-0.376	-0.041	-0.218	-0.523	-0.704	0.036	-0.308	1.000			
(9) Masculinity	0.286	-0.066	-0.092	0.253	0.220	-0.019	0.364	-0.117	1.000		
(10) Power Distance Index (log)	0.227	0.035	0.136	0.400	0.580	0.009	0.333	-0.805	0.125	1.000	
(11) Long Term Orientation (log)	0.573	0.143	0.174	0.549	0.678	-0.068	0.423	-0.833	0.204	0.605	1.000

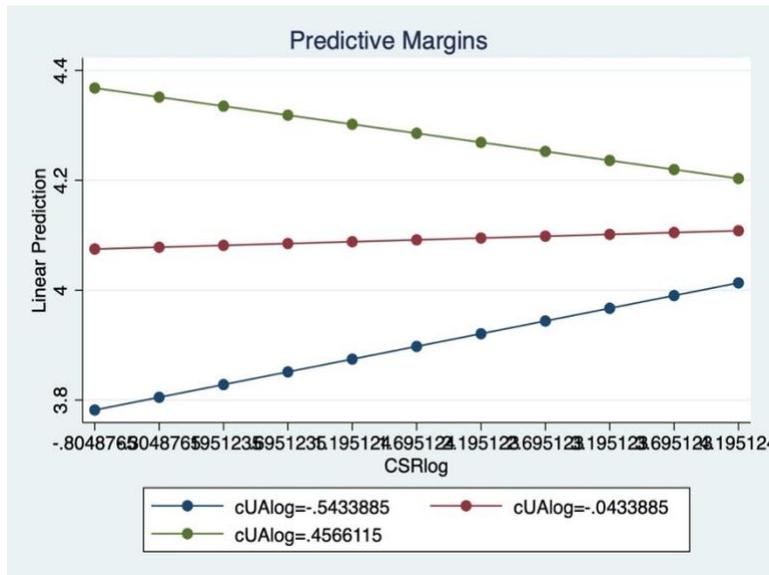## Appendix G. Margins Plots Per Significant Model (Panel Data)
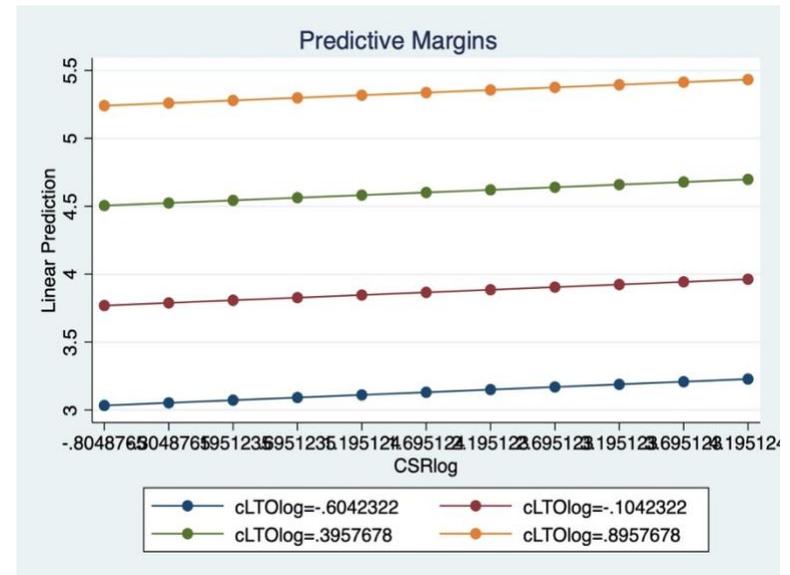
Model 1. Power Distance Index
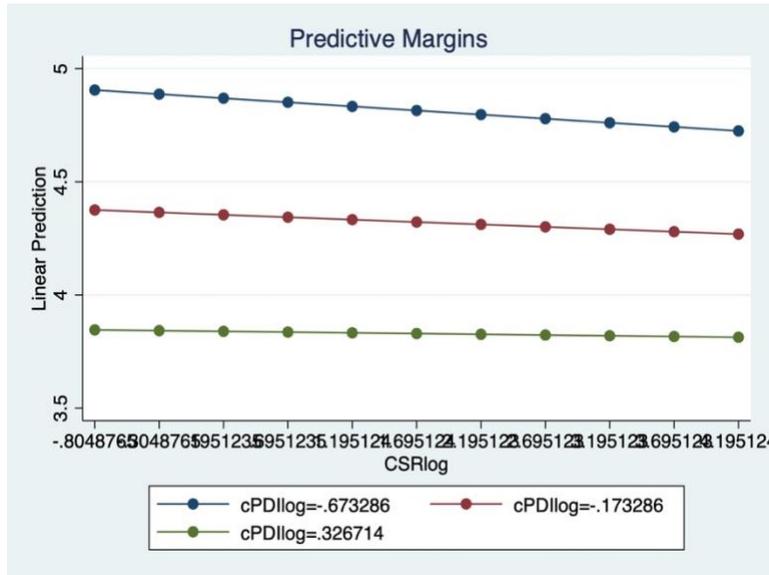
Model 2. Individualism vs Collectivism
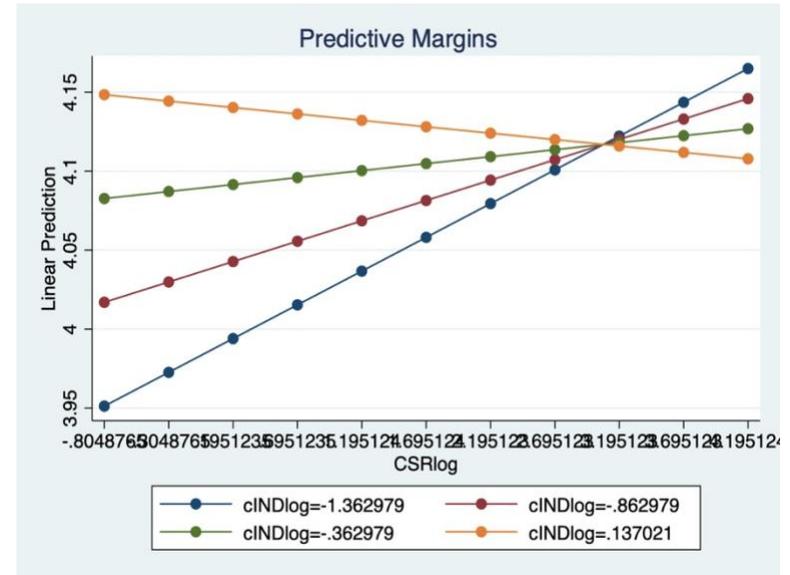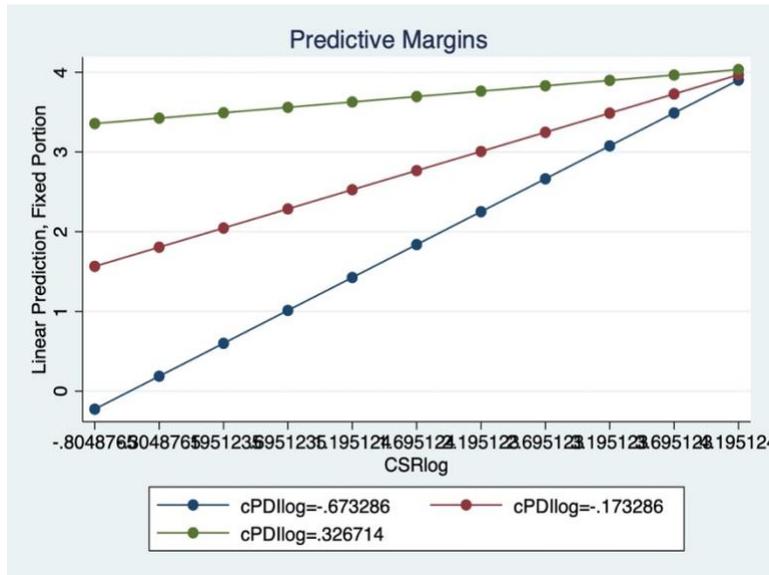

Model 4. Uncertainty Avoidance Index
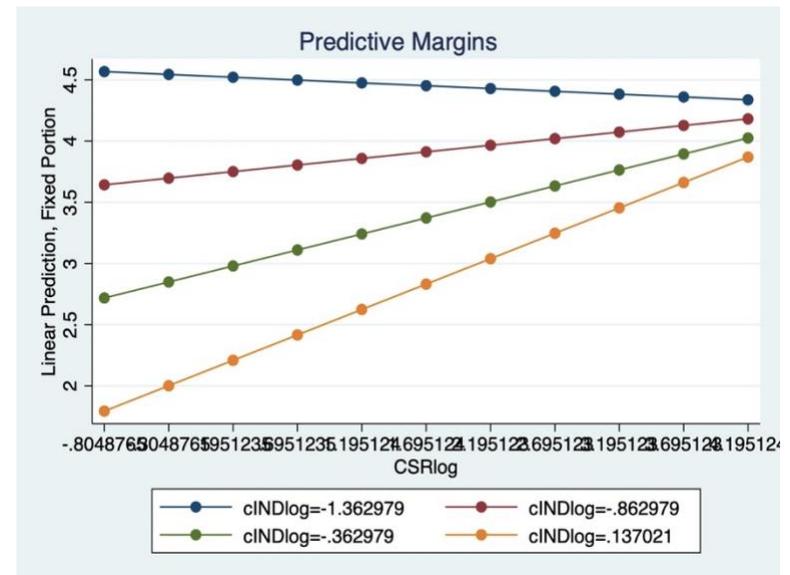

Model 5. Long Term Orientation

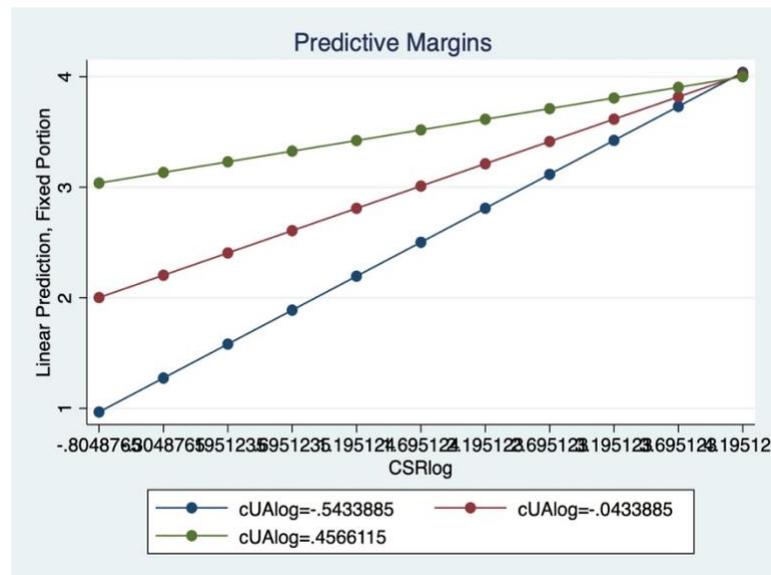# Appendix H. Margins Plots Per Significant Model (Multilevel Analysis 2019)

Model 1. Power Distance Index

Model 2. Individualism vs Collectivism

Model 4. Uncertainty Avoidance Index

Appendix I. Overview of Conclusions per Hypothesis

	Cultural Dimension	Hypothesized Moderation	Panel Data	Multilevel
Hypothesis 1	Power Distance	Negative	Rejected	Supported
Hypothesis 2	Individualism	Negative	Supported	Rejected
Hypothesis 3	Masculinity	Negative	Insignificant	Insignificant
Hypothesis 4	Uncertainty Avoidance	Positive	Supported	Rejected
Hypothesis 5	Long Term Orientation	Positive	Supported	Rejected

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