

Effect of CSR on Firm-specific Risks and Bank Value, Comparison between Eurozone and US Banks

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ABSTRACT

This thesis investigates the relationship between corporate social responsibility and the idiosyncratic risk, bank value of Eurozone and US banks. Tobin's Q used as a value indicator in order to assess the value of Eurozone and US banks. Thomson Reuters ESG scores are used to determine the CSR scores of these banks during the same period, and the effects of the environmental, social, and governance dimensions on idiosyncratic risk are investigated separately. The quantile regression method reveals a relationship between CSR and idiosyncratic risk over different risk levels. Aligning with stakeholder and legitimacy theory a significant negative relationship has been found between the overall CSR scores and the idiosyncratic risk of Eurozone and US banks for medium- to high-risk levels. Eurozone bank's stakeholders have an increased emphasis over CSR manners. The negative effect of CSR is nearly two times greater on idiosyncratic risk for Eurozone banks compared to the US banks which justifies the higher CSR score of Eurozone banks. The effect becomes stronger as the riskiness of the banks increases. Similar to the overall CSR score, the governance and environmental dimensions have a negative impact on Eurozone banks with medium- to high-risk levels. However Environmental dimension have a higher risk reducing effect for US banks over all quantiles compared to social and governance dimension. Even though CSR have a risk reducing impact, a negative relationship revealed between CSR scores and value of Eurozone and US banks. Findings over value reducing effect of CSR shows support the view of neo-classical and agency theory. Banks should consider amounts invested on CSR project and make strategic decisions as there is trade-off between risk mitigation and value decreasing effect of CSR.

Keywords: corporate social responsibility; idiosyncratic risk; banks; sustainable banking, tobin's q , ESG

ÖZ

Bu tez kurumsal sosyal sorumluluğun Eurozone ve Amerika bankalarının riski ve değeri üzerindeki etkilerini araştırmaktadır. Bankaların kendine özgü risklerini tanımlamak için idiosynkratik risk verisi kullanılmıştır. 31 Eurozone ve 35 Amerika bankasının 2002 ile 2019 yılları arasındaki idiosynkratik riskini tanımlamak için Carhart dört faktör modeli kullanılmıştır. Bankaların değerini belirlemek için ise Tobin's Q değeri kullanılmıştır. Bankaların kurumsal sosyal sorumluluk skorlarını belirlemek için Thomson Reuters ESG veritabanı kullanılmıştır. Ayrıca bankaların çevresel, sosyal ve kurumsal yönetim skorlarının idiosynkratik riskleri üzerindeki etkileride incelenmiştir. Kantil regresyon methodu kullanılarak kurumsal sosyal sorumluluk performansının değişik risk gurupları üzerindeki etkisi ayrıştırılıp gösterilmiştir. Çıkar gurubu ve meşruiyet teorileriyle uyumlu olarak orta ve yüksek riskli Eurozone ve Amerika bankalarının kurumsal sosyal sorumluluk performansları ile idiosynkratik riskleri arasında negatif bir ilişki bulunmuştur. Fakat Eurozone bankalarında bu negatif ilişki Amerika bankalarına göre yaklaşık iki kat daha fazladır ve bu Eurozone bankalarının yüksek kurumsal sosyal sorumluluk performansını anlamlaştırmaktadır. Ayrıca bankaların risk seviyesi arttıkça kurumsal sosyal sorumluluğun etkiside artmaktadır. Kurumsal Sosyal Sorumluluğun etkisine benzer bir şekilde çevresel ve kurumsal yönetim skorlarının orta ve yüksek riskli Eurozone bankaları üzerinde negatif bir etkisi saptanmıştır. Fakat Amerika bankaları için çevresel skorların, sosyal ve kurumsal yönetim skorlarına kıyasla tüm risk gruplarında daha yüksek negatif etkiye sahip olduğu açığa çıkmıştır. Ayrıca kurumsal sosyal sorumluluğun Eurozone ve Amerika bankalarının riskini azaltan etkisine rağmen, bankaların değerinde negatif etkilediği saptanmıştır. Bu çalışma

kurumsal sosyal sorumluluğun bankaların istikrarına katkı yaparken değerlerindeki negatif etkileyebildiğini göstermiştir. Kurumsal sosyal sorumluluğun bankaların değerini negatif etkilemesi neo-klasik ve vekalet teorisini desteklemektedir. Bu nedenle bankalar kurumsal sosyal sorumluluk projelerine yatırım yaparken bu projelerin riski azaltıcı ve değer azaltıcı etkisini göz önünde bulundurup stratejik kararlar almalıdır.

Anahtar Kelimeler: kurumsal sosyal sorumluluk, idiosynkratik risk, banka, sürdürülebilir bankacılık, tobin's q, ESG

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LIST OF ABBREVIATIONS

CA	Capital Adequacy
CAPM	Capital Asset Pricing Model
CSR	Corporate Social Responsibility
ECB	European Central Bank
ESG	Environmental Social Governance
GFC	Global Financial Crisis
IBES	Institutional Brokers' Estimate System
IR	Idiosyncratic Risk
OLS	Ordinary Least Square
US	United States
VIF	Variance Inflation Factor

Chapter 1

INTRODUCTION

History repeated itself and the need for safe and sound banks for a functioning economy was declared during the Global Financial Crisis (GFC) of 2007–2009. Following the GFC, banks and their stakeholders, including stockholders, depositors, borrowers, and regulators, started emphasizing the importance of sustainability criteria. Corporate social responsibility (CSR) principles are at the centre of sustainable banking's context. A number of international institutions such as, the European Banking Authority, Bank of England and European Commission have developed policies and highlighted the role of sustainability, which is operationalized through CSR strategies. Due to the increasing importance of the CSR risk concerns regulatory authorities, central banks, political institutions, and international financial institutions have developed and integrated CSR-based tools into the banks' risk management. Equator Principles (2020) which is a risk management system, used as a benchmark for financial institutions to assess social and environmental risk in projects before financing them. The European Commission (2018) announced an action plan in order to move towards a greener finance sector aligning with the Paris Agreement on climate change and argues that financial sector should support environmental and social goals for a healthy economic environment. Even though the US withdraw from Paris Agreement, with the election of President Biden they have re-joined the agreement and this shows the increased public pressure over environmental issues. Following a similar agenda, the European Banking Authority

in 2019 proposed a detailed plan to integrate CSR related risks in the stress tests of banks. Similarly, the Bank of England (2018) argues that climate change is a significant risk over the United Kingdom banking sector by increasing credit, market, reputational and operational risks. Moving towards a low carbon economy could negatively impact corporate earnings of the energy, transport, property and agriculture sectors and reduce their ability pay back their loans which creates a credit risk for banking sector. Increasing attention of society over climate change creates also a reputational risk over the banking sector. Bank stability is one of the essential prerequisites of an efficient and healthy functioning financial system. As banking crises present the failure of these institutions creates a damaging effect on the welfare of the countries, as they are the leading financial intermediaries transferring funds among savers and borrowers. The banking literature extensively documents their role in economic development (Levine and Zervos 1998; Beck and Levine 2004). Moreover, bank failures create costs for the taxpayers and cause moral hazard problems among the public (mainly the depositors) and the risk-averse banks. As such, it exacerbates intermediation problems by discouraging savings behaviour and encouraging risk-taking by banks. From this aspect, the banks' safety/soundness/risk is equivalent to the sustainability concept and is correlated with the diverse literature on the corporate social responsibility (Albuquerque et al., 2019; Chollet and Sandwidi, 2018; Di Tommaso and Thornton, 2020; Ben Abdallah et al., 2020; Neitzert and Petras, 2021). According to Chollet and Sandwidi (2018) and Nofsinger et al. (2019), environment, social, and governance scores (ESG) can be used to assess firms' CSR performance. Due to their distinct financial structure (in which the third parties, mainly depositors, provide 80-90% of the funds) and opaqueness in financial transactions, the importance of CSR's role in the banking firm has increase. This

thesis attempts to analyse and diagnose the role of CSR in bank risk management and valuation for the leading Eurozone countries' banks and United States (US) banks by operationalizing the CSR scores and various bank risk measures from 2002 to 2019.

Although the existing literature documents many studies on corporate social responsibility, it is still unclear why banks focus extensively on CSR engagement and invest on CSR projects. Traditionally, banks were not accepted as CSR-related companies compared to industries that directly impact the environment, such as construction, mining, chemical, and petroleum. However, KPMG's research showed that banks disclose CSR information within their annual reports more than any other sector (KPMG, 2016). Furthermore, recent studies argue that environmental and social aspects could be a valuable catalyst for financial institutions to regain the reputation and trust of stakeholders lost during the 2007–2009 GFC (Letner, 2016). This attribute makes CSR a critical communication tool for banks to minimize information asymmetries with their stakeholders.

Extensive research has been conducted to understand the effect of CSR on the short-term financial performance of companies. Nevertheless, contradictory findings could not reach a definitive conclusion about the impact of the CSR on the financial performance of firms assessed by accounting or market-based measures. A meta-analysis conducted on 85 studies over 20 years concluded that socially responsible investment with ethical concerns regarding stock market portfolio management does not create any advantages or disadvantages according to the stock market's performance (Revelli and Viviani, 2015). Another literature analysis of over 167 studies investigating accounting performance measures found a positive but

considerably small relationship between corporate social performance and financial performance (Margolis et al., 2007). Therefore, further research is needed to understand the motives behind costly CSR projects financed by the companies. The majority of the studies perceived CSR to be an investment and tried to reveal the short-term financial effects for the companies. However, CSR is an essential component of stakeholder engagement which improves the reputation of banks and is used as a risk management tool (Venturelli et al., 2018). CSR assures stakeholder satisfaction and minimizes the firm-specific risk rather than the short-term profit maximization. CSR assures a healthy relationship with major stakeholders and reduce the risk of negative externalities. Benabou and Tirole (2010), perceive CSR as an strategic approach where companies gain an competitive advantage while considering the wellbeing of the society. For banks, while CSR create a protection against stakeholder crisis, it could also have value adding impact.

CSR is also an essential communication tool with stakeholders because it legitimates and promotes socially responsible actions. Therefore, it positively contributes to the bank's reputation and the trust of stakeholders. An enhanced reputation and greater trust of stakeholders directly affect the value and firm-specific/idiosyncratic risks for banks (Luo and Bhattacharya, 2009).

This thesis will contribute to the banking and CSR literature from multiple unique aspects. First, even though the relationship between CSR and firm-specific risks has been investigated extensively by the previous literature, only a few research studies focus on banks (e.g., Di Tommaso and Thornton, 2020; Ben Abdallah et al., 2020; Neitzert and Petras, 2021; Gangi et al., 2019; Gambetta et al., 2017). Nonetheless, these research studies mostly used accounting based-risk measures as a proxy for

firm-specific risks. However, we argue that market-based risk measures are more relevant, as they show the effect of CSR scores on the idiosyncratic risk through stakeholders' reactions within the market. Therefore, the first contribution of this research is the use of a market-based risk measure that is not used in the previous bank CSR studies, namely idiosyncratic risk volatility. Secondly this research considers the effect of CSR on bank value and shows the effect of sustainable banking practices on banks risk taking and valuation together. Tobin's Q is used as a value indicator which shows the long term expected value by the market rather than using accounting based value measures such as return on assets. Thirdly, in contrast to previous studies, which have used conditional mean methodologies such as ordinary least square (OLS) and ignored the effect of CSR on different risk levels/groups, we employ a quantile regression. Notably, we use a newly developed approach by Machado and Silva (2019) that is useful for panel data with individual effects and endogenous explanatory variables, as found in our data. We think this methodological approach will provide more substantive findings, as the effect of CSR can be different for various risk and value levels. Lastly, the results of Eurozone and US banks are compared in order to present regional and regulatory differences between perceptions of stakeholders and effect over risk structure and valuation of banks.

Our results suggest that improvements in the CSR lower idiosyncratic bank risk significantly for the medium to high-risk category Eurozone and US banks. This shows that CSR's contribution to bank stability, and therefore sustainability, increases with the reduction of bank's riskiness both for Eurozone and US banks. Findings support the view of the legitimacy and stakeholder theory which perceive

CSR as a necessary condition for the healthy functioning of firms. The negative relationship between IR and CSR is greater for Eurozone banks compared to the US banks which show, the increased importance given by European stakeholders over CSR projects. However, a negative relationship between bank value and CSR is also evident which shows a trade-off between value decreasing and risk mitigation effect of CSR. This finding aligns with the view of neo-classical and agency theory where CSR is classified as an unnecessary overinvestment. The Eurozone and US banks should not overinvest in CSR activities as that could decrease their value. Concerning the CSR pillars' (environmental, social, and governance), results showed that the governance and environmental dimensions have the highest negative impact on the idiosyncratic risk for medium to high-risk level Eurozone banks. Similar to the overall CSR results, as the riskiness of a bank increases, the negative effect increases for the governance and environmental dimensions. For US banks, the environmental dimension is more important compared to the other dimensions and negative relationship with IR increases as the riskiness of banks increase. No significant relationship was identified between the social dimension and firm-specific risk.

The thesis is organized as follows: The following chapter reviews the relevant literature on the theoretical perspective of CSR and idiosyncratic risk volatility, and based on this review develops hypotheses. The third chapter explains the methodology, model, and data used for the study. Finally, the fourth chapter presents the findings, the fifth chapter is for the discussion and the study concludes with the sixth chapter.

Chapter 2

LITERATURE REVIEW

2.1 Definition and Need for CSR

The CSR become an important concept for companies over all sectors where considerable amount is invested on. The introduction of CSR concept was during mid twentieth century and it is introduced by Bowen (1953) who argues that businessman has a social and ethical responsibility to act within norms, values and benefit of the whole society. Similarly McGuire (1963) enlarged the concept and argued that companies who are corporate citizens have responsibilities beyond legal obligations which are to contribute to the employee and society welfare. Davis (1960) was one of the early scholars arguing that CSR is a complex phenomenon which being a good citizen could have a long-term value creation for firms. Fitch (1976) argues that companies have a responsibility to solve social problems that could arise as a result of companies' activities. Carroll (1991) described the responsibilities of corporations in four main categories which are economic, legal, ethical and philanthropic responsibilities. As it is shown in figure 1 below economic responsibilities form the bottom of the pyramid indicating that the main goal of the companies are to generate profits. The second important responsibility of the companies is to follow the laws within the legal system. However, Carroll (1991) argues that other than economic and legal responsibilities companies have ethical and philanthropic responsibilities which cannot be avoided. Later on, Schwartz and Carroll (2003) argue that the pyramid model developed previously should be

improved and reduced the responsibilities of the companies from four to three main categories (three domain model). The economic and legal responsibilities are crucial for the companies as they are ‘required objectives’ by the society. Ethical and philanthropic categories are merged as they are both ‘expected’ by the society

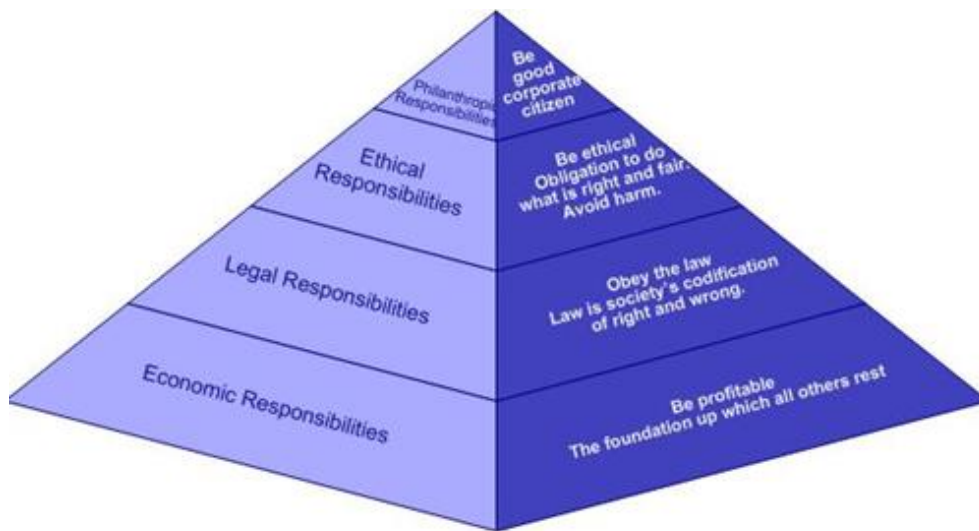


Figure 1: Carroll's Pyramid from Carroll (1991)

Matten and Moon (2008) defined CSR as an umbrella term considering the relationship between corporations and the society. The European Commission (2011) defined CSR as a strategic approach which integrates social, ethical and environmental concepts within their interactions with the stakeholders on a voluntarily basis. However, ethical beliefs depend on culture, economic and political environment of society which could differ on country or time basis. Due to this reason it is not possible to have a unified definition or a global standard for CSR.

2.2 CSR Disclosure in US and Eurozone Countries

Geographical diversification leads to different social, cultural and regulatory environment for firms which affect the shareholder demands over CSR disclosure (Brammer et al., 2006). Political system is another important factor affecting the

CSR disclosure of companies. Matten and Moon (2008) argues that European governments have a greater control over economic and social activities while US have a more voluntarily system. Similarly Mele (2008) defines this as European countries have a stakeholder oriented CSR approach while the voluntarily disclosure preference of Anglo-Saxon countries, including the US is defined as a conservative approach. Therefore the Eurozone banks have more guidelines and mandatory disclosure requirements. A comparative study of US, European and Asia-Pacific companies revealed that European companies have the highest CSR score, followed by the US with second highest score in which higher disclosure requirement of European countries could explain this finding (Weber et al., 2014). It is argued that higher disclosure scores of European companies are reflection of strong tradition over CSR disclosure and higher stakeholder pressure over CSR investments (Gallego-Alvarez et al., 2017).

The CSR evolved as a voluntarily concept initially however, with increased awareness of society over CSR related issues, recently some regulatory bodies publishing mandatory and voluntarily guidelines in order to increase comparability and consistency of CSR information's disclosed. According to a directive of European Union in 2014 (directive 2014/95/EU) public companies including banks which have more than 500 employees should disclose CSR information over environmental matters, social matters and employee conditions, anti-corruption and governance related information such as diversity of boards. Later on European Commission published a voluntarily guideline for companies to environmental and social information disclosure in 2017 and a guideline on reporting climate-change information in 2019. Lastly in 2021 European Commission announced that CSR

reporting will be mandatory and audit of reported information is needed for all large companies and publicly listed companies. Within the report it is stated that Europe targets to become leader in setting standards for sustainable finance and aims to be first climate-neutral continent by 2050 which reflects the increasing demand and pressure of European community over CSR. In 2022 European Central Bank (ECB) started to integrate climate change and environmental risks within stress tests of banks. The results of first climate risk stress test shows that 41.35% of banks have integrated climate risk stress test within their framework from the first year and this is expected to increase gradually in coming years (ECB 2022). Different than European system, the CSR disclosure is still a voluntarily concept for US banks. However, in 2022 Federal Deposit Insurance Corporation announced draft principles for large financial institutions having more than \$100 billion total consolidated assets should consider climate-related financial risks within their framework. This shows that recently US regulators started to consider CSR related risks as a significant risk threatening financial stability, safe and sound banking.

2.3 Theoretical Perspective on CSR

Researchers can use various theories to establish the relationship between CSR performance and the bank value/risk. Theoretical perspective on the CSR literature can be divided into two main categories where one side of the debate is the neo-classical theory proposed by Milton Friedman. Friedman (1970) argues that sole objective for businesses are to generate profit and maximise the shareholder value through legal activities. Sometimes this theory is called ‘shareholder value oriented’ as it aims to maximise the value for shareholders. Being a profitable company will assist the economic development of the whole society and social responsibility of companies is to increase its profits. Profitable companies paying taxes to the

governments that will be used for the benefit of whole society. This view supports that CSR activities do not create any shareholder value and undertaking this unnecessary activity could even reduce the shareholder value (McWilliams and Siegel, 2000). CSR expenditure could create a conflict of interest between shareholders and managers (Li et al., 2016). Agency theory shares a similar perspective with neo-classical theory and views CSR as an over-investment which could harm the firm value (Barnea and Rubin 2010). Agency theory argues that managers promote CSR activities for their own interest and use it as a cover for under-performance or to increase the reputation of the legal entity or reputation of management without bearing the cost of the expenditure. Fama and Jensen (1983) showed that independent directors focus more on their reputation in which CSR is an reputation enhancing investment. The governance mechanism should minimise or prohibit the over-investment on socially responsible projects in order to protect the shareholders (Jensen 2010). This creates a moral hazard between managers and shareholders of companies. The view of agency theory aligns with neo-classical theory arguing that managers are the agents (employees) of the shareholders whose duty is to assure profitability of the company. Sheehy (2015) argues that political philosophy have an important role on CSR theories such as, neo-classical and agency theories have a conservative approach which perceives CSR as an unnecessary activity promoting public social rights over private property rights. In contrast, legitimacy and stakeholder theory have a perspective that companies should contribute to society in exchange of private property and commercial rights secured by the government.

Legitimacy theory states that companies' have a social contract with the society and activities should be in parallel with society's beliefs, norms, values, and expectations (Suchman, 1995). Deegan et al. (2000) argue that legitimacy is crucial in order to assure long term existence of corporation, firms failing to assess needs of the society could not survive in the long run. Companies should consider interest of the whole society in order to assure the legitimacy of their actions. Moreover, Farache and Perks (2010) stated that legitimation strategies should be implemented by companies to avoid legitimacy crises such as serious accidents, pollution leaks, or financial scandals. As such, social capital could be an essential tool to legitimate the actions and profits of the companies (Adler and Kwon, 2002). Gray et al., (2009) argue that companies disclose only positive CSR information in order to create social capital and assure legitimacy of their actions. Another theory that links CSR strategies to the companies' performance is the "stakeholder theory" (Freeman, 1984; Donaldson and Preston, 1995). This theory argues that companies should consider the interest of all stakeholders, rather than stockholders, since this strategy contributes to long-term value maximization. The stakeholder group includes shareholders, employees, consumers, public organizations, and government, representing all social groups within the community who have a direct or indirect relation with the company (Donaldson and Preston, 1995). Clarkson (1995) argues that companies should create value for all stakeholders and classified stakeholders as primary and secondary. The primary stakeholders have a direct impact on existence of companies, market and the laws imposed by them should be obeyed. Failing to address the demands of primary stakeholders could significantly damage or stop the activity of the companies. Secondary stakeholders are not essential for survival of the companies but dissatisfying them could harm the company. The media or non-profit organisations

fall within this category and do not have a direct relationship with company but they have a capacity to positively or negatively influence the public opinion over the company. According to Freeman (1984), considering the interest of all stakeholders assures long-term value gain for the company and ignoring key stakeholders will diminish its value. CSR will enhance the loyalty and trust of stakeholders which create a competitive advantage for companies. CSR has a complex structure which could vary according to cultural, economic and political environment. It could be better to analyse CSR on a multi theoretical perspective. “Legitimacy” and “stakeholder” theories have similar attitudes towards CSR which could be considered as complementarily as they focus on stakeholder satisfaction (Fernando and Lawrence, 2014).

Moreover, CSR activities contribute to the reputation of companies by creating moral capital that generates a flow of resources in many forms such as financial, human, and technological (Doh et al., 2010). CSR could be classified as an intangible asset which could have potential tangible benefits (Little and Little, 2000). Stakeholder theory is not purely ethical, but it is also a managerial theory which has potential value enhancing benefits for firms. Cheung et al (2018) showed that CSR is an important stakeholder management tool and reduces bank loan costs more in stakeholder oriented-countries. Increased attention over sustainability concept for banks perceived CSR as a tool to increase reputation, trust and credibility (Chiaramonte, 2021). CSR minimises information asymmetries as banks disclose more non-financial information and minimises the information risk with stakeholders (Dhaliwal et al., 2012; Bharath et al., 2008). Choi and Wang (2009) argue that CSR minimises default risk of companies as CSR increases competitive advantage by

improving stakeholder engagement. Since banks have many stakeholder groups, such as depositors, borrowers, stockholders, and government/public, and are also among the most heavily regulated firms CSR is an important tool for stakeholder management. Recently increasing guidance and disclosure requirements show that stakeholders have increasing demand for CSR projects. CSR is an important tool for legitimizing the actions of banks, stakeholder relationship management and minimise the idiosyncratic risk of banks. These theories provide the theoretical basis for CSR studies in banking.

2.4 Idiosyncratic Bank Risk and CSR

Idiosyncratic volatility represents the gap between a market portfolio and individual stock fluctuations and this measures the idiosyncratic bank risk. A company's stock volatility is determined by the systematic risk and the unsystematic/idiosyncratic/firm-specific risk. The systematic risk depends on the market portfolio, while the idiosyncratic risk represents the portion of the market portfolio that cannot be explained by the firm's actions. Numerous studies have found that the idiosyncratic risk of the firms represents the majority of the total stock price variance compared to systematic risk such as (Gaspar and Massa 2006; Goyal and Santa-Clara 2003). Idiosyncratic risk mainly depends on firm-specific factors. Nevertheless, it is argued that idiosyncratic volatility is not important, as diversification in efficient markets can eliminate this. However, it is evident that markets are not perfectly efficient due to transaction costs, agency problems, and informational problems (asymmetric information). Therefore, market inefficiencies increase the importance of idiosyncratic risk (Brown and Kapadia 2007).

An analysis on CSR performance of firms showed that positive CSR reduces idiosyncratic risks, while negative CSR has a risk-increasing effect (Mishra and Modi, 2013). Previous research on controversial industries, including alcohol, tobacco, gambling, and others, found that CSR, based on ESG scores, is not a window-dressing activity, as it significantly reduces the idiosyncratic risk (Jo and Na 2012). Chen et al. (2018) analysed the idiosyncratic risk reduction effect of CSR on different market states concluded that CSR is a significant risk management tool both in up and down-trending market states. Similarly, Luo and Bhattacharya (2009) showed that the corporate social performance has a negative relationship with the idiosyncratic risk of firms by enhancing better communication with their stakeholders. Increased attention of the stakeholders in the CSR performances of banks is evident, and the adoption of CSR practices has been shown to secure the reputation of banks by minimizing the possibility of sanctions (Mure et al., 2021). CSR could be a risk-mitigation tool, especially during periods of financial distress by signalling prudent banking activities, enhancing reputation, and ensuring good relations with the community (Chiaramonte et al., 2021). These findings suggest that CSR should be considered an effective risk-reducing tool, as it minimizes the idiosyncratic risk through communication with the stakeholders.

Concerning the banking industry, previous research has uncovered the significance of the idiosyncratic risk for banks (Stiroh, 2006; Baele et al., 2007; Haq and Heaney, 2012; Bessler et al., 2015). On the other hand, the risk-related literature generally overlooks idiosyncratic risk, as it can be eliminated by diversification. Nonetheless, the failure of one bank can affect the whole banking industry through the contagion effect (Bessler et al., 2015). Moreover, deposits, insurance, and too-big-to-fail

guarantee schemes encourage banks to increase risk and underestimate risk diversification in a lax regulatory environment. Therefore, monitoring the idiosyncratic risk is more critical for banks than other firms. Previous literature has stated that the idiosyncratic risk of banks is related to the business model, risk culture, and bank-specific factors (Fahlenbrach et al., 2012). Furthermore, the above studies generally report a negative relationship between a bank's size and its idiosyncratic risk, as a larger size allows banks to better diversify firm-specific risks. Therefore, we think the diversifiable character of the idiosyncratic risk makes it more critical for the banks than the CSR concern, since banks can follow the diversification process independently and use CSR principles (dimensions) as a risk management tool.

Previous literature does not investigate the relationship between CSR and idiosyncratic risk for banks. The CSR is an important tool for banks which could contribute to stakeholder relationship and as banks have multiple groups of stakeholders stakeholder management becomes more important. The first two stakeholder groups, depositors and borrowers, are the products of the financial intermediary role of the banks. The third one is the regulators. Due to their policy role, deposit insurance, too-big-to-fail guarantee schemes, and the liability structure, banks are closely regulated by different regulatory authorities. They also offer investment products to investors who represent the fourth group. The fifth one is the shareholders, who are the owners. As such, the banks' CSR policies should directly affect the groups mentioned above. Nonetheless, these would have indirect implications for the other public groups as well. For example, taxpayers who do not have a direct relationship with a bank can be affected by a bank's failure, or a

villager can be negatively affected by a bank-given loan that destroys the environment. As such, we believe that CSR policies should be a significant concern of the banks. The report published by the Canadian Credit Union Association asserts that the senior managers of eight credit unions perceived socially responsible behaviour as an important risk management tool for their institutions (Strandberg 2016).

The role of the CSR arising from the idiosyncratic risk concern is vital for the bank's stakeholders described above. As the literature asserts, bank stakeholders, such as depositors, borrowers, investors, regulators, and managers, are directly affected by the idiosyncratic risk; therefore, they care about it (e.g., Stiroh, 2006; Baele et al., 2007; Haq and Heaney 2012; Bessler et al., 2015). As beneficiary groups, depositors, borrowers, and investors care about the idiosyncratic risk for sustainable banking services. In addition, by nature, shareholders are the owners; hence, the idiosyncratic risk is crucial for them as it affects profitability and the share price. For regulators, the safety and stability of the banks in the banking system make the idiosyncratic risk a significant risk concern. These imply that banks need to inform stakeholders about their actions more than other sectors (Wu and Shen 2013). As such, CSR can impact key firm-specific risks for banks.

In the light of legitimacy and stakeholder theories, and the above arguments, we conclude that CSR is necessary to have a stable relationship with stakeholders and protect companies from random shocks arising from idiosyncratic risk sources. CSR can help banks minimize their key firm-specific risks related to stakeholders. Increased communication with key stakeholders through the promotion of socially responsible actions minimizes the idiosyncratic risks. Nonetheless, CSR is not

considered as a tool to mitigate risk by traditional risk models, such as CAPM or Fama–French, and is inadequately included within firm-specific risk (Benlemlih and Potin 2017). Accordingly, as stated in Hypothesis 1 (H1), a negative relationship is predicted between CSR and idiosyncratic volatility by minimizing the idiosyncratic risks of banks.

Hypothesis 1 (H1). CSR and idiosyncratic risk have a negative relationship in Eurozone and US banks.

2.5 Bank Value and CSR

The majority of the previous literature focused on the effect of CSR on firm value or financial performance. However, only a few studies specifically have focused on banks. Contradictory results exist within the literature investigating the moderating role of CSR on financial performance/value of corporations. Albuquerque et al. (2019) investigated US companies from multiple industries and concluded that CSR lowers the systematic risk of companies and increases the value of companies. Galema et al. (2008) found a positive relationship between stock performance measured by book to market ratio and CSR. An analysis of US firms argue that CSR assures minimum deviation from optimal risk levels and enhances the firm value (measured by Tobin's Q) by balancing the risk taking activities of firms (Harjoto and Laksmana, 2018). Similarly, an analysis specifically focusing on US banks concluded that banks with higher CSR scores are subject to lower default risk and higher financial performance (Bolton, 2013). Previous research on Indonesian banks found no significant relationship between CSR disclosure and firm value (Willim et al., 2020). Di Tommaso and Thornton (2020) conducted research on European banks and found that CSR has a negative effect on bank value while it has a risk reduction

effect. They argue that engaging CSR activities creates a trade-off between banks having lower risk and lower value. Cahan et al (2016) argues that Tobin's Q value captures the riskiness of possible future cash flows where CSR reduces the riskiness of companies, this will also generate value for them. Even though this thesis mainly focuses on the relationship between CSR and firm-specific risks, studying the effect of CSR on bank value is also important in order to fully understand the potential effect of CSR on banks financial performance.

The neo-classical and agency theories argue that CSR is an unnecessary activity which creates no value for shareholders of the company (Abdallah et al., 2020). Over-investment on CSR issues could damage the financial performance of firms (Nidumolu et al., 2009). CSR activities create a conflict of interest between shareholders and managers who want to promote the reputation of the legal entity. In contrast stakeholder and legitimacy theory argues that CSR is an important concept in order to minimise information asymmetries with key stakeholders (Giannarakis et al., 2018; Bharath et al., 2008). Satisfying the key stakeholders is a necessity for the long term value-creation of the companies. CSR is a tool to earn the trust and loyalty of stakeholders which creates a unique competitive advantage and have a positive effect on financial performance of companies (Melo and Garrido 2012). Accordingly, as stakeholder and legitimacy theory predicts a positive relationship is expected between CSR and firm value by assuring a stable relationship with key stakeholders.

Hypothesis 2 (H2). CSR and firm value have a positive relationship in Eurozone and US banks.

2.6 CSR Dimensions and Idiosyncratic Risk

Though the general CSR measure provides guidance, identifying the effect of specific CSR dimensions on idiosyncratic risk is more important. Generally, this is done by adapting the banks' ESG scores as a proxy for CSR. Following this approach, we also analyse ESG dimensions separately which represents different CSR dimensions in our analyses. Therefore, our study will reveal the effectiveness of these dimensions and create better guidance for banks. Previous researchers found that environmental, social, and governance dimensions could interact differently with firm-specific risks since stakeholders are not homogenous and are affected differently by individual CSR dimensions (Bouslah et al., 2013; Chollet and Sandwidi, 2018; Neitzert and Petras, 2021).

Environmental responsibility includes environment friendly product innovation, minimising the carbon emissions and resource use to combat with global warming. Environmental responsibility leads to energy and resource-saving as it aims to minimize the carbon footprint of banks. Environmental responsibility could increase the operational efficiency of banks as energy and resource consumption is monitored. Additionally, increasing stakeholders' awareness of environmental manners creates an enhanced reputation and risk reduction effect for environmentally responsible companies. Promoting environment friendly actions establishes a communication channel with stakeholders minimizing the information asymmetries (Giannarakis et al. 2018). Moreover, environmental disasters potentially affect bank risks such as operational, liquidity and credit risks. Bank of England (2018) argues that climate change could increase energy and water prices, severe weather events could increase insurance costs and threatens the business continuity and considered as operational

risk. As such, a number of regulatory bodies advise banks to care about the environmental risk, such as (Equator Principles 2020; BaFIN 2021; EBA 2021). Due to the increased awareness of community on environmental issues and global warming threat, the Eurozone and US regulators announced that recent bank stress tests will include environmental risks. Stakeholder theory argues that actions of the institutions must align with the expectations of the whole society. Research on banks that solely focuses on the environmental dimension found an inverse relationship between environmental CSR performance and firm-specific risk (Neitzert and Petras 2021; Di Tommaso and Thronton 2020). It has been argued that the main reasoning behind this is that environmental engagement enhances the reputation of banks and legitimizes the banks' actions by improving their social images (Gangi et al., 2019). Enhanced reputation and protection from adverse consequences legitimize the actions of banks and increase the loyalty of stakeholders. As such, H3 predicts a negative relationship between environmental dimension and idiosyncratic risk by satisfying the concerns of environment friendly stakeholders.

Hypothesis 3 (H3): Environmental dimension of CSR and idiosyncratic risk have a negative relationship in Eurozone and US banks.

The social aspect of CSR has a direct impact on reputation, and banks can use it as a communication tool with various stakeholders. The social element assures product responsibility, positive community commitment, respecting fundamental human rights and good employee relations. Socially responsible activities could minimize idiosyncratic risk for banks by considering the interests of various stakeholders. Higher social performance signals improved social capital and increases reputation with stakeholders (Bouslah et al., 2013). Reputation is crucial for healthy functioning

banks due to trust relationships with the depositors, investors, and borrowers. Employee strikes, boycotts, and lawsuits could damage the reputation of banks within the community. Therefore, employee relations form an essential part of the social dimension, and previous research concluded that good employment practices and policies minimize firm-specific risks (Bauer et al., 2009). A study on international companies found that the social dimension has a risk reducing effect on the financial risk of companies (Chollet and Sandwidi, 2018). In line with this finding, Di Tommaso and Thronton (2020) also uncover a risk reducing effect of the social dimension for the banks. On the other hand, Neitzert and Petras (2021) assert ambiguous influence for this dimension. Positive social performance will legitimize the actions of banks and increases stakeholder trust, employee loyalty which contributes to stakeholder relationship management. As such, H4 predicts a negative relationship between the social dimension and idiosyncratic risks.

Hypothesis 4 (H4): Social dimension of CSR and idiosyncratic risk have a negative relationship in Eurozone and US banks.

Governance represents framework of rules, policies and practices over the control system of the companies. Following best practice of governance includes effective management and enhanced decision-making. Governance assures equal treatment of shareholders, shareholder rights and CSR strategies which affect banks from multidimensional factors. Therefore, good governance directly affects the above mentioned stakeholder groups. The stakeholders who transact with the bank need to be assured that the institution is governed properly. Huse (2005) argue that governance should assure responsible behaviour over stakeholders. Governance is another dimension of CSR which is related to idiosyncratic risk. Previous research

showed that ownership structure of banks affect the riskiness of banks, with high ownership concentration increasing the incentive of risk taking, while non-shareholding managers tend to decrease risk taking (Laeven and Levine 2008). Good governance assures risk management and increases the trust of stakeholders towards the bank. As stakeholder theory predicts, promoting the governance quality of the bank creates better communication channels with stakeholders and minimizes the information asymmetries. Therefore, good governance positively commits banks' reputation, contributes to bank-stakeholder relationships, and reduces idiosyncratic risk. In line with the above views, Chollet and Sandwidi (2018) argued that the governance dimension could have a stronger negative relationship with firm risks as they are more relevant and visible to investors compared to the other dimensions. Concerning banking, previous research's found a risk-reducing effect of corporate governance for banks in common law countries (Benlemlih and Girerd-Potin 2017) and European countries (Di Tommaso and Thornton 2020). On the other hand, Neitzert and Petras (2021) find mixed results for a sample of worldwide banks. As we have put forward many positive implications of the governance on idiosyncratic risk, we expect a negative relationship between the governance dimension and idiosyncratic risk in Hypothesis 5.

Hypothesis 5 (H5): The governance dimension of CSR and idiosyncratic risk have a negative relationship in Eurozone and US banks.

Chapter 3

DATA AND METHODOLOGY

3.1 Data

The ESG data is obtained from the Thomson Reuters Eikon ESG Database. Thomson Reuters is a leading agency that provides financial data and is used intensively by investors. The database uses algorithmic and human processes in tandem with over 400 ESG metrics while determining the score of companies. In addition, the database includes negative media stories, which are captured as ESG controversies and deducted from the overall ESG scores. This eliminates the bias of relying solely on company-provided sources, which is the method of some previous studies that used content analysis to determine the CSR scores of companies. The database uses separate performance indicators and provides scores for environmental, social, and governance pillars. The main categories of environmental pillars are resource use, emissions, and innovations. The main categories of social pillars are workforce, human rights, community, and product responsibility. The governance categories include management quality, shareholder protection, and CSR strategy. Unfortunately, the ESG scores are time constrained for the research, and it is only available from 2002 to 2019. The sample for US banks consist of 35 banks and the final sample size is 498. The sample includes 31 Eurozone banks with a sample size of 471 from the leading Eurozone countries from 2002 to 2019, and country distribution is illustrated in Table 1 below. Eurozone countries have been chosen due to reason that they share the same economic and regulatory environment, as well as

common monetary policy under the regulatory council of the European Central Bank. Any bank with missing data for a particular year has been removed from the analysis, and the final sample size is 471 firm-year observations.

Table 1: Distribution of Banks by Country for Eurozone Banks

Country	Number	Percentage
Austria	2	6.45
Belgium	1	3.23
France	4	12.90
Germany	1	3.23
Greece	3	9.68
Ireland	3	9.68
Italy	9	29.03
Netherlands	1	3.23
Portugal	1	3.23
Spain	6	19.35
Total	31	100

Financial and accounting data for banks were obtained from the Thomson Reuters Eikon database. The bank value is determined by the Tobin's Q ratio which is used by the many studies in order to determine the value of bank (Harjoto and Laksmana 2018; Di Tommaso and Thronton 2020; Bolton 2013). The data includes daily stock prices, dividend yield, provision for loan loss, operating profit margin, total loans, return on equity (ROE), capital adequacy, liquidity, and market-to-book ratio. The Institutional Brokers' Estimate System (I/B/E/S) estimate is used to obtain the 12-month forward earnings per share. For country-specific variable, inflation is obtained from the World Bank. The detailed variable descriptions are presented in Appendix A, Table A1. Summary statistics for the collected data are presented in Table 2 and Table 3 below. The descriptive statistics shows considerable difference between mean value of firm-specific risks of Eurozone and US. The Eurozone banks have higher idiosyncratic risks compared to US banks. Additionally overall CSR,

environmental, social and governance performance of Eurozone banks are higher compared to US banks when the mean values are considered.

Table 2: Descriptive Statistics for Eurozone Banks

Variable	Mean	Median	Maximum	Minimum	Std. Dev.
Dependent Variable					
Idiosyncratic Risk	0.533878	0.363764	4.175236	-1.529179	1.076037
Independent Variable					
ESG	0.572691	0.6078	0.9501	0.0791	0.213987
Environment	0.538681	0.63955	0.9744	0	0.336896
Social	0.590842	0.6307	0.9732	0.0657	0.224753
Governance	0.561912	0.58	0.9599	0.0597	0.240326
Dividend Yield	0.033309	0.02605	0.6845	0	0.054551
Provision For Loan Loss	0.009559	0.006297	0.117215	-0.01277	0.011951
Operating Profit Margin	0.046993	0.10085	0.5226	-2.0111	0.250602
Total Loans (ln)	18.57284	18.4779	20.68213	16.04809	1.095184
Return on Equity	-0.09715	0.06515	0.9814	-42.9847	2.125264
Inflation	0.015652	0.01539	0.048971	-0.044781	0.013377
IBES 12 Month Forward EPS	2722.307	1.067	323418.6	-44314.02	23956.89
Capital Adequacy	0.135079	0.135	0.2206	-0.061	0.032291
Liquidity	0.970924	0.5906	11.5126	0.0814	1.27492
Market to Book Ratio	1.058286	0.87	5.86	-2.58	0.824165
Tobin's Q	0.388	0.382	1.001	0.08	0.15483

Table 3: Descriptive Statistics for US Banks

Variable	Mean	Median	Maximum	Minimum	Std. Dev.
Dependent Variable					
Idiosyncratic Risk	-0.21433	-0.26623	1.830059	-1.86421	0.592541
Independent Variable					
ESG	0.432679	0.4059	0.8919	0.0548	0.185966
Environment	0.346483	0.2363	0.9504	0	0.262908
Social	0.450818	0.4315	0.9096	0.0599	0.190363
Governance	0.506329	0.5081	0.9397	0.0456	0.231647
Dividend Yield	0.027379	0.0247	0.1462	0	0.017821
Provision For Loan Loss	0.01007	0.00369	0.84167	-0.00218	0.039323
Operating Profit Margin	0.248866	0.2794	0.5421	-0.8755	0.143988
Total Loans (ln)	17.69134	17.52525	20.70655	12.86525	1.410502
Return on Equity	0.095309	0.1015	0.3459	-0.74	0.096294
Inflation	0.019401	0.020693	0.038391	-0.00356	0.010683
IBES 12 Month Forward EPS	4.170705	2.553	59.651	-9.01	7.310014
Capital Adequacy	0.148339	0.1417	0.4289	0.1012	0.038013
Liquidity	0.464326	0.3688	1.5393	0.0848	0.273176
Market to Book Ratio	1.492265	1.38	3.69	0.1	0.62583
Tobin's Q	0.320305	0.302	0.694	0.123	0.10763

3.2 Idiosyncratic Risk Measure

The idiosyncratic risk represents the difference between market portfolio and individual stock price fluctuations of the companies. The stock price fluctuations on market portfolio depend on systematic risk while idiosyncratic risk depends on firm-specific factors (Gaspar and Massa, 2006). Carhart four-factor model is used in order to determine price fluctuations that could not be explained by change in the market portfolio. The idiosyncratic risk is measured by the standard deviation of residuals from daily stock returns of the Carhart four-factor model. The Carhart four-factor model stated below includes the momentum factor as an addition to Fama French three-factor model (Carhart 1997). This model is used widely by previous literature

to determine the idiosyncratic risk of companies (Mishra and Modi 2013; Luo and Bhattacharya, 2009; Bouslah et al., 2013).

$$(R_{it} - R_{ft}) = \alpha_i + \beta_{im} (R_{Mt} - R_{ft}) + \beta_{is}SMB_t + \beta_{ih}HML_t + \beta_{iu}UMD_t + \varepsilon_t \quad (1)$$

In the above model $(R_{it} - R_{ft})$ represents the excess return for a bank i on a day t . Risk free rate (R_{ft}) stands for 1 month T-bill rate and $(R_{Mt} - R_{ft})$ is the excess return of the market portfolio for Europe and market portfolio for the US. The other factors of the model are the differences between small and big stocks (SMB_t) Difference between high and low book to market ratio stocks (HML_t) and the momentum factor, (UMD_t). Data for market return and other factors are obtained from the Kenneth French data library, the European database for Eurozone banks, and US database for American banks, and daily excess returns for all banks are retrieved from Eikon database. To derive the idiosyncratic risk volatility of each bank that is represented by the standard deviation of residuals (ε_t) we run the equation (1) separately for Eurozone and US banks. Following previous research, a logarithmic transformation is applied to idiosyncratic volatility to assure homoscedasticity as shown in equation (2) (Chang and Dong 2006, Chen et al., 2018, Luo and Bhattacharya 2009.) Idiosyncratic risk for bank i in year t is represented as IR_{it} in equation (2).

$$IR_{it} = \ln\left(\frac{1 - R_{it}^2}{R_{it}^2}\right) \quad (2)$$

3.3 Methodology

The quantile regression method follows in order to investigate the relationship between the CSR performance and idiosyncratic risk. The quantile regression method is advantageous compared to conditional mean methods, as it explains the relationship between different risk levels and CSR within the sample population. The

variance inflation factor (VIF) for all variables is tested to assess possible multicollinearity problems. No multicollinearity is detected, as none of the variables have a VIF higher than 5 (see Appendix A2 and A3). The mean regression methods are sensitive to outliers, non-normal distribution, and heteroscedasticity of error terms, which could lead to misleading results. The quantile regression minimizes the sum of the absolute residuals, while mean regression methods minimize the sum of squared residuals. The quantile regression method has no sample selection bias when determining the quantiles compared to a piecewise regression (Koenker and Hallock, 2001). The quantile regression divides the sample population into different percentiles with a quantile-fitting regression. The quantile approach is defined as:

$$Y_{it} = \beta_{\theta}x_{it} + \varepsilon_{\theta it} \quad 0 < \theta < 1 \quad (3)$$

Where Y_{it} is the dependent variable for bank i at a time t and x_{it} represents the vector of explanatory variables at θ th percentile for the dependent variable. The model's error term in which conditional quantile distribution is zero, is $\varepsilon_{\theta it}$. In order to investigate the risk-reducing impact of CSR, the following quantile model is developed;

$$\begin{aligned} Q_{\theta}(IR_{it} | X_{it}) = & \delta_i + \beta_1 CSR_{it} + \beta_2 Div_{it} + \beta_3 PLLoss_{it} + \beta_4 OPM_{it} + \\ & \beta_5 Size_{it} + \beta_6 ROE_{it} + \beta_7 IBES_{it} + \beta_8 MTB_{it} + \beta_9 CapAdq_{it} + \beta_{10} LIQ_{it} + \\ & \beta_{11} INF_{it} + \varepsilon_{it} \end{aligned} \quad (4)$$

$Q_{\theta}(IR_{it} | X_{it})$ represents θ th quantile regression function, 0.05, 0.25, 0.5, 0.75, and 0.95 percentiles are assigned to θ to investigate the CSR effect to 5 different percentiles. The dependent variable is idiosyncratic volatility for bank i at a time t (IR_{it}). $\beta_1 CSR_{it}$ is assigned for overall ESG scores of bank i at a time t . Environmental, social, and governance scores are also tested separately by replacing $\beta_1 CSR_{it}$ with $\beta_1 ENV_{it}$, $\beta_1 SOC_{it}$, and $\beta_1 GOV_{it}$, respectively. The above model is

estimated by employing the Machado and Silva (2019) methodology by using the `xtqreg` command of STATA software. This method has advantages over other methods as it considers the individual effects and endogeneity, and makes calculations simpler.

Idiosyncratic bank risk (IR) is not independent of the firm-level variables representing bank characteristics. Therefore, following previous research on idiosyncratic bank risk (Stiroh, 2006; Baele et al., 2007; Bessler et al., 2015), we employ the following firm-level characteristics as control variables in our model. Dividend payments (Div) represent financial health of firms, and paying out dividends give a positive signal to the shareholders. Provision for loan loss (PLL) represents credit risk associated with the bank and assures future cash flows; therefore, it is included as a control variable. Operating profit margin (OPM) shows banks' financial efficiency and management performance and is related to idiosyncratic risk. Size is an important characteristic that could affect the IR of banks, bigger banks could manage financial risks more efficiently, and total loans are used as a proxy. Instead of total assets, total loans are used as it is assumed that total loans better represent bank related risks. Profitability is another indicator included within the model and return on equity (ROE) is used as a proxy. The market to book ratio (MTB) shows investment opportunity and is included as a control variable. The 12-month forward earnings per share rate from Institutional Brokers' Estimate System (IBES) are used to represent expected future earnings. Capital adequacy (CA) was incorporated as a proxy to capture the banks' capital risks. The liquidity ratio (LIQ) is used to capture bank liquidity risks and is included as a control

variable. Finally, inflation (INF) is used as a control variable to capture country-specific risks associated with banks.

The model investigating relationship between CSR and bank value is presented below as equation 5.

$$Q_{\theta}(Tq_{it} | X_{it}) = \delta_i + \beta_1 CSR_{it} + \beta_2 Div_{it} + \beta_3 PLLoss_{it} + \beta_4 OPM_{it} + \beta_5 Size_{it} + \beta_6 ROE_{it} + \beta_7 IBES_{it} + \beta_8 Cap Adq_{it} + \beta_9 LIQ_{it} + \beta_{10} INF_{it} + \varepsilon_{it} \quad (5)$$

$Q_{\theta}(Tq_{it} | X_{it})$ represents θ th quantile regression function, 0.05, 0.25, 0.5, 0.75, and 0.95 percentiles are assigned to θ to investigate the CSR effect to 5 different percentiles over the value of banks. Similar to previous research several control variables are included in order to capture the possible effect of bank characteristics over the value of the banks (Harjoto and Laksmana 2018; Di Tommaso and Thronton 2020; Bolton 2013). Dividend yield (Div) has a direct effect on bank valuation as it is directly paid to the shareholders which directly affect the value for banks. Provision for loan loss (PLLoss) represents credit risk for banks which could harm the future value of banks. Operating profit margin (OPM) shows profitability of banks and high OPM positively contribute to the value of firms. Size is an important indicator over value of banks. Return on equity (ROE) represents profitability which has a direct impact on long term value of banks. IBES 12 month forward (IBES), earnings per share estimate for future 12 months represents future profitability of banks within the market. Capital adequacy (Cap Adq) and liquidity risk (LIQ) are important risk determinants which has an effect on long term value of banks. Lastly inflation (INF) is included in order to represent the macroeconomic environment in which the banks operate. Equation 5 is separately conducted for Eurozone and US

banks in order to show the effect of CSR practices on bank value in two economic entities.

Chapter 4

EMPRICAL RESULTS

4.1 Eurozone Banks Results

Table 4, below, presents the results of Equation (4), in which the CSR score is the main independent variable. The results indicate a negative relationship between CSR and idiosyncratic risks for the quantiles 0.50, 0.75, and 0.95. These findings suggest that CSR has a negative relationship with idiosyncratic risk of medium/median and high risk Eurozone banks. A closer analysis of the quantile base also provides some clues regarding the effect of CSR on the different risk levels. As can be seen from the CSR coefficients, which indicate the economic significance of the CSR impact on the IR, high risk Eurozone banks earn relatively more benefits by increasing their CSR scores. In other words, better CSR practices of these banks make them more stable. For example, the negative effect of CSR on IR is nearly two times higher in a medium risk category bank (quantile 0.50) when compared with the highest risk category bank (quantile 0.95) (i.e., the coefficients are -0.879 and -1.985 , respectively). These results support H1 for medium and high risk banks, where a negative relationship is expected between the CSR scores and the idiosyncratic risks of banks. Although CSR is not statistically significant for the lowest risk group, we think this is plausible since low risk banks do not need extensive CSR activities. These findings suggest that CSR practices ensure communication with the key

stakeholders of banks, and, as the risk level of a bank increases, this information flow becomes more important.

Table 4: Quantile Regression Results of CSR on IR for Eurozone Banks

	Q(5)	Q(25)	Q(50)	Q(75)	Q(95)
Dependent Variable = IR	IR	IR	IR	IR	IR
CSR	0.00305 (0)	0.492 (1.13)	0.879* (2.37)	1.340* (2.40)	1.985* (1.99)
Dividend Yield	1.099 (1.03)	0.211 (0.33)	0.483 (0.88)	1.311 (1.60)	2.467 (1.68)
Provision For Loan Loss	5.796 (0.28)	13.97 (1.13)	20.37 (1.94)	27.99 (1.77)	38.64 (1.37)
Operating Profit Margin	0.773 (0.80)	1.097 (1.90)	1.351** (2.76)	1.653* (2.23)	2.075 (1.57)
Total Loans	0.343 (1.17)	0.519** (2.94)	0.657*** (4.37)	0.821*** (3.62)	1.051** (2.59)
ROE	0.036 (1.25)	0.0275 (1.59)	0.0209 (1.43)	0.013 (0.59)	0.002 (0.05)
Inflation	6.749 (0.99)	8.056* (1.97)	9.079** (2.61)	10.3 (1.96)	12 (1.28)
IBES 12 Month Forward EPS	4.18 x10 ⁶ (1.50)	4.83 x10 ⁶ *** (2.89)	5.33 x10 ⁶ *** (3.76)	5.94 x10 ⁶ 6** (2.76)	7x10 ⁶ (1.77)
Capital Adequacy	3.636 1.26	2.778 1.61	2.107 1.44	1.308 0.59	0.19 0.05

Liquidity	-0.0553 (-0.65)	-0.116* (-2.26)	-0.164*** (-3.74)	-0.221*** (-3.34)	-0.301* (-2.54)
Market to Book	0.128 -0.94	0.0665 -0.81	0.0186 -0.27	-0.0384 (-0.36)	-0.118 (-0.63)
<i>N</i>	471	471	471	471	471

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$,
*** $p < 0.001$

Table 5 below presents the relationship between the environmental dimension of CSR and the idiosyncratic volatility of Eurozone banks. The environmental dimension negatively correlates with the idiosyncratic risk for low- to high-risk category banks in the 0.25, 0.50, and 0.75 quantiles. It should be noted that negative relationship increases as the riskiness of banks increase. A significant negative relationship is evident between the environmental dimension's performance and the idiosyncratic bank risk. Therefore, our second hypothesis, H2, is supported, except for the lowest (quantile 0.05) and highest (quantile 0.95) risk category banks.

Table 5: Quantile Regression Results of Environmental Score on IR for Eurozone Banks

Dependent Variable = IR	Q(5) IR	Q(25) IR	Q(50) IR	Q(75) IR	Q(95) IR
Environment	-0.59 (-1.24)	-0.708* (-2.50)	-0.786*** (-3.33)	-0.900* (-2.56)	-1.033 (-1.72)
Dividend Yield	1.163 -1.07	0.158 -0.25	-0.507 (-0.93)	-1.476 (-1.84)	-2.612 (-1.90)
Provision For Loan Loss	-12.86 (-0.71)	-15.43 (-1.43)	-17.14 (-1.91)	-19.63 (-1.47)	-22.54 (-0.99)
Operating Profit Margin	-1.162 (-1.37)	-1.236* (-2.45)	-1.285** (-3.06)	-1.356* (-2.17)	-1.44 (-1.35)
Total Loans	-0.133 (-0.40)	-0.355 (-1.81)	-0.501** (-3.05)	-0.715** (-2.93)	-0.965* (-2.32)
ROE	-0.0468 (-1.77)	-0.0334* (-2.12)	-0.0244 (-1.86)	-0.0115 (-0.59)	0.00377 -0.11
Inflation	-7.818 (-1.20)	-8.738* (-2.26)	-9.349** (-2.90)	-10.24* (-2.13)	-11.28 (-1.38)
IBES 12 Month Forward EPS	-3.25x10 ⁻⁶ (-1.18)	-3.49x10 ⁻⁶ * (-2.14)	-3.65E x10 ⁻⁶ ** (-2.68)	-3.88 x10 ⁻⁶ (-1.91)	-4.15 x10 ⁻⁶ (-1.20)
Capital Adequacy	5.548 -1.87	4.224* -2.39	3.346* -2.27	2.068 -0.94	0.569 -0.15
Liquidity	-0.0519 (-0.62)	-0.107* (-2.15)	-0.144*** (-3.44)	-0.198** (-3.18)	-0.260* (-2.46)
Market to Book	0.0773 -0.56	0.0255 -0.31	-0.00875 (-0.13)	-0.0586 (-0.58)	-0.117 (-0.67)
N	471	471	471	471	471

t statistics in parentheses * p < 0.05, ** p < 0.01, *** p < 0.001

Results for the effect of the social dimension on Eurozone banks' idiosyncratic risks are presented in Table 6 below. There is no significant relationship between social dimension and IR of Eurozone banks on all quantiles. H3 is not supported for all quantile levels as no significant relationship is detected between the banks' social dimension and the idiosyncratic bank risks.

Table 6: Quantile Regression Results of Social Score on IR for Eurozone Banks

Dependent Variable = IR	Q(5) IR	Q(25) IR	Q(50) IR	Q(75) IR	Q(95) IR
Social	0.276 -0.46	-0.0783 (-0.21)	-0.345 (-1.18)	-0.693 (-1.66)	-1.105 (-1.55)
Dividend Yield	0.996 -0.9	0.139 -0.2	-0.508 (-0.93)	-1.348 (-1.74)	-2.347 (-1.78)
Provision For Loan Loss	-4.344 (-0.20)	-12.46 (-0.95)	-18.58 (-1.79)	-26.54 (-1.79)	-36 (-1.42)
Operating Profit Margin	-0.724 (-0.73)	-1.05 (-1.73)	-1.297** (-2.68)	-1.616* (-2.34)	-1.997 (-1.69)
Total Loans	-0.384 (-1.33)	-0.604*** (-3.41)	-0.769*** (-5.44)	-0.985*** (-4.89)	-1.240*** (-3.62)
ROE	-0.0324 (-1.07)	-0.0256 (-1.37)	-0.0204 (-1.38)	-0.0137 (-0.65)	-0.0058 (-0.16)
Inflation	-6.96 (-0.99)	-8.253 (-1.93)	-9.228** (-2.72)	-10.50* (-2.16)	-12 (-1.45)
IBES 12 Month Forward EPS	-3.8 x10 ⁻⁶ (-1.40)	-4.52 x10 ⁻⁶ ** (-2.71)	-5.05 x10 ⁻⁶ *** (-3.83)	-5.75 x10 ⁻⁶ ** (-3.04)	-6.59 x10 ⁻⁶ * (-2.04)
Capital Adequacy	3.475 -1.17	2.561 -1.41	1.872 -1.3	0.976 -0.47	-0.0889 (-0.03)
Liquidity	-0.063 (-0.71)	-0.121* (-2.22)	-0.164*** (-3.78)	-0.221*** (-3.56)	-0.288** (-2.73)
Market to Book	0.136 -0.98	0.0789 -0.93	0.0358 -0.53	-0.0204 (-0.21)	-0.0871 (-0.53)
N	471	471	471	471	471

t statistics in parentheses * p < 0.05, ** p < 0.01, *** p < 0.001

Table 7 below presents the results of Equation (4), in which governance is the main independent variable for Eurozone banks. Governance negatively relates to the idiosyncratic risk for medium to high-risk category banks. Similar to the overall CSR score, as the riskiness of banks increases, the negative effect of the governance dimension also increases. The risk-reducing impact is more than double for the highest risk category (quantile 0.95) compared to medium-risk category (quantile 0.50) banks, where the coefficients are -1.404 and -0.638 , accordingly. These findings show that the environment and governance dimensions are similarly crucial and negatively relate to the IR of banks for medium and high-risk banks.

Table 7: Quantile Regression Results of Governance Score on IR for Eurozone Banks

Dependent Variable = IR	Q(5) IR	Q(25) IR	Q(50) IR	Q(75) IR	Q(95) IR
Governance	-0.00772 (-0.02)	-0.357 (-1.14)	-0.638* (-2.49)	-0.959** (-2.62)	-1.404* (-2.17)
Dividend Yield	0.868 -0.81	0.105 -0.16	-0.51 (-0.96)	-1.211 (-1.59)	-2.184 (-1.62)
Provision For Loan Loss	-3.51 (-0.17)	-12.25 (-0.96)	-19.29 (-1.87)	-27.33 (-1.84)	-38.47 (-1.47)
Operating Profit Margin	-0.61 (-0.62)	-1.005 (-1.67)	-1.322** (-2.71)	-1.685* (-2.41)	-2.188 (-1.77)
Total Loans	-0.321 (-1.21)	-0.559*** (-3.44)	-0.750*** (-5.64)	-0.969*** (-5.12)	-1.273*** (-3.79)
ROE	-0.0339 (-1.16)	-0.0229 (-1.29)	-0.0141 (-0.98)	-0.0041 (-0.20)	0.00982 -0.27
Inflation	-7.745 (-1.14)	-8.174* (-1.97)	-8.520* (-2.54)	-8.915 (-1.85)	-9.463 (-1.11)

IBES 12 Month Forward EPS	-4.23 x10 ⁻⁶ (-1.45)	-5.09 x10 ⁻⁶ ** (-2.86)	-5.79 x10 ⁻⁶ *** (-4.01)	-6.59 x10 ⁻⁶ ** (-3.18)	-7.69 x10 ⁻⁶ * (-2.10)
Capital Adequacy	3.04 -1.05	2.061 -1.16	1.273 -0.89	0.374 -0.18	-0.873 (-0.24)
Liquidity	-0.0526 (-0.59)	-0.112* (-2.07)	-0.161*** (-3.63)	-0.216*** (-3.41)	-0.292** (-2.60)
Market to Book	0.132 -0.97	0.0791 -0.95	0.0369 -0.55	-0.0113 (-0.12)	-0.0781 (-0.45)
<i>N</i>	471	471	471	471	471

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Control variables show that size is the most critical factor in determining the IR of banks. Size has a negative relationship with the IR across all quantile levels, except for the lowest risk quantile, and the risk-reducing effect of size increases as the riskiness of banks increases. This result aligns with the previous literature, which argues that size is the most crucial factor for determining the IR of banks and that, as the size of the banks increases, the IR tends to decrease (Haq and Heaney 2012; Stiroh 2006). Similar to size, liquidity negatively affects banks' IR overall quantile levels, except for the lowest risk quantile, but the magnitude is considerably lower than the size. As a market estimation figure is anticipated, the IBES 12-month forward EPS expectations are also significant determinants of the IR of banks for medium- to high risk level category banks (quantile 0.25, 0.50, and 0.75).

4.2 Effect of CSR on Bank Value for Eurozone Banks

The results presented in Table 8 below shows the effect of CSR scores over the bank value of Eurozone banks. The results show a negative relationship between overall CSR scores and bank value for all quantile levels. The economic significance is similar for all quantile levels and does not change as the value of banks increase or

decrease. The results do not support Hypothesis 2 (H2) which predicts a positive relationship between CSR and bank value according to legitimacy and stakeholder theory. Neo-classical and agency theory argues that CSR do not have a value increasing effect for companies and consider CSR as an overinvestment, and in which these results support this argument.

Table 8: Quantile Regression Results of CSR for Eurozone Banks Value

	Q(5)	Q(25)	Q(50)	Q(75)	Q(95)
Dependent Variable = TQ	TQ	TQ	TQ	TQ	TQ
CSR	-0.183* (-2.27)	-0.181*** (-3.80)	-0.179*** (-4.79)	-0.177** (-3.19)	-0.175* (-1.97)
Dividend Yield	0.00513 (0.03)	0.00697 (0.06)	0.00833 (0.09)	0.0101 (0.08)	0.0118 (0.06)
Provision For Loan Loss	- 0.0000304 (-0.36)	- 0.000108* (-2.18)	- 0.000165** (-4.20)	- 0.000237** (-4.10)	- 0.000310** (-3.35)
Operating Profit Margin	-0.0142 (-0.25)	-0.0316 (-0.94)	-0.0444 (-1.68)	-0.0607 (-1.55)	-0.0771 (-1.23)
Total Loans	0.0610 (1.71)	0.0292 (1.40)	0.00565 (0.34)	-0.0241 (-0.98)	-0.0543 (-1.39)
ROE	-0.00518* (-1.98)	-0.00397* (-2.57)	-0.00307* (-2.52)	-0.00194 (-1.07)	-0.000789 (-0.27)
Inflation	1.642* (2.18)	1.368** (3.07)	1.165*** (3.32)	0.909 (1.75)	0.649 (0.78)
IBES 12 Month Forward EPS	0.0000007 50* (2.42)	0.0000004 72** (2.59)	0.0000002 66 (1.84)	5.26 x10 ⁻⁹ (0.02)	-2.59 x10 ⁻⁹ (-0.76)
Capital Adequacy	- 0.000496** (-3.28)	- 0.000469** (-5.25)	- 0.000448** (-6.38)	- 0.000423** (-4.06)	- 0.000397* (-2.37)

Liquidity	0.000268	0.000365** *	0.000437** *	0.000528** *	0.000620** *
	(1.95)	(4.50)	(6.79)	(5.55)	(4.07)

<i>N</i>	471	471	471	471	471
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t statistics in parentheses * $p < 0.05$, ** $p < 0.01$,

*** $p < 0.001$

4.3 US Banks Results

Table 9, below, presents the results of equation (4) which shows the effect of CSR on the idiosyncratic risk of US banks. Similar to the European Banks, the CSR have a negative effect on idiosyncratic risks for quantile levels of 0.50, 0.75 and 0.95. The CSR have a negative relationship with medium to high risk group of US banks and as the riskiness increases the risk reducing impact of CSR increases. The results show that negative effect of CSR is nearly 3 times more for highest risky banks (quantile 0.95) compared to medium risk banks (quantile 0.50). This means that risky banks benefit more from CSR activities and CSR is an important tool to communicate with stakeholders especially for risky banks. The results for medium to high risk category banks align with H1 which predicts a negative relationship between CSR and idiosyncratic risk. The CSR is not statistically significant for low risk group as it is expected that low-risk banks do not need practices associated with CSR.

Table 9: Quantile Regression Results of CSR on IR for US Banks

	Q(5)	Q(25)	Q(50)	Q(75)	Q(95)
Dependent Variable = IR	IR	IR	IR	IR	IR
CSR	0.466 (1.28)	-0.0492 (-0.34)	-0.379* (-2.10)	-0.711*** (-3.49)	-1.139** (-2.81)
Dividend Yield	-1.490 (-0.47)	-2.457 (-1.73)	-3.075 (-1.83)	-3.700* (-2.36)	-4.503** (-2.68)

Provision For Loan Loss	0.440 (0.16)	0.344 (0.16)	0.282 (0.07)	0.220 (0.04)	0.140 (0.09)
Operating Profit Margin	0.289 (0.67)	0.232 (1.07)	0.196 (0.45)	0.160 (0.50)	0.113 (0.36)
Total Loans	-0.0186 (-0.14)	-0.00475 (-0.11)	0.00408 (0.16)	0.0130 (0.32)	0.0245* (2.39)
ROE	-0.643 (-0.87)	-0.195 (-0.49)	0.0917 (0.19)	0.381 (0.73)	0.753 (1.57)
Inflation	-10.56** (-2.92)	-3.699* (-2.40)	0.682 (0.49)	5.105 (1.83)	10.80*** (4.00)
IBES 12 Month Forward EPS	0.00614 (0.25)	0.00354 (0.20)	0.00188 (0.21)	0.000199 (0.02)	-0.00196 (-0.20)
Capital Adequacy	0.551 (0.40)	1.138 (1.36)	1.513 (1.55)	1.892* (1.97)	2.379* (2.55)
Liquidity	-0.721* (-2.56)	-0.162 (-0.83)	0.195 (0.70)	0.556 (1.57)	1.020*** (4.20)
Market to Book	0.118 (1.27)	0.141* (2.47)	0.155*** (3.49)	0.170 (1.89)	0.188** (2.66)
<i>N</i>	498	498	498	498	498

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$,
*** $p < 0.001$

Table 10 below presents the results of equation (4) which shows the effect of environmental score on the idiosyncratic risks of US banks. The environmental score has a negative relationship with all quantiles except the lowest risk category quantile (quantile 0.05). The negative relationship between environmental dimension and IR increases as the riskiness of banks increase. The negative effect of

environment is nearly two times higher for very high risk category bank (quantile 0.95) compared to the low risk category bank (quantile 0.25). This shows that environmental disclosure is more important for high risk category banks. Paralle with our expectations, the H2 is supported for all quantile's except the lowest quantile which predicts an adverse relationship between environmental dimension performance of banks and idiosyncratic risk.

Table 10: Quantile Regression Results of Environmental Score on IR for US Banks

Dependent Variable = IR	Q(5) IR	Q(25) IR	Q(50) IR	Q(75) IR	Q(95) IR
Environment	-0.447 (-1.90)	-0.599** (-2.78)	-0.702*** (-4.14)	-0.801*** (-5.03)	-0.923*** (-3.68)
Dividend Yield	-3.162 (-1.43)	-3.197 (-1.48)	-3.220** (-2.60)	-3.243* (-2.24)	-3.271 (-0.92)
Provision For Loan Loss	0.268 (0.13)	0.241 (0.07)	0.223 (0.05)	0.205 (0.04)	0.184 (0.03)
Operating Profit Margin	0.470 (1.33)	0.356 (1.17)	0.280 (0.98)	0.206 (0.57)	0.115 (0.26)
Total Loans	-0.0109 (-0.06)	0.00273 (0.04)	0.0120 (0.14)	0.0208 (0.52)	0.0318 (0.19)
ROE	-0.861 (-1.19)	-0.285 (-0.63)	0.106 (0.19)	0.480 (1.65)	0.944 (1.08)
Inflation	-11.58*** (-5.48)	-4.866** (-2.82)	-0.307 (-0.19)	4.047 (1.78)	9.456* (2.06)
IBES 12 Month Forward EPS	0.0101 (0.96)	0.00334 (0.50)	-0.00123 (-0.13)	-0.00561 (-1.52)	-0.0110* (-2.16)

Capital Adequacy	0.781 (0.29)	1.422 (1.70)	1.857 (1.33)	2.273 (1.77)	2.789* (2.36)
Liquidity	-0.858** (-2.79)	-0.0659 (-0.31)	0.472 (1.45)	0.985*** (5.67)	1.623*** (4.24)
Market to Book	0.0576 (0.42)	0.107 (1.81)	0.140* (2.15)	0.172*** (3.35)	0.212* (2.35)
<i>N</i>	498	498	498	498	498

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, ***
 $p < 0.001$

The results showing the relationship of social dimension and idiosyncratic risk of US banks are presented in Table 11 below. H3 is only supported for the highest risk category banks which are the 0.95 quantile level. This means that social dimension have an inverse impact on firm-specific risk only for banks in highest risk category. Similar to the results of Eurozone banks, no significant relationship is detected between the social dimension and idiosyncratic risk of US banks for all other quantile levels.

Table 11: Quantile Regression Results for Social Score on IR for US Banks

Dependent Variable =	Q(5)	Q(25)	Q(50)	Q(75)	Q(95)
IR	IR	IR	IR	IR	IR
Social	0.316 (1.30)	-0.0278 (0.31)	-0.255 (1.29)	-0.486 (1.78)	-0.795* (1.99)
Dividend Yield	1.635 (-0.47)	2.424 (-1.53)	2.945*** (-3.89)	3.474* (-2.13)	4.182** (-3.09)
Provision For Loan Loss	0.433 (0.17)	0.363 (0.13)	0.317 (0.08)	0.270 (0.04)	0.207 (0.03)
Operating Profit Margin	0.354 (1.03)	0.232 (0.84)	0.152 (0.34)	0.0700 (0.15)	0.0394 (-0.06)

Total Loans	-0.0160 (-0.07)	-0.00626 (-0.12)	0.000150 (0.00)	0.00667 (0.11)	0.0154 (0.10)
ROE	-0.672 (-1.14)	-0.195 (-0.32)	0.120 (0.18)	0.440 (0.69)	0.868 (1.90)
Inflation	- 10.81*** (-7.35)	-3.826* (-2.27)	0.784 (0.67)	5.472** (3.20)	11.73*** (4.50)
IBES 12 Month Forward EPS	0.00697 (0.22)	0.00384 (0.26)	0.00177 (0.27)	- 0.000334 (-0.02)	- 0.00314 (-0.21)
Capital Adequacy	0.341 (0.20)	1.122 (0.57)	1.637* (2.05)	2.161 (1.68)	2.861 (1.64)
Liquidity	-0.663 (-1.83)	-0.150 (-0.73)	0.189 (0.88)	0.533 (1.56)	0.993** (2.77)
Market to Book	0.103 (0.89)	0.141* (2.51)	0.167** (2.58)	0.193 (1.82)	0.228* (2.32)
<i>N</i>	498	498	498	498	498

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The results of equation (4) showing relationship between governance dimension and idiosyncratic volatility for US banks are presented in Table 12 below. Governance have a negative relationship with idiosyncratic risk for lowest and the highest quantile. This means that H5 predicting a negative relationship between governance dimension and idiosyncratic volatility is supported for quantiles 0.05 and 0.95. The negative relationship is stronger for the high risk category banks compared to lowest risk category banks. This supports previous findings as the riskiness of banks increase governance becomes more important and supports the view that good governance becomes more important for risky banks.

Table 12: Quantile Regression Results of Governance Score on IR for US Banks

Dependent Variable = IR	Q(5) IR	Q(25) IR	Q(50) IR	Q(75) IR	Q(95) IR
Governance	-0.370* (2.07)	0.0561 (0.34)	-0.189 (-1.19)	-0.344 (-1.79)	-0.589*** (-3.66)
Dividend Yield	-1.705 (-0.58)	-2.385 (-1.70)	-2.916 (-1.56)	-3.253 (-1.48)	-3.783 (-1.24)
Provision For Loan Loss	0.544 (0.72)	0.443 (0.25)	0.364 (0.21)	0.314 (0.05)	0.236 (0.03)
Operating Profit Margin	0.356 (0.89)	0.201 (0.71)	0.0800 (0.33)	0.00318 (0.01)	-0.118 (-0.17)
Total Loans	-0.0204 (-0.25)	-0.0111 (-0.13)	-0.00384 (-0.05)	0.000762 (0.01)	0.00801 (0.04)
ROE	-0.759 (-1.34)	-0.178 (-0.34)	0.276 (0.73)	0.564 (0.62)	1.017 (1.62)
Inflation	-10.72*** (-4.32)	-3.709** (-2.64)	1.768 (1.11)	5.243 (1.77)	10.71*** (4.48)
IBES 12 Month Forward EPS	0.00727 (0.28)	0.00368 (0.15)	0.000884 (0.10)	-0.00089 (-0.07)	-0.00369 (-0.13)
Capital Adequacy	0.598 (0.26)	1.136 (0.69)	1.555 (1.19)	1.822 (1.11)	2.241 (1.91)
Liquidity	-0.675** (-3.15)	-0.138 (-0.61)	0.282 (1.27)	0.548 (1.79)	0.967 (1.85)
Market to Book	0.0993* (2.00)	0.145 (1.80)	0.181** (2.76)	0.204** (2.81)	0.239* (2.19)
N	471	471	471	471	471

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4.4 Effect of CSR on Bank Value for US Banks

Table 13 below presents the results of equation (5) which shows the effect of CSR on value of US banks. The results show a negative relationship between overall CSR score and bank value for all quantile levels, except the quantile 0.75 where a significant relationship is not detected. The negative relationship is similar for all value levels and do not considerably change as the value level of banks change. The results support the neo-classical theory which argues that CSR is an unnecessary activity which does not create and could even decrease the value of companies. Hypothesis 2 (H2) is not supported, where according to legitimacy and stakeholder theory a value increasing effect is predicted.

Table 13: Quantile Regression Results of CSR for US Banks Value

	Q(5)	Q(25)	Q(50)	Q(75)	Q(95)
Dependent Variable = TQ	TQ	TQ	TQ	TQ	TQ
CSR	-0.146*** (-4.28)	-0.149** (-2.90)	-0.152* (-2.50)	-0.155 (-1.91)	-0.158* (-1.98)
Dividend Yield	0.984** (3.11)	0.924** (3.24)	0.865*** (3.39)	0.820* (2.36)	0.759 (1.61)
Provision For Loan Loss	-0.111 (-0.12)	-0.0327 (-0.03)	0.0438 (0.04)	0.102 (0.16)	0.181 (0.15)
Operating Profit Margin	0.0661 (0.68)	0.0358 (0.38)	0.00645 (0.06)	-0.0159 (-0.20)	-0.0463 (-0.42)
Total Loans	0.0123 (0.98)	0.00603 (0.22)	-0.000083 (-0.00)	-0.00474 (-0.10)	-0.0111 (-0.24)
ROE	0.104 (0.75)	0.137** (2.93)	0.169*** (4.45)	0.194* (2.03)	0.228 (1.59)

Inflation	0.674** (2.96)	0.912** (2.93)	1.143** (3.26)	1.320*** (4.74)	1.559* (2.36)
IBES 12 Month Forward EPS	0.00233 (1.21)	0.00240 (0.45)	0.00247 (1.16)	0.00252 (1.12)	0.00259 (0.55)
Capital Adequacy	-0.172 (-0.34)	-0.269 (-0.78)	-0.362 (-1.45)	-0.433 (-1.30)	-0.529 (-1.80)
Liquidity	-0.0224 (-0.19)	0.0489 (0.51)	0.118* (2.15)	0.171* (2.04)	0.242** (3.26)
<i>N</i>	498	498	498	498	498

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$,
*** $p < 0.001$

4.5 Robustness for Eurozone Banks

To confirm the results provided in the previous section, we conducted some robustness checks. For this purpose, we use accounting-based risk measures to assure the robustness of our results. The previous literature widely accepts the Z-score and capital adequacy (CA) as firm-specific risk measures (Gangi et al., 2019; Neitzert and Petras, 2021; Di Tommaso and Thornton, 2020). The analysis results in replacing the idiosyncratic volatility with the Z-score as the dependent variable, provided in Appendix D, and the results for CA, replacing the idiosyncratic volatility, are presented in Appendix E. The positive coefficients indicate that CSR contributes to bank stability and has an inverse relationship with bank riskiness. The results align with our findings, in which CSR has an inverse relationship with the idiosyncratic risk of banks, and the negative relationship increases as the risk level of banks increases. This shows that results support each other for a market-based and an

accounting-based risk measure. Additionally, these findings are in line with the previous literature, which found an inverse relationship between the CSR performance and the riskiness of banks (Neitzert and Petras 2021, Di Tommaso and Thornton 2020).

To check the robustness of the CSR dimensions, Z-score and CA are regressed on each CSR dimensions. The Z-score, CA, and environmental dimension analysis results are presented in Appendices F and G, respectively. The results presented in Appendices F and G show that the environmental dimension positively correlates with bank stability for all quantile levels. These findings align with the previous literature and support the findings of the model with idiosyncratic risk. Appendix H presents the results of the governance dimension for the Z-score, and Appendix I shows the governance dimension for CA. However, we do not find any significant relationship between the governance dimension and these accounting-based risk measures. These findings do not support our initial results, which found a significant inverse relationship between governance and the idiosyncratic volatility of banks. Finally, Appendix J shows the relationship between the social dimension and Z-score, while Appendix K presents the relationship between the social dimension and CA. The results indicate a positive relationship between the social dimension and risk measures of banks over the 0.25, 0.50, 0.75, and 0.95 quantile levels. These findings contradict the initial results of this research, which could not identify a significant relationship between the social dimension and idiosyncratic bank risk. Although the robustness findings of the governance and social dimensions for accounting-based risk do not align with the idiosyncratic risk, previous literature has indicated that the governance and social dimensions have different effects on the

various bank risks (Neitzert and Petras 2021). This shows that the impact of the CSR dimensions could differ for different risk measures, which could explain the different results for accounting and market-based risk measures. Our findings also suggest that market-based risk measures could be more important as these represent the stakeholders' perceptions better than the accounting figures of the banks.

4.6 Robustness for US Banks

Similar to the robustness tests of Eurozone banks, accounting measures are used in order to uncover whether market based and accounting based risk measures align for US banks. No significant relationship could be detected between accounting based risk measures (z-score and capital adequacy) with overall CSR scores, environmental, social, and governance dimensions in US banks. The results of quantile regressions are provided in the appendix section as L, M, N, O, P, Q, R and S. However, similar to the findings of Neitzert and Petras (2021) it could be argued that CSR scores could have different effects over different risk measures. As it is argued, market based risk measure (idiosyncratic volatility) could better represent the effect of CSR over stakeholders of banks. Even though there is no consensus between results of accounting based risk measures and market based risk measure this could be acceptable as previous research found different results when risk measure is altered.

Chapter 5

DISCUSSION

5.1 Relationship between CSR and IR for Eurozone and US Banks

Our results have number of theoretical and empirical implications as well. It has been showed that there is a negative relationship between CSR and IR for medium to high risk level Eurozone and US banks. The results align with the stakeholder and legitimacy theories, which argue that CSR strategies ensure a stable relationship with stakeholders by legitimizing the banks' actions and providing insurance-like protection against possible adverse shocks, thereby minimizing the IR. CSR acts as a communication tool with key stakeholders, minimizes the information asymmetries, and legitimizes the banks' actions. This implies that CSR could be an important risk management tool and CSR disclosure become more important as the negative effect increases with the riskiness of the bank. As suggested by stakeholder and legitimacy theories, CSR have a greater impact on stakeholders and contributes more to the stability of banks as the risk level increases for both Eurozone and US banks. The results also support the findings of previous scholars who used accounting-based risk measures (Z-score, non-performing loans) and found a negative relationship between CSR and the riskiness of banks (Neitzert and Petras 2021, Di Tommaso and Thornton 2020). The result align with previous research on US banks that predicts a negative relationship between CSR and riskiness of banks which measure the riskiness by accounting based risk measures (Bolton, 2013). Though classical models do not consider CSR as a tool to mitigate risk, the findings show that promoting

socially responsible actions have a negative relationship with the idiosyncratic risk for medium to high-risk category banks.

The overall CSR scores of banks show that average disclosure score of Eurozone banks are higher compared to US banks which show the higher importance given by Eurozone banks to CSR disclosure. Comparison between Eurozone and US banks show that the negative effect of CSR is nearly 2.5 times higher for medium risk Eurozone banks (-0.879) compared to US banks (-0.379). The effect is nearly 2 times greater for the high risk Eurozone banks (-1.340) compared to US banks (-0.711) and nearly 1.75 times higher for very high risk group Eurozone banks (-1.985) compared to US banks (-1.139). This support the view that different cultural and regulatory environment could lead to different stakeholder demands and as there are more guidelines and disclosure requirements for Eurozone banks. The results support the view that stakeholders of Eurozone banks have a higher interest on CSR disclosure and negative relationship between CSR and IR is higher for Eurozone banks.

5.2 Dimensions of CSR and IR for Eurozone and US Banks

A significant negative relationship is evident between the environmental dimension's performance and the idiosyncratic bank risk both for Eurozone and US banks. The results for US banks align with the results of Eurozone banks except for the highest quantile. A significant negative relationship discovered for environmental dimension and idiosyncratic risk for US banks for the quantile 0.95, but no relationship is detected for Eurozone banks. The economic significance of the negative effect slightly increases as the riskiness of banks increase for both US and Eurozone banks. Our results show that communicating with stakeholders about the environmentally friendly actions of banks have a negative relationship with the idiosyncratic risk by

legitimizing the banks' activities. Similarly, previous research found a negative relationship between environmental disclosure and accounting-based risk measures due to increased reputation (Gangi et al., 2019; Neitzert and Petras, 2021). Parallel with our expectation, both current findings and stakeholders of Eurozone and US banks, which includes regulatory bodies, emphasise the importance of environmental disclosure. Increased attention of stakeholders and recent mandatory disclosure requirements over environmental issues, global warming and green finance policies make environmental disclosure an important aspect of stakeholder management which increases the pressure on the banking sector.

Results indicate that focusing on the governance dimension encourages a healthy relationship with the stakeholders, as there is a negative relationship with IR of Eurozone banks. Governance and environmental dimension are similarly important for Eurozone banks as they both have a negative relationship with IR for medium to high risk category banks and magnitude of this relationship is quite similar. However, unlike other dimensions, the governance dimension has a strong negative relationship with IR for the highest-risk category Eurozone banks, and this aligns with the expectation that the governance dimension has a higher negative impact on firm-specific risks, as it is more relevant and visible to the investors (Chollet and Sandwidi 2018).

For US banks governance dimension has a negative effect only for low risk quantile banks (quantile 0.05) and most risky banks (quantile 0.95) and similarly the social dimension has a negative effect only for most risky banks (quantile 0.95). The environmental dimension has the highest negative effect on idiosyncratic risk for all quantiles except the lowest risk quantile (quantile 0.05). The results indicate that

focusing on the environmental dimension could be better for US banks as negative relationship is stronger for US banks for 4 of the quantile levels (quantile 0.25, 0.50, 0.75 and 0.95). These findings align with the results of Neitzert and Petras (2021) who analysed 582 worldwide banks between 2002 and 2018 which found environmental dimension reduces the risks of banks significantly while social and governance dimension have ambiguous results. Recently US banks have a mandatory disclosure requirement for environmental issues however, Eurozone banks have disclosure requirement for environmental, governance and social issues since 2014. Comparing the results of Eurozone and US banks show that environmental dimension is considerably more important for US banks for all of the quantiles except the highest risk category while the environmental and governance dimension are similarly important for Eurozone banks for the majority of the quantile levels. These results indicate that focusing on the environmental dimension is more important for US banks while Eurozone banks should better focus on both governance and environmental dimension.

These results show that stakeholders focus more on environmental issues and good governance, rather than social dimension for Eurozone and US banks. However, previous research could not identify a relationship between overall social dimension and bank riskiness, a negative relationship is found with some elements of the social dimension, such as human rights and labour protection (Neitzert and Petras 2021). The Eurozone countries and US already have a high standard of ethics, social and human rights in which stakeholders could perceive banks extensively focusing on this dimension to be unnecessary.

5.3 Effect of CSR on Bank Value for Eurozone and US Banks

There is a negative relationship between CSR disclosure and value of Eurozone and US banks. The results contradict previous findings on US banks (Bolton 2013) and US companies (Harjoto and Laksmana, 2018) where a value increasing effect of CSR is evident. However the results align with the findings of Di Tommaso and Thornton (2020) who argues that even though the CSR slightly decreases the value of European banks the risk mitigation effect is more important which in turn increases the stability of banks. It shows that there is a trade-off between value creation and risk mitigation effect of CSR for banks. High CSR disclosure scores for European banks (mean CSR score of 0.57) show that risk reducing effect of CSR is considered even though it has a negative effect on bank value. Comparing with Eurozone banks and US banks, they both share the similar results. However, negative effect is slightly higher for Eurozone banks. This shows that CSR has a negative effect on bank value which supports the overinvestment view of neo-classical and agency theory both for US and Eurozone banks. Similar to the argument of Di Tommaso and Thornton (2020) results for both economic unions show a trade-off between banks having lower value and lower risk according to their CSR performances.

Chapter 6

CONCLUSION

This research contributed to the literature by analysing the effect of CSR on idiosyncratic bank risk and bank value for Eurozone and US banks. For this purpose, first, we use the overall CSR scores, and secondly, the CSR dimensions, environmental, social, and governance, separately. The sample consists of 31 Eurozone banks and 35 US banks between 2002 and 2019. It has been revealed that CSR activities have negative relationship with the idiosyncratic risk of banks for medium to high-risk levels for both Eurozone and US banks. Another important finding of this research is that the effect of CSR changes according to the risk levels of banks in both economic systems. As the riskiness of the banks increases, a stronger relationship is detected. These findings align with the expectations of legitimacy and stakeholder theories. Eurozone banks have considerably higher CSR scores compared to US banks and the risk reducing impact of CSR is nearly double for Eurozone banks which explain the higher disclosure scores of Eurozone banks. The guidelines and disclosure requirements are higher for Eurozone banks and this shows that stakeholders of Eurozone banks are more CSR oriented compared to US stakeholders. Additionally, this research shows that the findings of a market-based risk measure align with the findings of accounting-based risk measures for the CSR's effects on Eurozone banks firm-specific risks. However, the same relationship could not be detected for US banks.

Analyses of the individual CSR dimensions showed that the governance and environmental dimensions have a strong negative impact for Eurozone Banks while environmental dimension is more important for US banks. This suggests that Eurozone bank's stakeholders focus on governance quality, which signals the management quality of banks, and that the environmental performance has a significant relationship with the banks' reputations due to society's increased attention to environmental issues. For US stakeholders, environmental practices are more important compared to the governance and social dimension. There was no significant association between the social dimension and idiosyncratic bank risk, indicating that the stakeholders' interest in social projects is not as high as other CSR dimensions for Eurozone and US banks. Alternatively, European and US system have satisfactory conduct over social activities and stakeholders view social projects as window-dressing activities and do not prioritize them.

These results reveal some of the reasoning behind banks' increased commitment to CSR projects. CSR ensures effective communication and good relations with all stakeholders, including customers, employees, shareholders, government, and regulators. The results revealed that CSR negatively relates to idiosyncratic risk for medium to high-risk banks for Eurozone and US. Therefore, CSR could be an essential communication tool. With stakeholders legitimizing the actions of banks, and, as banks' riskiness increases, this tool becomes more important. However, an adverse relationship is also detected between CSR and bank value. Banks should consider the trade-off between negative effect of CSR with risk and value while investing in CSR projects. Banks prioritising risk minimisation could focus on CSR practices while banks focusing on value enhancement could invest less in CSR. The

analyses of the CSR dimensions separately could provide guidance for Eurozone and US Banks. Governance and the environmental dimension have a similar negative relationship with idiosyncratic risk for medium to high risk Eurozone banks, but governance quality is more important for the highest risk category Eurozone banks. This research showed that Eurozone banks could benefit from focusing on governance and environmental dimension. However the environmental dimension is more important for US banks in that it is associated with lower IR, and focusing on environmental issues could be more beneficial. Our results also suggest that regulators and policymakers can use CSR type non-financial information disclosure requirements as risk-reducing policy tools and maintain the financial stability of the system but they should be careful as overinvestment on CSR could harm the value of banks. Nonetheless, these findings suggest that the environmental and the governance dimensions should be emphasized more by regulators and policy makers of Eurozone countries while US based regulators could focus more on environmental matters. This may also explain regulators' increased guidelines and disclosure requirements on CSR information recently.

Lastly this research has some limitations due to data availability on Eurozone and US markets. Future research could increase number of banks or focus other economic regions. Different market based-based risk metrics and value indicators could be used to isolate the effect of CSR on riskiness and value of banks. Additionally further research could expand over this topic by investigating stakeholders' perceptions on particular aspects of the environmental, social and governance dimensions. This could provide further guidance for bank management and regulators on socially

responsible and sustainable banking and its relation to firm-specific risks and bank value.

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APPENDICES

Appendix A: Variable Descriptions

Variable	Description	Source
ESG	Weighted average of environment, social and governance score. Represents overall CSR score.	Eikon
Environment	Environment score measures overall environment performance of banks.	Eikon
Social	Social score measures overall social performance of banks.	Eikon
Governance	Corporate governance measures overall governance performance of banks.	Eikon
Dividend yield	Dividend yield is the percentage of dividend paid compared to stock price	Eikon
Provision for Loan Loss	Shows forecast of future loan losses	Eikon
Operating Profit Margin	Operating profit margin shows efficiency of banks by dividing operating income by net sales	Eikon
LN(Total Loans)	Logarithmic transformation of total loans representing size of Banks	Eikon
Return on Equity	Return on equity is profitability ratio showing net income over equity capital	Eikon
Inflation	Yearly inflation value for the relevant country	World Bank
IBES 12 Months Forward EPS	Institutional Brokers' Estimate System forecast for 12 months forward earnings per share of Banks	Eikon
Capital Adequacy	Capital Adequacy ratio shows percentage of capital to risk weighted assets	Eikon
Liquidity	Liquidity represents ratio of banks' liquid assets against obligations of banks	Eikon
Market to Book Ratio	Market to Book ratio represents market value of banks over book value	Eikon
Tobin's Q	Market value divided by the replacement value of the assets	Eikon

Appendix B: Variance Inflation Factors For Eurozone Banks

Variable	VIF		Variable	VIF
ESG	2.188231		E	3.00264
DY	1.701535		DY	1.69883
PLL	2.102082		PLL	2.11047
OPM	1.719296		OPM	1.71379
LNTL	2.606304		LNTL	3.09291
ROE	1.339026		ROE	1.33807
INF	4.057103		INF	4.05429
IBES	1.088169		IBES	1.15034
CA	2.167291		CA	2.16339
LQ	1.152726		LQ	1.14607
MTB	1.802681		MTB	1.79749
C	NA		C	NA
Variable	VIF		Variable	VIF
S	2.11221		G	1.42733
DY	1.69901		DY	1.70765
PLL	2.08823		PLL	2.17415
OPM	1.71122		OPM	1.74815
LNTL	2.59405		LNTL	2.00201
ROE	1.3417		ROE	1.33628
INF	4.04946		INF	4.05695
IBES	1.08901		IBES	1.09471
CA	2.16309		CA	2.1705
LQ	1.18626		LQ	1.14083
MTB	1.79871		MTB	1.81354
C	NA		C	NA

Appendix C: Variance Inflation Factors For US Banks

Variable	VIF		Variable	VIF
ESG	2.02006		E	2.69175
DY	1.22015		DY	1.21065
PLL	1.11567		PLL	1.10166
OPM	2.33665		OPM	2.28332
LNTL	2.37368		LNTL	2.56521
ROE	2.73261		ROE	2.72476
INF	1.17683		INF	1.18777
IBES	1.29671		IBES	1.31176
CA	1.28305		CA	1.27812
LQ	1.43598		LQ	1.67588
MTB	1.68638		MTB	1.65444
C	NA		C	NA
Variable	VIF		Variable	VIF
S	1.88191		G	1.36387
DY	1.22964		DY	1.20089
PLL	1.11168		PLL	1.10876
OPM	2.32996		OPM	2.28975
LNTL	2.16563		LNTL	1.85927
ROE	2.74816		ROE	2.72076
INF	1.17627		INF	1.17755
IBES	1.30539		IBES	1.29495
CA	1.27819		CA	1.30623
LQ	1.50266		LQ	1.44973
MTB	1.64972		MTB	1.69164
C	NA		C	NA

Appendix D: Quantile Regression Results with CSR and Z-score for Eurozone Banks

Dependent Var.= Z-score	Q(5) Z	Q(25) Z	Q(50) Z	Q(75) Z	Q(95) Z
ESG	0.737 (0.58)	1.555* (1.99)	2.309*** (4.25)	2.949*** (4.34)	3.733*** (3.36)
Dividend Yield	-3.314 (-1.47)	-3.847** (-2.77)	-4.339*** (-4.54)	-4.756*** (-3.94)	-5.267** (-2.67)
Provision For Loan Loss	-39.33 (-1.12)	-38.88 (-1.79)	-38.46** (-2.58)	-38.11* (-2.02)	-37.68 (-1.22)
Operating Profit Margin	-0.900 (-0.60)	-1.067 (-1.15)	-1.221 (-1.90)	-1.351 (-1.67)	-1.511 (-1.14)
Total Loans	0.0904 (0.18)	-0.0586 (-0.19)	-0.196 (-0.94)	-0.313 (-1.19)	-0.455 (-1.06)
ROE	0.156* (2.32)	0.166*** (4.00)	0.175*** (6.13)	0.183*** (5.07)	0.192** (3.27)
Inflation	-40.69** (-3.03)	-36.18*** (-4.36)	-32.01*** (-5.59)	-28.48*** (-3.95)	-24.15* (-2.05)
IBES 12 Month For. EPS	2.94x10 ⁻⁶ (0.73)	1.99x10 ⁻⁶ (0.81)	1.12x10 ⁻⁶ (0.66)	0.38x10 ⁻⁶ (0.18)	0.5x10 ⁻⁶ (-0.15)
Liquidity	0.00979 (0.05)	0.0635 (0.54)	0.113 (1.41)	0.155 (1.53)	0.207 (1.25)
Market to Book	-0.00397 (-0.01)	-0.126 (-0.75)	-0.239* (-2.06)	-0.334* (-2.29)	-0.451 (-1.90)
N	471	471	471	471	471

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, ***
 $p < 0.001$

Appendix E: Quantile Regression Results with CSR and CA for Eurozone Banks

Dependent Var.= Capital Adequacy	Q(5) CA	Q(25) CA	Q(50) CA	Q(75) CA	Q(95) CA
ESG	0.0156 (0.58)	0.0330* (1.99)	0.0490*** (4.25)	0.0626*** (4.34)	0.0792*** (3.36)
Dividend Yield	-0.0703 (-1.47)	-0.0816** (-2.77)	-0.0920*** (-4.54)	-0.101*** (-3.94)	-0.112** (-2.67)
Provision For Loan Loss	-0.834 (-1.12)	-0.825 (-1.79)	-0.816** (-2.58)	-0.808* (-2.02)	-0.799 (-1.22)
Operating Profit Margin	-0.0191 (-0.60)	-0.0226 (-1.15)	-0.0259 (-1.90)	-0.0287 (-1.67)	-0.0321 (-1.14)
Total Loans	0.00192 (0.18)	-0.00124 (-0.19)	-0.00416 (-0.94)	-0.00663 (-1.19)	-0.00966 (-1.06)
ROE	0.00330* (2.32)	0.00351*** (4.00)	0.00371*** (6.13)	0.00388*** (5.07)	0.00408** (3.27)
Inflation	-0.863** (-3.03)	-0.767*** (-4.36)	-0.679*** (-5.59)	-0.604*** (-3.95)	-0.512* (-2.05)
IBES 12 Month For. EPS	6.23 x10 ⁻⁸ (0.73)	4.23 x10 ⁻⁸ (0.81)	2.38 x10 ⁻⁸ (0.66)	8.14 x10 ⁻⁹ (0.18)	-1.11 x10 ⁻⁸ (-0.15)
Liquidity	0.00020 8 (0.05)	0.00135 (0.54)	0.00240 (1.41)	0.00329 (1.53)	0.00438 (1.25)
Market to Book	- 0.00008 42 (-0.01)	-0.00268 (-0.75)	-0.00506* (-2.06)	-0.00709* (-2.29)	-0.00958 (-1.90)
N	471	471	471	471	471

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix F: Quantile Regression Results with Environment Score and Z-score for Eurozone Banks

	Q(5)	Q(25)	Q(50)	Q(75)	Q(95)
Dependent Var.= Z-score	Z	Z	Z	Z	Z
Environment	1.941** (2.67)	2.206*** (5.00)	2.452*** (8.31)	2.634*** (7.21)	2.884*** (4.73)
Dividend Yield	-2.891 (-1.35)	-3.445** (-2.65)	-3.961*** (-4.55)	-4.340*** (-4.02)	-4.863** (-2.70)
Provision For Loan Loss	-50.57 (-1.49)	-46.65* (-2.27)	-43.00** (-3.12)	-40.32* (-2.36)	-36.62 (-1.29)
Operating Profit Margin	-1.055 (-0.74)	-1.176 (-1.36)	-1.290* (-2.24)	-1.374 (-1.92)	-1.489 (-1.25)
Total Loans	-0.500 (-0.99)	-0.650* (-2.11)	-0.791*** (-3.84)	-0.894*** (-3.50)	-1.036* (-2.43)
ROE	0.143* (2.19)	0.158*** (3.98)	0.172*** (6.48)	0.182*** (5.55)	0.197*** (3.59)
Inflation	-34.13** (-2.61)	-31.37*** (-3.95)	-28.80*** (-5.41)	-26.91*** (-4.08)	-24.30* (-2.21)
IBES 12 Month Forward EPS	-2.19 x10 ⁻⁶ (-0.51)	-3.05 x10 ⁻⁶ (-1.16)	-3.86 x10 ⁻⁶ * (-2.20)	-4.45 x10 ⁻⁶ * (-2.04)	-5.26 x10 ⁻⁶ (-1.45)
Liquidity	-0.0298 (-0.17)	0.0136 (0.13)	0.0540 (0.78)	0.0837 (0.98)	0.125 (0.87)
Market to Book	0.0791 (0.29)	-0.0233 (-0.14)	-0.119 (-1.07)	-0.189 (-1.37)	-0.286 (-1.25)
N	471	471	471	471	471

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix G: Quantile Regression Results with Environmental Score CA for Eurozone Banks

Dependent Var.= Capital Adequacy	Q(5) CA	Q(25) CA	Q(50) CA	Q(75) CA	Q(95) CA
Environment	0.0412** (2.67)	0.0468*** (5.00)	0.0520*** (8.31)	0.0559*** (7.21)	0.0612*** (4.73)
Dividend Yield	-0.0613 (-1.35)	-0.0731** (-2.65)	-0.0840*** (-4.55)	-0.0921*** (-4.02)	-0.103** (-2.70)
Provision For Loan Loss	-1.073 (-1.49)	-0.990* (-2.27)	-0.912** (-3.12)	-0.855* (-2.36)	-0.777 (-1.29)
Operating Profit Margin	-0.0224 (-0.74)	-0.0250 (-1.36)	-0.0274* (-2.24)	-0.0291 (-1.92)	-0.0316 (-1.25)
Total Loans	-0.0106 (-0.99)	-0.0138* (-2.11)	-0.0168*** (-3.84)	-0.0190*** (-3.50)	-0.0220* (-2.43)
ROE	0.00303* (2.19)	0.00335*** (3.98)	0.00365*** (6.48)	0.00387*** (5.55)	0.00417*** (3.59)
Inflation	-0.724** (-2.61)	-0.666*** (-3.95)	-0.611*** (-5.41)	-0.571*** (-4.08)	-0.515* (-2.21)
IBES 12 Month Forward EPS	-4.65 x10 ⁻⁸ (-0.51)	-6.48 x10 ⁻⁸ (-1.16)	-8.18 x10 ⁻⁸ * (-2.20)	-9.43x10 ⁻⁸ * (-2.04)	-1.12 x10 ⁻⁷ (-1.45)
Liquidity	-0.000632 (-0.17)	0.000288 (0.13)	0.00115 (0.78)	0.00178 (0.98)	0.00265 (0.87)
Market to Book	0.00168 (0.29)	-0.000494 (-0.14)	-0.00252 (-1.07)	-0.00401 (-1.37)	-0.00606 (-1.25)

N

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, ***
 $p < 0.001$

Appendix H: Quantile Regression Results with Governance Score and Z-score for Eurozone Banks

	Q(5)	Q(25)	Q(50)	Q(75)	Q(95)
Dependent Var.= Z-score	Z	Z	Z	Z	Z
Governance	-1.312 (-1.30)	-0.712 (-1.12)	-0.133 (-0.28)	0.388 (0.62)	0.931 (0.97)
Dividend Yield	-3.186 (-1.33)	-3.951** (-2.63)	-4.689*** (-4.24)	-5.352*** (-3.61)	-6.045** (-2.66)
Provision For Loan Loss	-43.13 (-1.16)	-46.14* (-1.98)	-49.05** (-2.86)	-51.66* (-2.24)	-54.39 (-1.54)
Operating Profit Margin	-1.121 (-0.71)	-1.280 (-1.28)	-1.435 (-1.95)	-1.573 (-1.59)	-1.718 (-1.14)
Total Loans	0.535 (1.13)	0.412 (1.39)	0.292 (1.34)	0.185 (0.63)	0.0731 (0.16)
ROE	0.159* (2.17)	0.164*** (3.54)	0.168*** (4.94)	0.172*** (3.76)	0.175* (2.51)
Inflation	-39.19** (-2.71)	-37.05*** (-4.07)	-34.99*** (-5.23)	-33.14*** (-3.68)	-31.21* (-2.26)
IBES 12 Month Forward EPS	9.78 x10 ⁻⁷ (0.21)	5.06 x10 ⁻⁷ (0.17)	5.12 x10 ⁻⁶ (0.02)	-3.58 x10 ⁻⁷ (-0.12)	-7.85 x10 ⁻⁷ (-0.18)
Liquidity	0.0425 (0.20)	0.0719 (0.55)	0.100 (1.04)	0.126 (0.97)	0.152 (0.77)
Market to Book	0.0342 (0.12)	-0.150 (-0.83)	-0.329* (-2.46)	-0.489** (-2.74)	-0.656* (-2.40)
N	471	471	471	471	471

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix I: Quantile Regression Results with Governance Score and CA for Eurozone Banks

	Q(5)	Q(25)	Q(50)	Q(75)	Q(95)
Dependent Var.= Capital Adequacy	CA	CA	CA	CA	CA
Governance	-0.0278 (-1.30)	-0.0151 (-1.12)	-0.00282 (-0.28)	0.00822 (0.62)	0.0198 (0.97)
Dividend Yield	-0.0676 (-1.33)	-0.0838** (-2.63)	-0.0995*** (-4.24)	-0.114*** (-3.61)	-0.128** (-2.66)
Provision For Loan Loss	-0.915 (-1.16)	-0.979* (-1.98)	-1.041** (-2.86)	-1.096* (-2.24)	-1.154 (-1.54)
Operating Profit Margin	-0.0238 (-0.71)	-0.0272 (-1.28)	-0.0304 (-1.95)	-0.0334 (-1.59)	-0.0364 (-1.14)
Total Loans	0.0114 (1.13)	0.00873 (1.39)	0.00620 (1.34)	0.00393 (0.63)	0.00155 (0.16)
ROE	0.00338* (2.17)	0.00347*** (3.54)	0.00356*** (4.94)	0.00364*** (3.76)	0.00372* (2.51)
Inflation	-0.831** (-2.71)	-0.786*** (-4.07)	-0.742*** (-5.23)	-0.703*** (-3.68)	-0.662* (-2.26)
IBES 12 Month Forward EPS	2.07 x10 ⁻⁸ (0.21)	1.07 x10 ⁻⁸ (0.17)	1.09 x10 ⁻⁹ (0.02)	-7.59 x10 ⁻⁹ (-0.12)	-1.67 x10 ⁻⁸ (-0.18)
Liquidity	0.000902 (0.20)	0.00152 (0.55)	0.00213 (1.04)	0.00267 (0.97)	0.00323 (0.77)
Market to Book	0.000725 (0.12)	-0.00319 (-0.83)	-0.00697* (-2.46)	-0.0104** (-2.74)	-0.0139* (-2.40)
N	471	471	471	471	471

t statistics in parentheses * p < 0.05, ** p < 0.01, ***
p < 0.001

Appendix J: Quantile Regression Results with Social Score and Z-score for Eurozone Banks

	Q(5)	Q(25)	Q(50)	Q(75)	Q(95)
Dependent Var. = Z-Score	Z	Z	Z	Z	Z
Social	1.343 (1.22)	1.838** (2.86)	2.208*** (4.82)	2.563*** (4.46)	2.976** (3.21)
Dividend Yield	-3.551 (-1.49)	-3.926** (-2.81)	-4.207*** (-4.23)	-4.476*** (-3.58)	-4.789* (-2.37)
Provision For Loan Loss	-32.13 (-0.88)	-34.17 (-1.60)	-35.69* (-2.34)	-37.16 (-1.94)	-38.86 (-1.26)
Operating Profit Margin	-0.584 (-0.38)	-0.922 (-1.02)	-1.175 (-1.81)	-1.417 (-1.74)	-1.699 (-1.29)
Total Loans	0.00257 (0.01)	-0.0769 (-0.28)	-0.136 (-0.70)	-0.193 (-0.79)	-0.260 (-0.66)
ROE	0.159* (2.32)	0.173*** (4.34)	0.184*** (6.45)	0.194*** (5.42)	0.206*** (3.56)
Inflation	-38.71** (-2.80)	-33.84*** (-4.20)	-30.20*** (-5.25)	-26.70*** (-3.70)	-22.63 (-1.94)
IBES 12 Month Forward EPS	2.82 x10 ⁻⁶ (0.65)	1.78 x10 ⁻⁶ (0.70)	1 x10 ⁻⁶ (0.55)	2.52 x10 ⁻⁶ (0.11)	-6.18 x10 ⁻⁶ (-0.17)
Liquidity	0.0354 (0.19)	0.0950 (0.88)	0.140 (1.81)	0.182 (1.88)	0.232 (1.49)
Market to Book	0.0297 (0.11)	-0.122 (-0.76)	-0.236* (-2.04)	-0.345* (-2.38)	-0.472* (-2.02)
N	471	471	471	471	471

t statistics in parentheses * p < 0.05, ** p < 0.01, *** p < 0.001

Appendix K: Quantile Regression Results with Social Score and CA for Eurozone banks

Dependent Var. = Capital Adequacy	Q(5) CA	Q(25) CA	Q(50) CA	Q(75) CA	Q(95) CA
Social	0.0285 (1.22)	0.0390** (2.86)	0.0468*** (4.82)	0.0544*** (4.46)	0.0631** (3.21)
Dividend Yield	-0.0753 (-1.49)	-0.0833** (-2.81)	-0.0892*** (-4.23)	-0.0950*** (-3.58)	-0.102* (-2.37)
Provision For Loan Loss	-0.682 (-0.88)	-0.725 (-1.60)	-0.757* (-2.34)	-0.788 (-1.94)	-0.824 (-1.26)
Operating Profit Margin	-0.0124 (-0.38)	-0.0196 (-1.02)	-0.0249 (-1.81)	-0.0301 (-1.74)	-0.0361 (-1.29)
Total Loans	0.000054 6 (0.01)	-0.00163 (-0.28)	-0.00289 (-0.70)	-0.00410 (-0.79)	-0.00551 (-0.66)
ROE	0.00338* (2.32)	0.00368*** (4.34)	0.00390*** (6.45)	0.00412*** (5.42)	0.00437** (3.56)
Inflation	-0.821** (-2.80)	-0.718*** (-4.20)	-0.641*** (-5.25)	-0.566*** (-3.70)	-0.480 (-1.94)
IBES 12 Month Forward EPS	5.99 x10 ⁻⁸ (0.65)	3.78 x10 ⁻⁸ (0.70)	2.12 x10 ⁻⁸ (0.55)	5.35 x10 ⁻⁹ (0.11)	-1.31 x10 ⁻⁸ (-0.17)
Liquidity	0.000750 (0.19)	0.00202 (0.88)	0.00296 (1.81)	0.00387 (1.88)	0.00493 (1.49)
Market to Book	0.000630 (0.11)	-0.00260 (-0.76)	-0.00501* (-2.04)	-0.00732* (-2.38)	-0.0100* (-2.02)
<i>N</i>	471	471	471	471	471

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix L: Quantile Regression Results with CSR and Z-score for US Banks

Dependent Var.= Z-score	Q(5) Z	Q(25) Z	Q(50) Z	Q(75) Z	Q(95) Z
ESG	71.46 (1.11)	21.34 (0.57)	-10.77 (-0.43)	-50.29 (-1.17)	-105.7 (-1.69)
Dividend Yield	259.1 (0.56)	388.2 (1.77)	471.0 (1.15)	572.8 (0.95)	715.6 (0.81)
Provision For Loan Loss	-11.27 (-0.01)	-46.51 (-0.09)	-69.09 (-0.24)	-96.87 (-0.21)	-135.8 (-0.44)
Operating Profit Margin	205.2 (1.60)	168.5** (3.28)	145.0** (2.62)	116.1 (1.37)	75.60 (0.49)
Total Loans	-1.157 (-0.02)	5.908 (0.28)	10.43 (1.94)	16.00 (1.15)	23.81 (0.75)
ROE	-150.2 (-0.58)	-190.7 (-1.29)	-216.7* (-2.48)	-248.7** (-2.98)	-293.6 (-1.94)
Inflation	-593.5 (-0.72)	-257.8 (-0.87)	-42.76 (-0.11)	221.9 (0.47)	593.1 (0.82)
IBES 12 Month For. EPS	-0.250 (-0.09)	-0.397 (-0.26)	-0.491 (-0.26)	-0.607 (-0.37)	-0.769 (-0.33)
Liquidity	22.76 (0.22)	33.59 (0.76)	40.53 (0.70)	49.06 (0.56)	61.03 (1.00)
Market to Book	13.31 (0.32)	3.949 (0.48)	-2.048 (-0.16)	-9.429 (-0.86)	-19.78 (-1.85)
<i>N</i>	498	498	498	498	498

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, ***
 $p < 0.001$

Appendix M: Quantile Regression Results with CSR and CA for US banks

Dependent Var.= Capital Adequacy	Q(5) CA	Q(25) CA	Q(50) CA	Q(75) CA	Q(95) CA
ESG	0.00589 (0.39)	-0.00177 (-0.20)	-0.0106 (-0.69)	-0.0157 (-0.63)	-0.0259 (-0.58)
Dividend Yield	-0.326 (-1.55)	-0.329** (-2.97)	-0.334*** (-4.01)	-0.336*** (-6.23)	-0.341*** (-3.67)
Provision For Loan Loss	0.0144 (0.10)	0.0199 (0.12)	0.0262 (0.13)	0.0299 (0.40)	0.0372 (0.12)
Operating Profit Margin	0.0494 (1.73)	0.0421* (2.37)	0.0338 (0.96)	0.0289 (1.41)	0.0192 (0.89)
Total Loans	-0.00460 (-0.75)	-0.00413 (-1.35)	-0.00359 (-0.28)	-0.00328 (-0.18)	-0.00265 (-0.11)
ROE	-0.0177 (-0.35)	-0.0364* (-2.19)	-0.0579 (-0.94)	-0.0703 (-1.40)	-0.0954 (-0.99)
Inflation	- 0.0000239 (-0.03)	-0.0000755 (-0.12)	-0.000135 (-0.27)	-0.000169 (-0.07)	-0.000238 (-0.07)
IBES 12 Month For. EPS	0.138 (1.15)	0.200* (2.34)	0.270* (2.55)	0.311* (2.10)	0.393 (1.38)
Liquidity	0.0564** (3.24)	0.0695*** (5.88)	0.0845* (2.35)	0.0932* (2.24)	0.111 (1.23)
Market to Book	- 0.0176*** (-4.54)	-0.0171*** (-7.77)	-0.0165*** (-5.90)	-0.0162*** (-3.56)	-0.0155** (-2.94)
N	498	498	498	498	498

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix N: Quantile Regression Results with Environment Score and Z-score for US Banks

Dependent Var.= Z-score	Q(5) Z	Q(25) Z	Q(50) Z	Q(75) Z	Q(95) Z
Environment	20.69 (0.43)	1.119 (0.05)	-11.25 (-0.28)	-28.06 (-0.74)	-50.14 (-0.81)
Dividend Yield	236.9 (0.65)	378.4 (1.48)	467.8 (1.30)	589.3 (1.58)	748.9 (0.69)
Provision For Loan Loss	-36.42 (-0.12)	-55.78 (-0.09)	-68.03 (-0.19)	-84.67 (-0.10)	-106.5 (-0.17)
Operating Profit Margin	214.3 (1.15)	172.4 (1.64)	146.0** (2.83)	110.1 (0.81)	62.86 (0.27)
Total Loans	1.640 (0.06)	6.918 (0.26)	10.26 (0.91)	14.79 (1.32)	20.75 (0.39)
ROE	-163.6 (-0.45)	-194.7 (-1.04)	-214.4*** (-3.86)	-241.1* (-2.18)	-276.2 (-0.77)
Inflation	-585.1 (-1.33)	-269.5 (-1.10)	-69.94 (-0.13)	201.2 (0.34)	557.3 (0.71)
IBES 12 Month Forward EPS	0.00724 (0.00)	-0.329 (-0.25)	-0.541 (-0.49)	-0.830 (-0.74)	-1.209 (-0.52)
Liquidity	13.88 (0.11)	33.10 (0.71)	45.25 (0.61)	61.75 (0.73)	83.43 (0.58)
Market to Book	8.702 (0.55)	2.198 (0.21)	-1.914 (-0.24)	-7.500 (-0.74)	-14.84 (-0.84)
N	498	498	498	498	498

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix O: Quantile Regression Results with Environmental Score CA for US Banks

Dependent Var.= Capital Adequacy	Q(5) CA	Q(25) CA	Q(50) CA	Q(75) CA	Q(95) CA
Environment	0.0131 (0.84)	0.0106 (1.48)	0.00836 (0.80)	0.00656 (0.50)	0.00331 (0.13)
Dividend Yield	-0.311 (-1.96)	-0.315** (-2.87)	-0.318** (-3.27)	-0.321*** (-4.97)	-0.326* (-2.15)
Provision For Loan Loss	0.00745 (0.02)	0.0201 (0.12)	0.0312 (0.52)	0.0403 (1.60)	0.0568 (0.17)
Operating Profit Margin	0.0469 (1.22)	0.0372 (1.32)	0.0286 (1.31)	0.0216 (1.33)	0.00890 (0.31)
Total Loans	-0.00404 (-1.73)	-0.00416 (-1.09)	-0.00427 (-0.99)	-0.00436 (-0.70)	-0.00452 (-0.25)
ROE	-0.0201* (-2.06)	-0.0359 (-1.64)	-0.0499 (-1.27)	-0.0613 (-1.44)	-0.0820 (-0.94)
Inflation	0.165 (1.31)	0.227* (2.19)	0.282** (2.87)	0.327** (2.95)	0.408** (3.26)
IBES 12 Month Forward EPS	-0.00000292 (-0.00)	-0.0000687 (-0.14)	-0.000127 (-0.15)	-0.000174 (-0.95)	-0.000260 (-0.45)
Liquidity	0.0547*** (3.91)	0.0684** (2.60)	0.0806** (3.04)	0.0905* (2.29)	0.108 (1.40)
Market to Book	-0.0163** (-2.58)	-0.0157** (-3.14)	-0.0153*** (-4.69)	-0.0149*** (-4.86)	-0.0141*** (-5.05)
<i>N</i>	498	498	498	498	498

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix P: Quantile Regression Results with Governance Score and Z-score for US Banks

	Q(5)	Q(25)	Q(50)	Q(75)	Q(95)
Dependent Var.= Z-score	Z	Z	Z	Z	Z
Governance	47.39 (1.81)	8.236 (0.27)	-21.37 (-0.82)	-44.91 (-1.75)	-86.82 (-1.41)
Dividend Yield	196.8 (0.47)	370.1 (1.10)	501.1 (1.21)	605.2 (1.36)	790.7 (1.16)
Provision For Loan Loss	-23.56 (-0.04)	-52.48 (-0.12)	-74.34 (-0.12)	-91.73 (-0.15)	-122.7 (-0.16)
Operating Profit Margin	224.3 (1.64)	175.0* (2.39)	137.7 (1.78)	108.1 (0.86)	55.28 (0.29)
Total Loans	-0.498 (-0.03)	6.428 (0.34)	11.66 (0.83)	15.83** (2.95)	23.24 (0.64)
ROE	-171.2 (-0.59)	-199.6 (-1.18)	-221.1* (-2.24)	-238.2 (-1.15)	-268.6 (-1.29)
Inflation	-601.5 (-1.03)	-256.4 (-0.81)	4.472 (0.01)	211.9 (0.48)	581.3 (1.14)
IBES 12 Month Forward EPS	-0.247 (-0.07)	-0.387 (-0.19)	-0.492 (-0.29)	-0.575 (-0.45)	-0.724 (-0.24)
Liquidity	23.37 (0.48)	32.74 (0.46)	39.83 (0.66)	45.46 (0.61)	55.49 (0.52)
Market to Book	11.09 (0.58)	2.762 (0.15)	-3.536 (-0.36)	-8.543 (-0.81)	-17.46 (-1.19)
N	498	498	498	498	498

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix Q: Quantile Regression Results with Governance Score and CA for US Banks

	Q(5)	Q(25)	Q(50)	Q(75)	Q(95)
Dependent Var.= Capital Adequacy	CA	CA	CA	CA	CA
Governance	-0.00688 (-0.52)	-0.0115 (-1.74)	-0.0160 (-0.87)	-0.0202 (-1.40)	-0.0262 (-1.47)
Dividend Yield	-0.336*** (-3.32)	-0.334** (-3.21)	-0.332*** (-3.79)	-0.330*** (-10.51)	-0.328*** (-4.07)
Provision For Loan Loss	0.0111 (0.05)	0.0175 (0.08)	0.0238 (0.09)	0.0297 (0.10)	0.0381 (0.22)
Operating Profit Margin	0.0533* (2.23)	0.0447* (1.98)	0.0363 (1.57)	0.0283 (1.06)	0.0171 (0.53)
Total Loans	-0.00418 (-1.14)	-0.00381 (-0.66)	-0.00346 (-0.81)	-0.00313 (-0.24)	-0.00266 (-0.14)
ROE	-0.0198 (-0.34)	-0.0375 (-1.32)	-0.0547 (-1.87)	-0.0712 (-1.39)	-0.0943 (-1.06)
Inflation	0.133 (1.88)	0.192* (2.01)	0.249* (2.54)	0.304** (3.26)	0.380*** (4.31)
IBES 12 Month Forward EPS	-0.0000691 (-0.10)	-0.0000824 (-0.19)	-0.0000954 (-0.16)	-0.000108 (-0.06)	-0.000125 (-0.04)
Liquidity	0.0561* (2.39)	0.0680*** (3.39)	0.0796* (2.29)	0.0907* (2.12)	0.106 (1.89)
Market to Book	-0.0190*** (-3.70)	-0.0179*** (-6.32)	-0.0169*** (-6.37)	-0.0160*** (-4.33)	-0.0146*** (-4.68)
N	498	498	498	498	498

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix R: Quantile Regression Results with Social Score and Z-score for US Banks

	Q(5)	Q(25)	Q(50)	Q(75)	Q(95)
Dependent Var. = Z-Score	Z	Z	Z	Z	Z
Social	45.85 (0.84)	15.90 (0.41)	-2.342 (-0.13)	-24.98 (-0.76)	-57.70 (-1.37)
Dividend Yield	243.6 (0.51)	387.4 (1.72)	475.0 (1.19)	583.8 (0.85)	740.9 (0.95)
Provision For Loan Loss	-23.56 (-0.04)	-49.94 (-0.08)	-66.00 (-0.21)	-85.94 (-0.71)	-114.8* (-2.36)
Operating Profit Margin	212.6 (1.38)	169.3 (1.95)	143.0 (1.86)	110.3* (2.01)	63.10 (0.74)
Total Loans	-0.0602 (-0.00)	6.211 (0.20)	10.03 (1.79)	14.77** (3.17)	21.62*** (4.30)
ROE	-151.6 (-0.43)	-189.9 (-1.28)	-213.2 (-1.57)	-242.2*** (-3.71)	-284.0 (-1.58)
Inflation	-636.4 (-1.11)	-268.5 (-0.69)	-44.44 (-0.14)	233.7 (0.84)	635.5* (2.11)
IBES 12 Month Forward EPS	-0.260 (-0.11)	-0.415 (-0.20)	-0.509 (-0.75)	-0.625 (-0.92)	-0.794 (-0.59)
Liquidity	23.00 (0.19)	34.26 (0.55)	41.12 (0.88)	49.63 (0.52)	61.93 (0.59)
Market to Book	11.76 (0.45)	3.673 (0.22)	-1.254 (-0.12)	-7.368 (-0.97)	-16.20 (-1.50)
<i>N</i>	498	498	498	498	498

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix S: Quantile Regression Results with Social Score and CA for US banks

Dependent Var. = Capital Adequacy	Q(5) CA	Q(25) CA	Q(50) CA	Q(75) CA	Q(95) CA
Social	0.0114 (1.67)	0.00700 (0.40)	0.00318 (0.18)	-0.000129 (-0.01)	-0.00606 (-0.36)
Dividend Yield	-0.313* (-2.46)	-0.318 (-1.74)	-0.322*** (-5.38)	-0.325*** (-5.13)	-0.332*** (-3.66)
Provision For Loan Loss	0.0105 (0.08)	0.0209 (0.07)	0.0300 (0.16)	0.0378 (0.21)	0.0519 (0.26)
Operating Profit Margin	0.0451 (1.42)	0.0373 (0.96)	0.0304 (1.13)	0.0245 (1.28)	0.0139 (0.64)
Total Loans	-0.00424 (-1.17)	-0.00419 (-0.35)	-0.00414 (-0.35)	-0.00410 (-0.27)	-0.00403 (-0.42)
ROE	-0.0172 (-0.66)	-0.0348 (-1.09)	-0.0502 (-1.04)	-0.0636* (-2.07)	-0.0875 (-1.71)
Inflation	0.143 (1.40)	0.208 (1.74)	0.265** (3.01)	0.314* (2.29)	0.403* (2.48)
IBES 12 Month Forward EPS	- 0.0000388 (-0.05)	-0.000103 (-0.53)	-0.000160 (-0.31)	-0.000209 (-0.22)	-0.000297 (-1.05)
Liquidity	0.0591** (2.86)	0.0722** (3.19)	0.0836** (2.96)	0.0935 (1.67)	0.111** (3.08)
Market to Book	-0.0165*** (-4.29)	-0.0160*** (-3.94)	-0.0156*** (-5.45)	-0.0153*** (-3.77)	-0.0147*** (-4.83)
<i>N</i>	498	498	498	498	498

t statistics in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$