Marmara Üniversitesi İktisadi ve İdari Bilimler Dergisi • Cilt: 47 • Sayı: 3 2025, ISSN: 2587-2672, ss/pp. 437-456
DOI: 10.14780/muiibd.1747477

ARAŞTIRMA MAKALESİ / RESEARCH ARTICLE

SERMAYE YAPISI, KSS VE HİSSE SENEDİ PİYASASI: TÜRKİYE ÖRNEĞİ

CAPITAL STRUCTURE, CSR, AND STOCK MARKET: EVIDENCE FROM TÜRKİYE

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Abstract

This study examines the dynamic relationship between corporate social responsibility (CSR), financial leverage, firm value, and risk in Turkish firms, focusing on whether past and current leverage influence CSR engagement and whether CSR–leverage interactions affect firm performance and volatility. Using panel data for 100 firms listed on the BIST 100 index over the 2002–2023 period, fixed-effects regression models are employed. The results show that higher leverage significantly reduces CSR activities, while CSR does not have a statistically significant effect on leverage. A negative relationship is found between past leverage and firm value, whereas no significant association is observed with stock return volatility. The interaction between CSR and past leverage shows that in highly leveraged firms, CSR does not translate into higher firm value—meaning that heavy debt burdens can weaken or offset any value-enhancing effects of CSR engagement. This study contributes to the literature by providing evidence from an emerging market context and highlights the importance of reducing financial constraints to foster CSR engagement in highly leveraged firms, with implications for policymakers, managers, and investors.

Keywords: Corporate Social Responsibility, Financial Leverage, Firm Value, Risk, Panel Data Analysis
JEL Classification: G32; M14; G34; C23

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How to cite this article/Atıf için: Kovacevic I, Keleş E. (2025). Sermaye Yapısı, KSS ve Hisse Senedi Piyasası: Türkiye Örneği. *Marmara Üniversitesi İktisadi ve İdari Bilimler Dergisi, 47*(3), 437-456. DOI: 10.14780/muiibd.1747477

Makale Gönderim Tarihi: 21.07.2025 **Yayına Kabul Tarihi:** :12.08.2025 **Benzerlik Oranı:** %10

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Öz

Bu çalışma, Türkiye'deki firmalarda kurumsal sosyal sorumluluk (KSS), finansal kaldıraç, firma değeri ve risk arasındaki dinamik ilişkiyi incelemekte; KSS'nin geçmiş kaldıraç düzeyi ve mevcut kaldıraç ile etkileşiminin firma değeri ve risk üzerindeki etkilerini araştırmaktadır. 2002–2023 dönemine ait panel veri kullanılarak sabit etkiler regresyon modelleri uygulanmıştır. Bulgular, yüksek kaldıraç seviyelerinin KSS faaliyetlerini anlamlı biçimde azalttığını, ancak KSS'nin kaldıraç üzerinde anlamlı bir etkisi olmadığını göstermektedir. Geçmiş kaldıraç düzeyi ile firma değeri arasında negatif yönlü bir ilişki bulunmuş; ancak hisse senedi getirisi oynaklığı ile ilişki tespit edilmemiştir. CSR ile geçmiş kaldıraç arasındaki etkileşim, yüksek borçluluk düzeyine sahip firmalarda CSR'ın firma değerini artırıcı etkisinin zayıfladığını veya tamamen ortadan kalktığını göstermektedir. Bu durum, ağır borç yükünün CSR girişimlerinden doğabilecek değer kazanımlarını sınırladığını ortaya koymaktadır. Çalışma, gelişmekte olan bir piyasa bağlamında KSS–sermaye yapısı ilişkisine dair kanıt sunarak, yüksek kaldıraçlı firmalarda KSS'nin artırılması gerektiğini vurgulamakta ve politika yapıcıların finansal kısıtları azaltıcı destek mekanizmaları geliştirebileceğine işaret etmektedir.

Anahtar Kelimeler: Kurumsal Sosyal Sorumluluk, Finansal Kaldıraç, Firma Değeri, Risk, Panel Veri Analizi

JEL Sınıflandırması: G32; M14; G34; C23

1. Introduction

In recent decades, corporate social responsibility (CSR) has progressed from a peripheral philanthropic activity to a strategic element of corporate policy, influencing not only reputation and stakeholder relations but also financial performance and risk management. This evolution has been driven by growing societal expectations, the increasing importance of sustainability, and heightened scrutiny from investors, regulators, and other stakeholders. While CSR has become an established field of research in developed economies, its role and financial implications in emerging markets remain less well understood. In countries such as Türkiye, where corporate governance systems and capital markets are still developing, the dynamics of CSR are shaped by unique institutional characteristics, evolving stakeholder demands, and relatively limited access to financial resources. These factors create an environment where the interaction between CSR and financial decisions, particularly capital structure, may differ markedly from patterns observed in advanced economies.

The relationship between CSR and financial decision-making is inherently multidimensional. Prior studies provide substantial evidence on CSR's association with firm value and risk (e.g., Albuquerque et al., 2019; Fatemi et al., 2015), yet relatively few have examined its bidirectional link with capital structure. Existing literature often focuses on developed markets, overlooking the possibility that financial leverage can restrict CSR engagement (Goss & Roberts, 2011; Bae et al., 2019) or that the interaction between CSR and leverage can influence firm value and risk in emerging financial environments (Lu et al., 2021; Wang et al., 2022). Moreover, only a limited number of studies have integrated CSR, leverage, and risk into a unified analytical framework that captures their dynamic interplay over time. Addressing this gap is particularly relevant in the Turkish context, where firms may face higher capital costs, more volatile market conditions, and weaker institutional support compared to their counterparts in developed economies.

This study contributes to the literature in three important ways. First, it investigates the bidirectional relationship between CSR and financial leverage, assessing whether CSR affects leverage decisions or whether leverage constrains CSR activities. Second, it examines how the interaction between CSR and leverage influences firm value and stock return volatility, providing evidence on the conditions under which CSR may be value-enhancing or risk-reducing. Third, it employs a fixed-effects panel regression framework using data for 100 firms listed on the BIST 100 index over the period 2002–2023, allowing for the control of firm-specific heterogeneity and enhancing the robustness of the results.

The theoretical framework underpinning this study draws on stakeholder theory and trade-off theory. Stakeholder theory posits that firms engage in CSR to build trust, maintain legitimacy, and secure long-term benefits, even at the expense of short-term profitability. In contrast, trade-off theory suggests that higher leverage increases financial risk, which can constrain discretionary spending on activities such as CSR. Together, these perspectives suggest that CSR and leverage may interact in complex ways, with implications for firm value and risk that may differ across institutional contexts.

The remainder of the paper is structured as follows. Section 2 reviews the relevant literature and develops the hypotheses. Section 3 describes the data and methodology. Section 4 presents and discusses the empirical findings. Section 5 concludes with implications, limitations, and suggestions for future research.

2. Literature Review and Hypotheses Development

2.1. CSR and Value Creation

Corporate reputation is widely recognized as a strategic asset that enhances competitiveness and stakeholder trust. In the context of CSR, reputation is linked to socially responsible practices such as investment in local communities and equitable treatment of employees (Falck &Heblich, 2007). In the global economy, firms increasingly face pressure to align financial performance with CSR commitments, making CSR a core element of corporate strategy. Although CSR initiatives require significant resource allocation, they may generate long-term benefits through enhanced legitimacy, customer loyalty, and reduced demand sensitivity, thereby allowing firms to sustain higher margins and improve resilience during market downturns (Goss & Roberts, 2011; Albuquerque et al., 2019).

Empirical evidence on the CSR–firm value relationship is mixed. Several studies identify positive associations between CSR and financial performance indicators such as ROE and ROA (Ogachi& Zoltan, 2020; Mahmood et al., 2023; Oduro et al., 2024), while others report potential negative or non-linear effects (Rosyid et al., 2022; Wang et al., 2022). The effectiveness of CSR in value creation appears to depend on contextual factors, including financial flexibility, R&D investment, and governance quality (Guo et al., 2020; Lu et al., 2021). CSR disclosures are shown to encourage transparency, yet excessive or opportunistic reporting may distort investor perceptions, emphasizing the importance of robust CSR reporting standards (Ho et al., 2022).

Further, CSR's contribution to value creation is contingent upon specific conditions. It tends to improve firm value in environments characterized by high earnings stability, competitive market

structures, or significant environmental risk exposure but may be neutral or detrimental in low-risk settings (Fatemi et al., 2015; Sheikh, 2019; Hsu et al., 2023). These findings highlight the need for CSR strategies that are aligned with a firm's operating and financial context.

CSR and value creation are strongly linked to Stakeholder Theory, which argues that meeting stakeholder needs enhances trust and long-term performance (Freeman, 1984; Jones, 1995). Signaling Theory (Spence, 1973) also applies, as CSR activities and disclosures can send positive market signals about stability, ethics, and long-term viability. In contrast, Agency Theory(Jensen & Meckling, 1976; Friedman, 1970) suggests that CSR might sometimes be a tool for managerial self-interest, potentially diluting shareholder value if misaligned with core business strategy. Legitimacy Theory supports the idea that CSR helps maintain social license to operate, especially in industries facing high scrutiny.

Studies generally find that CSR can enhance firm value, reduce risk, and improve stakeholder relations, though the magnitude depends on financial flexibility, industry conditions, and governance quality. Known benefits include improved investor confidence and lower downside volatility. However, evidence remains mixed on whether CSR always creates value—some contexts show neutral or negative effects. More research is needed on long-term causal effects, cross-country differences, and the interplay between CSR intensity and firm innovation strategies.

2.2. CSR and Risk Mitigation

CSR is increasingly viewed as an insurance-like mechanism capable of mitigating a broad range of risks, including default risk, stock price volatility, and crash risk (Fatemi et al., 2015; Shahrour et al., 2021; Wu et al., 2024). This risk-reducing effect is often achieved through lowering information asymmetry, improving stakeholder trust, and signaling long-term stability to investors and creditors (Do et al., 2023; Hsu et al., 2023). Strong CSR performance is linked to reduced cost of capital, improved credit ratings, and enhanced resilience during economic downturns (Goss & Roberts, 2011; Elbardan et al., 2023).

However, the CSR–risk relationship is complex. Some evidence suggests a U-shaped effect, where initial CSR engagement may increase risk before reaching a threshold beyond which risk is reduced (Farah et al., 2021; Wang & Yang, 2024). The degree of operating leverage and national cultural characteristics—such as power distance, long-term orientation, and uncertainty avoidance—can moderate these effects, influencing whether CSR reduces or intensifies firm-level risk (Mhiri et al., 2024).

Risk mitigation effects of CSR can also be explained through Stakeholder Theory (Freeman, 1984; Jensen, 2010), which posits that satisfying stakeholder expectations can reduce operational and reputational risks. Signaling Theory (Spence, 1973; Nguyen, V. H., 2025) further suggests that CSR disclosure acts as a credible signal of firm stability and commitment to long-term sustainability, especially important in high-leverage or volatile environments. Legitimacy Theory (Dewi et al., 2021) explains CSR as a way to maintain societal approval, which can indirectly lower risk exposure.

Evidence supports CSR's role in lowering default risk, cost of debt, and stock price volatility, particularly in downturns. Known mechanisms include reduced information asymmetry, improved access to capital, and insurance-like protection against crises. However, the threshold at which CSR shifts from increasing to decreasing risk is not well established. Gaps also remain in understanding how cultural and institutional contexts moderate these effects and whether certain types of CSR (environmental vs. social) are more effective in risk reduction.

2.3. CSR and Capital Structure

Capital structure both influences and is influenced by CSR activities. High leverage can incentivize CSR adoption as a means of safeguarding stakeholder relationships and protecting market position in competitive environments (Bae et al., 2019). Conversely, CSR can affect financing terms by influencing loan spreads, maturities, and credit conditions (Goss & Roberts, 2011; Do et al., 2023).

The interaction between CSR and leverage has implications for both value creation and risk mitigation. CSR can moderate the adverse effects of leverage on firm risk, while financial constraints may limit CSR's benefits in risk management (Li et al., 2022). Aligning CSR strategies with capital structure considerations is therefore essential to maximize their effectiveness in achieving strategic and financial objectives.

In the capital structure context, Agency Theory (Jensen & Meckling, 1976; Nguyen, 2023) implies that managers might use CSR to mask the risks of high leverage or to gain access to cheaper financing, sometimes leading to conflicts with shareholder interests. Signaling Theory (Spence, 1973) frames CSR as a costly, credible signal to investors and creditors about the firm's long-term viability, particularly relevant when external financing is sought. Legitimacy Theory (Dewi et al., 2021) highlights CSR as a means of maintaining acceptance from key stakeholders—creditors, regulators, and investors—which can indirectly affect capital costs. Stakeholder Theory (Freeman, 1984) supports the idea that CSR can improve financing stability by strengthening trust-based relationships with capital providers.

Studies show that CSR can positively affect leverage terms, loan spreads, and maturity structures, especially for high-quality borrowers. Known outcomes include improved credit ratings and lower interest rates when CSR is credible and well-governed. However, the direction of causality remains uncertain—whether CSR drives better financing terms or firms with easier access to finance can afford more CSR. Further research is needed on cross-industry differences, the role of mandatory CSR disclosure in capital structure decisions, and long-term leverage adjustment dynamics.

2.4. Hypotheses Development

The reviewed literature demonstrates that CSR plays a multifaceted role in shaping firm value, mitigating risk, and interacting with capital structure decisions. While CSR may enhance firm performance through improved stakeholder relations and reduced volatility, its effects are contingent upon financial flexibility, governance quality, and market context. Similarly, leverage can both incentivize and constrain

CSR engagement, influencing the extent to which CSR achieves its intended outcomes. These insights reveal important gaps in understanding the bidirectional relationship between CSR and leverage, as well as their joint impact on firm value and risk. Addressing these gaps, the present study investigates (i) how leverage affects CSR engagement, (ii) how CSR influences leverage decisions, and (iii) how the interaction between CSR and leverage shapes firm value and price volatility.

Financial leverage can shape corporate social responsibility (CSR) decisions through its effects on financial flexibility and stakeholder priorities. According to the trade-off theory, higher leverage increases financial risk and may constrain a firm's capacity for discretionary spending, such as CSR initiatives. Stakeholder theory also suggests that when firms face financial pressure, they may prioritize creditor demands over social investments. Empirical evidence confirms these dynamics: Bae et al. (2019) show that leverage levels significantly influence CSR engagement, while Sheikh (2019) finds that market competition moderates this relationship. Conversely, some studies indicate that CSR can reduce the costs associated with high leverage by improving stakeholder trust, potentially motivating leveraged firms to sustain CSR efforts. Therefore, we posit the following hypothesis:

H1: *Financial leverage has a significant impact on corporate social responsibility decisions.*

CSR can influence a firm's future capital structure by affecting its cost of capital and access to financing. Signaling theory posits that CSR can enhance a firm's reputation and reduce perceived risk, which may improve borrowing terms or increase debt capacity. On the other hand, if CSR is perceived as costly, it could reduce debt capacity by limiting free cash flow. Empirical studies show that CSR affects financing conditions, influencing loan spreads and maturities (Goss & Roberts, 2011) and impacting the speed at which firms adjust their leverage levels (Do et al., 2023). Therefore, we posit the following hypothesis:

H2: Corporate social responsibility influences a firm's future financial leverage.

The interaction between CSR and financial leverage can have important implications for firm value. Stakeholder theory suggests that CSR can enhance firm value by building trust and legitimacy, but when paired with high leverage, such initiatives may be perceived as less credible or as inefficient use of resources. Prior research finds that the value effects of CSR depend on financial flexibility, with different outcomes depending on whether CSR signals resilience or diverts resources under financial strain (Fatemi et al., 2015; Guo et al., 2020). Therefore, we posit the following hypothesis:

H3: *The interaction between lagged CSR and current leverage significantly affects firm value.*

CSR may also influence firm-specific risk when combined with leverage. From a risk management perspective, CSR could stabilize returns by reducing firm-specific risk, but this effect may be weakened by high leverage. Studies show that CSR can reduce downside risk and volatility (Albuquerque et al., 2019), while ESG performance more broadly impacts firm risk in the financial sector (Lee & Koh, 2024). The extent to which CSR offsets or amplifies the risk associated with leverage remains an open empirical question. Therefore, we posit the following hypothesis:

H4: The interaction between lagged CSR and current leverage significantly affects future price volatility.

The effectiveness of CSR in enhancing firm value may depend on past capital structure decisions. Firms with a history of high leverage may engage in CSR to rebuild reputation and restore investor confidence, potentially boosting market valuation. However, if high past leverage undermines the credibility of CSR efforts, the value impact may be negative. Previous research highlights that the CSR–performance relationship can be contingent on governance structures and firm-specific financial histories (Lu et al., 2021; Wang et al., 2022). Therefore, we posit the following hypothesis:

H5: *Current CSR, when interacted with past leverage, has a significant impact on firm value.*

CSR can also serve as a post-leverage strategy to mitigate future risk. For firms with a high-leverage history, CSR may signal stability and long-term commitment, helping to repair stakeholder confidence and reduce volatility. However, the effect may be non-linear and dependent on governance quality. Evidence suggests that corporate governance mechanisms can strengthen CSR's ability to reduce firm risk (Farah et al., 2021; Nirino et al., 2022). Therefore, we posit the following hypothesis:

H6: Current CSR, when interacted with past leverage, significantly influences future price volatility.

In all regressions, xk stands for control variables and μ stands for fixed effect. The use of fixed effects is a good fit given the structure of the data set, which consists of repeated firm-level observations over time. Fixed effects allow the analysis to control for all unobserved, time-invariant firm-specific characteristics—such as corporate culture, managerial philosophy, industry classification, or regional effects—that could otherwise bias the estimated impact of CSR and leverage on financial performance and risk. By focusing on within-firm variation, fixed effects models capture how changes in CSR and leverage overtime impact outcomes such as Tobin's Q and stock price volatility, while removing any confounding impact from stable firm traits.

3. Data and Methodology

3.1. Sample

This study uses panel data from 100 firms listed on the BIST 100 index in Türkiye for the period 2002–2023. The data, sourced from the Refinitiv database, includes both financial and ESG-related variables. The aim is to analyze the bidirectional relationship between corporate social responsibility (CSR) and financial leverage, as well as the interaction effects of these variables on firm value and stock return volatility. The sample is used to analyze two main sets of regression models, each addressing different research questions.

The dataset is well suited for a fixed-effects panel regression framework, which controls for unobserved, time-invariant firm-specific. This design allows us to focus on within-firm changes over time, thus improving the robustness of the estimates. However, it is acknowledged that fixed-effects models

cannot fully eliminate endogeneity concerns, especially those arising from reverse causality — where CSR may influence leverage and, in turn, leverage may influence CSR. Although lagged variables are employed to reduce simultaneity bias, future research could consider additional strategies such as instrumental variable estimation or system GMM to further mitigate reverse causality risk.

The financial data were obtained from the Refinitiv database, which applies standardized adjustments to ensure comparability over time. Although Turkish Financial Reporting Standards (TFRS) became mandatory for BIST companies in 2005 and were fully aligned with IFRS by 2008, Refinitiv restates historical financial statements where possible to reflect consistent accounting definitions. As a result, the variables used in this study are already adjusted to a common reporting basis, minimizing distortions from the change in standards. No further manual restatement was necessary; however, the potential influence of reporting changes is acknowledged as a limitation.

This study estimates two sets of regression models to address the research objectives. The first set examines the directional relationship between CSR and financial leverage by estimating models with CSR as the dependent variable and models with leverage as the dependent variable. The second set investigates the moderating effects of CSR and leverage on firm value (proxied by Tobin's Q) and price volatility. These specifications allow assessment of whether leverage constrains CSR engagement, whether CSR influences capital structure decisions, and whether CSR–leverage interactions affect firm value and risk.

3.2. Variables

The variables used in this study are designed to capture the core dimensions of CSR, financial structure, firm valuation, and risk, along with several control variables related to firm characteristics and governance.In this study, the dependent variable is financial leverage when testing whether CSR influences leverage, while CSR is the dependent variable when testing whether leverage affects CSR. In the analysis of firm performance and risk, firm value and volatility serve as the dependent variables. The independent variables is the CSR × leverage interaction term.

Table 1: Summary of Variables

Variable Name	Definition/Description	Measurement / Proxy	Data Source
CSR	ESG performance score representing environmental, social, and governance behavior	ESG score from Refinitiv	Refinitiv
Financial Leverage	Firm's reliance on external debt	Ratio of total debt to total assets	Refinitiv
Firm Value	Market-based measure of firm value	Tobin's Q	Refinitiv
Price Volatility	Proxy for firm-specific risk	Volatility of stock returns	Refinitiv
CSR × Leverage	Interaction term capturing joint effect on outcomes	Product of CSR score and Financial Leverage	Refinitiv
Control Variables			
Log TA	Firm size proxy	Logarithm of Total Assets	Refinitiv
Momentum (MOM)	Short-term market performance trends	Cumulative return over previous 12 months	Refinitiv

Firm Size	Controls for scale effects	Logarithm of total assets	Refinitiv
ROA	Firm's financial capacity to invest in CSR	Logarithm of total assets	Refinitiv
M/B Value	Proxy for growth opportunities	Market value / book value	Refinitiv
Log RD	Investment behavior in tangible and intangible assets	Logarithm of R&D	Refinitiv
log PPE	Proportion of fixed assets	Logarithm of PPE	Refinitiv
Beta	Firm's sensitivity to market returns	Estimated from market model	Refinitiv
Log Sales	Firm revenue scale	Logarithm of annual sales	Refinitiv
Board Size	Governance control	Total number of directors	Refinitiv
Board Independence	Accountability and CSR engagement	Proportion of independent directors	Refinitiv
CEO Duality	Concentration of power	Dummy variable: 1 if CEO is also board chair, 0 otherwise	Refinitiv

3.3. Empirical Design

Our objective is to test (i) the directional link between CSR and financial leverage and (ii) whether CSR–leverage interactions shape firm value and risk. We estimate panel regressions on firm-year observations. All models include firm fixed effects (μ_i) and year fixed effects (τ_t) to absorb time-invariant firm heterogeneity and common shocks.

The baseline specifications are:

$$CSR_{(t+1)}=\alpha+\beta_1*Leverage_{(t)}+\sum_{k=1}^{k}\beta_2 x_k\,(t)+\mu_{(t)}+e_{(t+1)} \quad (1)$$

$$Leverage_{(t+1)}=\alpha+\beta_1*CSR_{(t)}+\sum_{k=1}^{k}\beta_2 x_k\,(t)+\mu_{(t)}+e_{(t+1)} \quad (2)$$

$$Value_{(t+1)}=\alpha+\beta_1*CSR_{(t-1)}*Leverage_{(t)}+\sum_{k=1}^{k}\beta_2 x_k\,(t)+\mu_{(t)}+e_{(t+1)} \quad (3)$$

$$Volatility_{(t+1)}=\alpha+\beta_1*CSR_{(t-1)}*Leverage_{(t)}+\sum_{k=1}^{k}\beta_2 x_k\,(t)+\mu_{(t)}+e_{(t+1)} \quad (4)$$

$$Value_{(t+1)}=\alpha+\beta_1*CSR_{(t)}*Leverage_{(t-1)}+\sum_{k=1}^{k}\beta_2 x_k\,(t)+\mu_{(t)}+e_{(t+1)} \quad (5)$$

$$Volatility_{(t+1)}=\alpha+\beta_1*CSR_{(t)}*Leverage_{(t-1)}+\sum_{k=1}^{k}\beta_2 x_k\,(t)+\mu_{(t)}+e_{(t+1)} \quad (6)$$

In all regressions, xk stands for control variables and μ stands for fixed effect. The use of fixed effects is a good fit given the structure of the data set, which consists of repeated firm-level observations over time. Fixed effects allow the analysis to control for all unobserved, time-invariant firm-specific characteristics—such as corporate culture, managerial philosophy, industry classification, or regional effects—that could otherwise bias the estimated impact of CSR and leverage on financial performance and risk. By focusing on within-firm variation, fixed effects models capture how changes in CSR and leverage overtime impact outcomes such as Tobin's Q and stock price volatility, while removing any confounding impact from stable firm traits.

Results

This chapter provides the results of multiple regression models employed in the study to measure the determinants of CSR, Financial Leverage, Firm Value, and the Price Volatility of the Turkish firms. Stata is used for running regressions. It excels in handling panel data, which is common in CSR and finance research.

Table 2 provides the summary statistics of the variables under study. Firm Value is measured by Tobin's Q, and CSR is measured by a combined score of all efforts employed by the company. No outlier is detected in the dataset, and all the values are found in the normal range. Logarithm is taken for the larger values like R&D expenditures, Property Plant and Equipment (PPE), Sales, and Total Assets of the firms to normalize the data.

Table 2: Descriptive Statistics of Variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
Firm Value	1347	1.57	1.787	.244	38.423
CSR	485	54.477	21.588	2.39	94.2
Price Volatility	1187	35.41	8.494	17.13	64.36
Beta	1288	1.087	.395	-.18	10.06
Financial Leverage	1442	25.134	19.768	0.002	118.306
log TA	1443	15.423	2.175	9.683	21.802
ROA	1440	2.595	4.439	-20.655	39.946
Market to Book Value	1120	11.764	121.335	-191.93	1976.41
log R&D	580	8.989	2.203	1.792	15.474
log PPE	1421	13.463	2.446	1.099	20.335
log Sales	1238	13.701	2.011	5.7	19.401
MOM	1276	28.421	55.747	-147.92	362.84
Board Size	484	10.676	3.446	1	27
Board Independence	474	29.547	13.187	0	60
CEO Duality	461	.703	.458	0	1

To examine the effect of financial leverage on CSR engagement, we estimate the regression model specified in Section 3. The dependent variable is CSR_{t+1}, measured by the firm's CSR score in the following year, while the key explanatory variable is Financial Leverage.

Table 3 presents the baseline regression results. The coefficient on Financial Leverage is negative and statistically significant at the 10% level (–0.308, $p = 0.053$), suggesting that firms with higher debt levels tend to allocate fewer resources to CSR activities. Economically, this implies that an increase in leverage reduces the firm's ability or willingness to engage in socially responsible practices.

Among the control variables, firm size (logTA) is positively and significantly related to CSR, while sales growth (logSales) and board size are negatively associated with CSR. These results indicate that larger firms are more likely to invest in CSR, but firms with higher sales growth or larger boards may be less inclined to do so.

Overall, the findings support H1 and align with the trade-off theory, which posits that leveraged firms prioritize meeting financial obligations over discretionary spending on CSR. This is also consistent with Dewi et al. (2021), who find that higher leverage reduces CSR engagement by limiting resources available for non-core activities.

Table 3: Regression Results: Effect of Financial Leverage on CSR (H1)

CSR_{t+1}	Coef.	St.Err.	t-value	p-value	Sig
Financial Leverage	-.308	.1480	-2.08	.053	*
logTA	25.052	7.439	3.37	.004	***
ROA	-.518	.994	-0.52	.609	
M/B Value	1.507	.915	1.65	.119	
logRD	4.176	2.718	1.54	.144	
logPPE	-4.438	9.290	-0.48	.639	
Beta1	17.265	3.320	5.20	0	***
logSales	-12.482	5.179	-2.41	.028	**
MOM	.003	.025	0.11	.91	
Board Size	-1.156	.427	-2.71	.015	**
Board Independence	.225	.173	1.30	.211	
CEO Duality	1.606	11.497	0.14	.891	
Constant	-151.88	51.641	-2.94	.01	***
Mean dependent var	57.460		**SD dependent var**		21.771
R-squared	0.628		**Number of obs**		115
F-test	3384.666		**Prob > F**		0.000
Akaike crit. (AIC)	852.333		**Bayesian crit. (BIC)**		885.272

**** p<.01, ** p<.05, * p<.1*

CSR = Corporate Social Responsibility;
logTA = Logarithm of Total Assets;
ROA = Return on Assets;
M/B Value = Market-to-Book Ratio;
logRD = Logarithm of Research and Development Expenditure;
logPPE = Logarithm of Property, Plant, and Equipment;
log Sales = Logarithm of Sales;
MOM = Momentum.

Table 4 shows that CSR does not have a statistically significant effect on future leverage, with the coefficient on CSR being small and insignificant (Coef. = –0.02, p = 0.719). This finding does not support H2 and suggests that, in the Turkish context, CSR performance does not substantially influence lenders' or creditors' decisions regarding financing terms. The economic interpretation is that financial institutions may place limited weight on CSR when assessing lending decisions, with other firm-specific financial metrics likely dominating the evaluation process.

Among the control variables, ROA has a negative and significant association with leverage (Coef. = –1.057, $p < 0.05$), suggesting that more profitable firms rely less on debt financing. R&D intensity is positively and significantly associated with leverage (Coef. = 2.893, $p < 0.05$), indicating that R&D-oriented firms may depend more on external financing. The momentum variable (MOM) is negatively significant (Coef. = –0.049, $p < 0.05$), implying that firms with higher recent returns tend to use less leverage.

Overall, these results align with Rosyid et al. (2022), who found that CSR disclosure does not always exert a significant positive impact on firm-level financial outcomes, suggesting that contextual and market-specific factors may limit its effectiveness in influencing financing structure.

Table 4: Regression Results: Effect of CSR on Financial Leverage (H2)

Leverage $_{t+1}$	Coef.	St.Err.	t-value	p-value	Sig
CSR	-.020	.056	-0.37	.719	
logTA	-.763	5.492	-0.14	.891	
ROA	-1.057	.610	-1.73	.099	*
M/B Value	.740	.621	1.19	.248	
logRD	2.893	1.421	2.04	.056	*
logPPE	3.204	4.674	0.69	.501	
Beta	-3.188	9.582	-0.33	.743	
log Sales	-4.079	2.481	-1.64	.117	
MOM	-.049	.020	-2.42	.026	**
Board Size	.481	.333	1.45	.164	
Board Independence	.160	.151	1.07	.3	
CEO Duality	-1.424	3.378	-0.42	.678	
Constant	30.148	40.612	0.74	.467	
Mean dependent var	36.141		**SD dependent var**		15.471
R-squared	0.329		**Number of obs**		131
F-test	53.347		**Prob > F**		0.000
Akaike crit. (AIC)	889.769		**Bayesian crit. (BIC)**		924.271

**** p<.01, ** p<.05, * p<.1*

CSR = Corporate Social Responsibility;
logTA = Logarithm of Total Assets;
ROA = Return on Assets;
M/B Value = Market-to-Book Ratio;
logRD = Logarithm of Research and Development Expenditure;
logPPE = Logarithm of Property, Plant, and Equipment;
log Sales = Logarithm of Sales;
MOM = Momentum.

Table 5 presents the results for H3, which examines the interaction between lagged CSR and current financial leverage in explaining subsequent firm value. The coefficient on the interaction term is negative and statistically significant at the 5% level (Coef. = –0.0001, $p < 0.05$), indicating that higher CSR engagement, when combined with higher leverage, is associated with lower firm value. This finding supports H3 in terms of direction, suggesting that CSR initiatives undertaken under high debt conditions may be perceived by investors as less credible or poorly timed, thereby reducing their value-enhancing potential.

From an economic perspective, the negative effect is relatively small in magnitude but meaningful in the given sample context. This outcome aligns with Oduro et al. (2024), who argue that excessive CSR spending when firms face heavy debt burdens can erode shareholder value. Other control variables,

such as firm size and profitability, are statistically insignificant in this model, indicating that the CSR–leverage interaction is the primary driver of the observed effect.

Overall, these results suggest that while CSR may contribute positively to firm value in certain conditions, its benefits can be undermined when paired with high financial leverage, highlighting the importance of aligning CSR strategies with a firm's capital structure.

Table 5: Regression Results: Effect of CSR–Leverage Interaction on Price Volatility on Firm Value (H3)

Firm Value $_{t+1}$	Coef.	St.Err.	t-value	p-value	Sig
L1.CSR*Financial Leverage	**-.0001**	.00004	-2.55	.02	**
log TA	**.131**	.116	1.12	.276	
ROA	**.014**	.038	0.36	.726	
M/B Value	**.065**	.013	5.13	0	***
log RD	**.029**	.073	0.39	.698	
log PPE	**-.130**	.204	-0.63	.534	
Beta1	**.232**	.421	0.55	.588	
log Sales	**-.159**	.117	-1.35	.192	
MOM	**.002**	.001	1.56	.135	
Board Size	**.006**	.012	0.48	.64	
Board Independence	**.006**	.004	1.61	.124	
CEO Duality	**.090**	.082	1.10	.285	
Constant	**2.775**	1.587	1.75	.097	*

Mean dependent var	1.585	**SD dependent var**	0.805
R-squared	0.298	**Number of obs**	117
F-test	99.353	**Prob > F**	0.000
Akaike crit. (AIC)	33.901	**Bayesian crit. (BIC)**	67.047

**** p<.01, ** p<.05, * p<.1*

CSR = Corporate Social Responsibility;
logTA = Logarithm of Total Assets;
ROA = Return on Assets;
M/B Value = Market-to-Book Ratio;
logRD = Logarithm of Research and Development Expenditure;
logPPE = Logarithm of Property, Plant, and Equipment;
log Sales = Logarithm of Sales;
MOM = Momentum.

Table 6 reports the results for H4, which examines the interaction between lagged CSR and current financial leverage in explaining subsequent price volatility. The coefficient on the interaction term is positive but statistically insignificant (Coef. = 0.0004, p = 0.914), indicating that CSR, when combined with leverage, does not have a meaningful effect on short-term firm-specific risk. This finding does not support H4 and suggests that CSR–leverage dynamics are not a key determinant of volatility in the Turkish context.

From an economic perspective, the absence of a significant effect implies that market perceptions of risk are driven more by other factors than by the interaction of CSR engagement and capital structure. This result contrasts with studies such as Lu et al. (2021), which reported volatility-reducing benefits of CSR through enhanced stakeholder trust. In the present model, control variables—aside from Beta, log Sales, and MOM—are largely insignificant, suggesting limited explanatory power of most firm characteristics in predicting volatility.

Overall, the results indicate that while CSR and leverage may influence firm value, their combined effect does not extend to reducing or increasing short-term price volatility in this sample.

Table 6: Regression Results: Effect of CSR–Leverage Interaction on Price Volatility on Price Volatility (H4)

Price Volatility $_{t+1}$	Coef.	St.Err.	t-value	p-value	Sig
L1.CSR*Leverage	.00004	.0004	0.11	.914	
log TA	1.046	2.162	0.48	.634	
ROA	.351	.272	1.29	.214	
M/B Value	-.104	.227	-0.46	.652	
log RD	.589	.761	0.77	.45	
log PPE	-1.18	1.638	-0.72	.481	
Beta	7.473	2.336	3.20	.005	***
log Sales	1.483	1.275	1.16	.261	
MOM	.031	.007	4.41	0	***
Board Size	.018	.048	0.38	.708	
Board Independence	-.219	.038	-5.78	0	***
CEO Duality	-.406	.978	-0.42	.683	
Constant	-.529	16.596	-0.03	.975	

Mean dependent var	30.899	**SD dependent var**	6.116
R-squared	0.590	**Number of obs**	113
F-test	589.684	**Prob > F**	0.000
Akaike crit. (AIC)	515.459	**Bayesian crit. (BIC)**	548.188

*** p<.01, ** p<.05, * p<.1*

CSR = Corporate Social Responsibility;
logTA = Logarithm of Total Assets;
ROA = Return on Assets;
M/B Value = Market-to-Book Ratio;
logRD = Logarithm of Research and Development Expenditure;
logPPE = Logarithm of Property, Plant, and Equipment;
log Sales = Logarithm of Sales;
MOM = Momentum.

Table 7 presents the results for H5, which examines whether current CSR interacts with past leverage to influence firm value. The coefficient on the interaction term is positive but statistically insignificant (Coef. = 0.0001, p = 0.256), indicating no evidence that leverage history meaningfully conditions

market responses to current CSR initiatives. This finding does not support H5 and suggests that investors may focus more on present leverage conditions than on historical debt positions when evaluating CSR activities.

The results imply that the role of leverage history in shaping market reactions to CSR is limited and potentially context-dependent, particularly in relatively stable or low-risk market environments. This aligns with Lu et al. (2021), who note that CSR's valuation effects may be muted when leverage risk is less pronounced. Among the control variables, only the market-to-book ratio shows weak significance at the 10% level, while other firm characteristics exhibit no meaningful association with firm value in this model.

Table 7: Regression Results: Effect of CSR–Leverage Interaction on Firm Value (H5)

Firm Value $_{t+1}$	Coef.	St.Err.	t-value	p-value	Sig
CSR*Leverage	**.0001**	.0001	1.17	.256	
log TA	**-.051**	.079	-0.65	.526	
ROA	**.024**	.033	0.73	.473	
M/B Value	**.055**	.027	2.05	.054	*
log RD	**.004**	.076	0.05	.96	
log PPE	**-.158**	.161	-0.99	.337	
Beta	**.565**	.456	1.24	.23	
log Sales	**-.067**	.101	-0.66	.519	
MOM	**.001**	.002	0.77	.452	
Board Size	**0**	.013	-0.01	.996	
Board Independence	**.008**	.005	1.61	.124	
CEO Duality	**.285**	.221	1.29	.213	
Constant	**4.297**	2.042	2.10	.049	**

Mean dependent var	1.653	**SD dependent var**	0.992
R-squared	0.234	**Number of obs**	131
F-test	15.027	**Prob > F**	0.000
Akaike crit. (AIC)	90.233	**Bayesian crit. (BIC)**	124.735

**** p<.01, ** p<.05, * p<.1*

CSR = Corporate Social Responsibility;
logTA = Logarithm of Total Assets;
ROA = Return on Assets;
M/B Value = Market-to-Book Ratio;
logRD = Logarithm of Research and Development Expenditure;
logPPE = Logarithm of Property, Plant, and Equipment;
log Sales = Logarithm of Sales;
MOM = Momentum.

Table 8 presents the results for H6, which tests whether current CSR interacts with past leverage to influence price volatility. The coefficient on the interaction term is positive but statistically insignificant (Coef. = 0.0004, $p > 0.1$), providing no evidence that CSR acts as a targeted strategy to reduce firm-specific risk following periods of high leverage. This finding does not support H6 and suggests that CSR is not being strategically leveraged to manage return volatility in this context.

The results imply that the absence of a significant moderating effect may reflect differences in market maturity or the volatility characteristics of emerging markets. These contrasts with Albuquerque et al. (2019), who found that CSR engagement, can reduce volatility through enhanced stakeholder relationships. Among the control variables, return on assets (ROA) and momentum (MOM) are both statistically significant, indicating that more profitable firms and those with stronger past stock performance tend to exhibit greater volatility.

Table 8: Regression Results: Effect of CSR–Leverage Interaction on Price Volatility (H6)

Price Volatility $_{t+1}$	Coef.	St.Err.	t-value	p-value	Sig
CSR*Leverage	**.0003**	.0005	0.67	.514	
logTA	**1.053**	2.075	0.51	.618	
ROA	**.792**	.213	3.72	.002	***
M/B Value	**-.055**	.326	-0.17	.867	
logRD	**.972**	.674	1.44	.167	
logPPE	**-1.946**	1.699	-1.15	.267	
Beta	**5.34**	3.921	1.36	.19	
log Sales	**2.027**	1.282	1.58	.131	
MOM	**.023**	.009	2.56	.02	**
Board Size	**-.137**	.109	-1.26	.223	
Board Independence	**-.182**	.046	-3.98	.001	***
CEO Duality	**.325**	1.4	0.23	.819	
Constant	**.521**	14.786	0.04	.972	

Mean dependent var	31.172	**SD dependent var**	6.110
R-squared	0.528	**Number of obs**	124
F-test	248.522	**Prob > F**	0.000
Akaike crit. (AIC)	597.356	**Bayesian crit. (BIC)**	631.200

*** p<.01, ** p<.05, * p<.1*
CSR = Corporate Social Responsibility;
logTA = Logarithm of Total Assets;
ROA = Return on Assets;
M/B Value = Market-to-Book Ratio;
logRD = Logarithm of Research and Development Expenditure;
logPPE = Logarithm of Property, Plant, and Equipment;
log Sales = Logarithm of Sales;
MOM = Momentum.

Overall, the findings indicate that leverage reduces CSR engagement (H1 supported), but CSR does not influence leverage (H2 not supported). The only significant interaction effect is between lagged CSR and current leverage on firm value (H3), and this effect is negative. The remaining interaction hypotheses (H4–H6) are not supported. The results underscore the importance of considering financial constraints when evaluating CSR strategies and suggest that in highly leveraged contexts, CSR activities may not be perceived as value-enhancing by investors. The finding that leverage marginally constrains CSR engagement aligns with Goss and Roberts (2011) and Dewi et al. (2021), who observed that higher debt levels reduce the capacity for socially responsible investment. However, the absence of a significant influence of CSR on leverage differs from Cheng et al. (2014), who documented a negative association in U.S. firms. Similarly, the negative interaction effect of CSR and leverage on firm value is consistent with Oduro et al. (2024), yet our results diverge from Albuquerque et al. (2019), who reported reduced volatility in firms with strong CSR performance. These differences may reflect contextual factors such as market maturity and governance standards in emerging economies.

5. Conclusion

This study explored the dynamic relationship between CSR, financial leverage, firm value, and risk in Turkish firms using panel data and fixed-effects regression models. The results indicate that higher leverage significantly reduces CSR engagement, while CSR does not exert a statistically significant influence on leverage decisions. Furthermore, the interaction between past CSR and current leverage has a negative effect on firm value but no significant impact on stock return volatility. These findings suggest that firms facing higher financial pressure may allocate fewer resources to CSR activities and that the market may not consistently reward CSR initiatives when coupled with high leverage.

The findings are consistent with prior evidence that leverage can constrain CSR engagement (e.g., Goss & Roberts, 2011; Dewi et al., 2021) and that high leverage may limit a firm's ability to invest in socially responsible activities. However, the marginal effect of leverage on CSR in the Turkish context contrasts with the stronger effects reported in developed markets (e.g., Cheng et al., 2014), suggesting that institutional and governance differences may moderate the CSR–capital structure relationship. The negative interaction between CSR and leverage on firm value aligns with studies highlighting the potential costs of overleveraging in socially active firms (e.g., Oduro et al., 2024), while the absence of a significant effect on price volatility diverges from findings in more volatile financial environments (e.g., Albuquerque et al., 2019).

5.1. Implications

From a practical perspective, the findings suggest that managers should align CSR initiatives with their firm's capital structure to optimize value creation while preserving stakeholder confidence. In highly leveraged contexts, CSR activities may be constrained due to reduced financial flexibility, limiting firms' ability to invest in socially responsible initiatives (Goss & Roberts, 2011; Dewi et al., 2021). To mitigate this constraint, managers could prioritize cost-effective CSR programs that deliver measurable stakeholder benefits without placing additional strain on financial resources. Sector-specific strategies may also be warranted, as industries with higher operational risks or regulatory oversight may face different CSR–leverage trade-offs.

For policymakers and regulators in emerging markets, the results highlight the potential value of targeted interventions to support CSR engagement in leveraged firms. This could include fiscal incentives such as tax credits, subsidized financing, or grants for verifiable CSR projects, as well as the promotion of innovative financing mechanisms like green or social bonds. Furthermore, strengthening CSR reporting standards can enhance transparency and comparability, allowing stakeholders to distinguish between substantive initiatives and symbolic compliance (Cheng et al., 2014; Oduro et al., 2024).

From an investor standpoint, the findings indicate that CSR–leverage interactions should be incorporated into risk–return assessments, particularly in markets with higher volatility and evolving governance standards. Investors seeking to integrate environmental, social, and governance (ESG) considerations into portfolio construction may need to adjust screening criteria for highly leveraged firms, accounting for the potential constraints on CSR investments.

At a broader societal level, aligning CSR activities with capital structure decisions can contribute to long-term sustainable development objectives, including those outlined in the United Nations Sustainable Development Goals (SDGs). Effective CSR in financially constrained environments can foster community engagement, strengthen supply chain resilience, and enhance social capital, ultimately benefiting both firms and the wider economy.

5.2. Limitations and Recommendations for Future Research

This study has several limitations that provide directions for further research. First, CSR is measured using aggregate ESG scores. While this approach is consistent with prior literature (e.g., Fatemi et al., 2015; Lu et al., 2021), it may mask the heterogeneous effects of environmental, social, and governance components. Future research could disaggregate these dimensions to explore their distinct influences on financial leverage, firm value, and risk.

Second, the analysis is limited to publicly listed firms in Turkey. Similar to Sheikh (2019), the country-specific context may limit the applicability of findings to other markets. Comparative studies involving developed and developing economies could clarify whether the observed relationships are driven by institutional, cultural, or market-specific factors.

Third, although lagged variables and fixed effects are used to mitigate endogeneity, the approach may not fully eliminate bias, as highlighted by Bae et al. (2019). Future studies could adopt alternative econometric techniques, such as instrumental variable regression, dynamic panel GMM, or propensity score matching, to strengthen causal inference. Nevertheless, these findings should be considered with caution, as the relationships identified in this study may be influenced by unobserved firm-specific or market-level factors that were not directly measured; therefore, the results should be interpreted as associations rather than definitive causal effects.

Finally, the sample period covers years with notable macroeconomic and policy fluctuations, which may have influenced both CSR practices and capital structure decisions. As Guo et al. (2020) suggest, exploring these relationships across different economic cycles or during specific crisis periods could reveal whether CSR's impact on leverage and firm outcomes is stable over time.

By addressing these limitations, future research could improve the robustness and external validity of CSR–leverage studies, offering deeper theoretical and practical insights.

References

Albuquerque, R., Koskinen, Y., & Zhang, C. (2019). Corporate social responsibility and firm risk: Theory and empirical evidence. Management Science, 65(10), 4451–4469. https://doi.org/10.1287/mnsc.2018.3043

Bae, K.-H., El Ghoul, S., Guedhami, O., Kwok, C. C. Y., & Zheng, Y. (2019). Does corporate social responsibility reduce the costs of high leverage? Evidence from capital structure and product market interactions. Journal of Banking & Finance, 100, 135–150. https://doi.org/10.1016/j.jbankfin.2018.11.0057

Dewi, P. P. R. A., Sudana, P., Badera, D. N., & Rasmini, N. K. (2021). *The effect of CSR disclosure on firm value with profitability and leverage as moderators*. Indonesian Journal of Sustainability Accounting and Management, 5(1). https://doi.org/10.28992/ijsam.v5i1.325

Do, T. K., Huang, H. H., & Lo, T.-C. (2023). Does corporate social responsibility affect leverage adjustments? Review of Quantitative Finance and Accounting, 60. https://doi.org/10.1007/s11156.023.01141-8

Falck, O., &Heblich, S. (2007). *Corporate social responsibility: Doing well by doing good*. Business Horizons, 50(3), 247–254. https://doi.org/10.1016/j.bushor.2006.12.002

Fatemi, A., Fooladi, I., & Tehranian, H. (2015). Valuation effects of corporate social responsibility. Journal of Banking & Finance, 59. https://doi.org/10.1016/j.jbankfin.2015.04.028

Farah, T., Li, J., Li, Z., & Shamsuddin, A. (2021). The non-linear effect of CSR on firms' systematic risk: International evidence. Journal of International Financial Markets, Institutions & Money, 71, 101388. https://doi.org/10.1016/j.intfin.2021.101288

Freeman, R. E. (1984*). Strategic management: A stakeholder approach*. Boston, MA: Pitman.

Friedman, M. (1970). *The Social Responsibility of Business is to Increase its Profits*. The New York Times Magazine, September 13, 1970.

Elbardan, H., Uyar, A., Kuzey, C., & Karaman, A. S. (2023). CSR reporting, assurance, and firm value and risk: The moderating effects of CSR committees and executive compensation. Journal of International Accounting, Auditing and Taxation, 53, 100579. https://doi.org/10.1016/j.intaccaudtax.2023.100579

Goss, A., & Roberts, G. S. (2011). The impact of corporate social responsibility on the cost of bank loans. Journal of Banking & Finance, 35(7), 1794–1810. https://doi.org/10.1016/j.jbankfin.2010.12.002

Guo, Z., Hou, S., & Li, Q. (2020). Corporate social responsibility and firm value: The moderating effects of financial flexibility and R&D investment. Sustainability, 12, 8452. https://doi.org/10.3390/su12208452

Ho, K.-C., Wang, Q., Sun, K., & Wang, L. F. S. (2021). How does corporate social responsibility affect firm leverage? Managerial Finance, 51 (10). https://doi.org/10.1108/K-10-2020-0708

Hsu, S.-C., Wu, K.-T., Wang, Q., & Chang, Y. (2023). Is capital structure associated with corporate social responsibility? International Journal of Corporate Social Responsibility, 8(6). https://doi.org/10.1186/s40991.023.00081-9

Jensen, M. C. & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency

costs and ownership structure. Journal of Financial Economics, 3(4), 305-360. https://doi.org/10.1016/0304-405X(76)90026-X

Jones, T. M. (1995). *Instrumentalstakeholder theory: A synthesis of ethics and economics*. Academy of Management Review, 20(2), 404-437,https://doi.org/10.5465/amr.1995.950.7312924

Lee, J., & Koh, K. R. (2024). ESG performance and firm risk in the U.S. financial firms. Review of Pacific Basin Financial Markets and Policies, 42, https://doi.org/10.1002/rfe.1208

Li, H., Zhang, X.& Zhao, Y. (2022). ESG and firm's default risk. Finance Research Letters, 47, 102713. https://doi.org/10.1016/j.frl.2022.102713

Lu, H., Oh, W.-Y., Kleffner, A., & Chang, Y. K. (2021). How do investors value corporate social responsibility? Market valuation and the firm specific contexts. Journal of Business Research, 125. https://doi.org/10.1016/j.jbusres.2020.11.063

Mahmood, A. N., Arslan, H. M., Younas, Z. I., Komal, B., Ali, K. & Muhammad M. (2023). Understanding the dynamics of capital structure, corporate governance, and corporate social responsibility in high – and low-leveraged US and Chinese firms. Environmental Science and Pollution Research, 30, 46201–46221. https://doi.org/10.1007/s11356.022.24843-3

Mhiri, C., Ajina, A., Hussain, N., Mnzava, B., & Wieczorek-Kosmala, M. (2024). Corporate social responsibility and capital structure: Moderating effect of culture. Corporate Social Responsibility and Environmental Management, 32. https://doi.org/10.1002/csr.2957

Nirino, N., Battisti, E., Ferraris, A., Dell'Atti, S., &Briamonte, M. F. (2022). How and when corporate social performance reduces firm risk? The moderating role of corporate governance. Corporate Social Responsibility and Environmental Management, 29, 1995–2010. https://doi.org/10.1002/csr.2296

Oduro, S., Umar, R. M., De Massis, A., &Haylemariam, L. G. (2024). Corporate social responsibility and family firm performance: A meta-analytic review. Corporate Social Responsibility and Environmental Management. Advance online publication. https://doi.org/10.1002/csr.3004

Ogachi, D., & Zoltan, Z. (2020). Corporate social responsibility and firm value protection. International Journal of Financial Studies, 8(72). https://doi.org/10.3390/ijfs8040072

Rosyid, M. F., Saraswati, E., & Ghofar, A. (2022). Firm value: CSR disclosure, risk management and good corporate governance dimensions. Jurnal Riset Akuntansi dan Keuangan, 12(1). https://doi.org/10.22219/jrak.v11i3.20367

Shahrour, M. H., Girerd-Potin, I., &Taramsaoco, O. (2021). Corporate social responsibility and firm default risk in the Eurozone: A market-based approach. Managerial Finance, 47(7). https://doi.org/10.1108/SRJ-02-2020-0059

Sheikh, S. (2019). Corporate social responsibility and firm leverage: The impact of market competition. Research in International Business and Finance, 48. https://doi.org/10.1016/j.ribaf.2018.11.002

Spence, M. (1973). *Job market signaling*. Quarterly Journal of Economics, 87(3), 355-374. https://doi.org/10.2307/1882010

Wang, Q., Chen, H., Xue, Y., & Liang, H. (2022). How corporate social responsibility affects firm performance: The inverted-U shape contingent on founder CEO. Sustainability, 14. https://doi.org/10.3390/su141811340

Wang, W., & Yang, J. (2024). The inverted U-shaped relationship between corporate social responsibility and default risk: The role of financing constraints. Heliyon, 10(7), e34304. https://doi.org/10.1016/j.heliyon.2024.e34304

Wu, C., Xiong, X., Gao, Y., & Meng, J. G. (2024). Corporate social responsibility dimensions and stock price crash risk: Evidence from the management's self-interest perspective. Pacific-Basin Finance Journal, 83, 102535. https://doi.org/10.1016/j.pacfin.2023.102235