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Corporate Social Responsibility Disclosure and Bankruptcy Financial Risks: Moderating Role of Corporate Governance Index

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Abstract: This study explores the influence of corporate social responsibility (CSR) disclosure on the financial risk of bankruptcy, with a focus on the moderating impact of the corporate governance index in the context of companies listed on the Saudi Arabia stock exchange. Employing a quantitative methodology and a longitudinal research design, data were collected from 115 listed firms over the period 2011 to 2022. Panel data analysis revealed that CSR disclosure does not exert a significant impact on the risk of financial distress. Furthermore, the corporate governance index was found to have a negative and statistically significant effect on the financial risk of bankruptcy. The study also uncovered that the corporate governance index plays a negative and significant moderating role between CSR disclosure and the financial risk of bankruptcy in Saudi Arabian listed companies. The results underscore the critical role of corporate governance in steering firms away from the precipice of bankruptcy. Specifically, the prevalence of institutional and managerial ownership within firms, characterized by their long-term perspectives, serves as an incentive for increased voluntary CSR disclosures. This strategic approach aims to enhance shareholder trust to the maximum extent possible, serving as a proactive measure against financial distress. Consequently, our research contributes by highlighting that governance practices effectively mitigate the risk of financial disasters, achieving a delicate balance between CSR initiatives and financial prudence.

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1. Introduction

In the prevailing challenging economic milieu, the financial risk of bankruptcy pertains to the prospect of profound and unanticipated financial disruptions capable of markedly compromising the stability of a firm, potentially culminating in insolvency (Sari et al., 2022). Consequently, managing the financial risk associated with insolvency is imperative for companies as it safeguards their wealth (Sardo et al., 2022). Effectively mitigating such risks ensures adaptability, fortifies financial confidence, and safeguards the long-term viability of the organization in volatile monetary environments (Sardo et al., 2022). The disclosure of CSR holds significance in mitigating the financial risk of bankruptcy by fostering resilience and engaging in proactive risk management within corporate entities (Thao & Le, 2019). Embracing CSR disclosure promotes community engagement and mitigates environmental vulnerabilities, thereby minimizing the risk of reputational damage and regulatory scrutiny during crises (Thao & Le, 2019). Furthermore, CSR disclosure that places emphasis on stakeholder well-being establishes robust social capital and support networks, thereby assisting firms in navigating and recovering from financial disasters (Lu et al., 2022). Through the integration of CSR disclosure into corporate strategies, organizations can bolster their resilience, cultivate stakeholder trust, and fortify defences against potential financial disruptions (Xu & Lee, 2019). A comprehensive inquiry delves into the impact of CSR disclosure on risk (Servaes & Tamayo, 2013). Furthermore, the Resource-Based View (RBV) contends that organizations refining their CSR disclosure can mitigate their risks (Boubaker et al., 2020). Companies experiencing financial distress may enhance their financing prospects through the implementation of CSR initiatives, thereby augmenting their appeal to investors. The heightened focus on CSR serves as a lifeline for such entities, potentially diminishing the duration of their bankruptcy (Singhal & Zhu, 2013).

Nevertheless, the omission of CSR disclosure may amplify the financial risk of bankruptcy for firms, potentially resulting in diminished stakeholder trust, heightened regulatory scrutiny, and exposure to potential legal liabilities. Insufficient transparency concerning social and environmental aspects may engender investor distrust, exacerbating financial vulnerabilities (Tarighi et al., 2022). To achieve this objective, corporate governance serves as a crucial indicator in guaranteeing the revelation of CSR activities as a measure to mitigate the financial risk of bankruptcy (Tarighi et al., 2022). A sound governance framework within the ownership structure establishes accountability, transparency, and ethical standards, compelling companies to disclose comprehensive CSR information (Dwekat et al., 2022). Through the imposition of explicit reporting structures and oversight mechanisms, governance structures advocate for responsible disclosure practices, thereby enhancing stakeholder trust, mitigating information asymmetry, and ultimately bolstering resilience against financial disasters (Moradi et al., 2012). In accordance with agency theory, the ownership structure within corporate governance resolves conflicts by overseeing firm actions, potentially averting bankruptcy amidst economic crises (Shleifer & Vishny, 1997). The prevalence of owners with long-term perspectives may impede opportunistic managerial behaviour, thereby potentially safeguarding companies from the risks of insolvency (Widhiadnyana & Ratnadi, 2019). Moreover, heightened ownership levels could incentivize managers to provide greater voluntary disclosures with the objective of upholding shareholder trust (El-Gazzar, 1998). This could result in enhanced CSR disclosure, thereby minimizing the financial risk of bankruptcy.

Empirically, the association between CSR disclosure and bankruptcy financial risk yields varied results in research. Some studies support the idea that CSR disclosure mitigates bankruptcy risk through enhanced stakeholder trust and signalling responsible management (Dwekat et al., 2022; Tarighi et al., 2022), contradictory findings imply inconclusive results. Cheng et al. (2014) suggest that comprehensive CSR disclosure may obscure financial weaknesses, divert attention from actual risk factors, and potentially worsen the risk of financial disasters. Studies on the link between ownership structure in governance and bankruptcy risk yield conflicting outcomes; some indicate reduced risk with higher ownership concentration aligning managerial interests with shareholders, while contradictory findings persist (Halim et al., 2023). Duong et al. (2023) concentrated ownership may worsen risk by enabling dominant shareholders to pursue self-serving objectives, entrench managerial decisions, and diminish firm resilience. Inconsistencies in previous studies suggest that the relationship between CSR disclosure and bankruptcy financial risk varies in different contexts, influenced by governance mechanisms, diverse motivations of controlling shareholders, and contextual factors. A deeper exploration is necessary to accurately comprehend this multifaceted relationship. These mechanisms notably influence CSR practices by improving firm transparency through enhanced voluntary CSR reporting (Harjoto & Jo, 2011). Numerous other scholarly inquiries have posited that the influence of CSR disclosure may be elucidated through the inclusion of a moderating variable, such as organizational control, akin to corporate governance (Asiaei et al., 2023; Neves et al., 2023).

Conversely, prior research has predominantly concentrated on different nations (Duong et al., 2023; Naumann et al., 2022) with limited emphasis on companies listed in Saudi Arabia. Investigation into the association between CSR and risk is constrained within the context of Saudi Arabia as by Shen et al. (2020), and Naumann et al. (2022). Significantly, in the Saudi Arabian context, regulatory bodies do not mandate CSR disclosure, which may potentially diminish investor and analyst interest in voluntary CSR information (Salehi et al., 2017). Nevertheless, CSR functions as a crucial instrument for companies, regardless of their size, to collectively address economic, social, and environmental objectives. In the context of Saudi Arabia, CSR has garnered significance, becoming intricately connected with discussions on globalization, competitiveness, and sustainability (Kouaib & Amara, 2022). Prominent entities like Saudi Aramco and SABIC showcase CSR's positive effects on consumer confidence, community development, talent management, and financial performance. In Saudi Arabia, CSR disclosure is primarily observed in indexed firms, regulated by the Capital Market Authority through the Saudi Corporate Governance Regulations (SCGRs), which outline essential CSR practices for these companies (Kouaib & Amara, 2022).

Incorporating resource-based, legitimacy, and stakeholders' theories, this study addresses previous research gaps by investigating the influence of CSR disclosure on bankruptcy financial risk, considering the moderating role of corporate governance within Saudi Arabia's listed companies. Utilizing a sample of 115 Saudi-listed firms, the findings indicate that CSR disclosure lacks a significant impact on financial resources but may serve as a protective measure in economic crises or be manipulated for public trust. The study underscores the crucial role of robust governance practices, suggesting that strong corporate governance mitigates bankruptcy financial risk by safeguarding against potential financial risks associated with extensive CSR disclosure. Furthermore, financial ratios and economic indicators, including leverage, inflation rate, GDP, and firm size, underscore the connection between financial sustainability and socio-economic conditions. These insights underscore the criticality of governance structures in balancing CSR initiatives with financial prudence, ensuring that CSR disclosures contribute positively without exposing companies to undue financial risks.

2. Literature Review and Hypotheses Development

2.1 Corporate Social Responsibility Disclosure and Financial Disaster Risk

Corporate social responsibility disclosure (CSRD) encompasses a company's self-regulated initiatives aimed at positively contributing to social, environmental, and ethical concerns, extending beyond legal obligations and aspiring to achieve a sustainable impact. The perceived potential of CSRD as a risk mitigation tool during bankruptcy has garnered attention, ostensibly assisting firms in navigating financial crises (Peloza, 2006). Kharlanov et al. (2022) posits that a robust track record of Corporate Social Responsibility (CSR) involvement may aid companies in surmounting financial challenges. Through the disclosure of CSR activities, firms seek to legitimize their operations and garner societal esteem, potentially alleviating culpability amid financial crises (Sakawa & Watanabel, 2020). Nevertheless, uncertainties stemming from investors and lenders, influenced by economic, social, and cultural factors, may exacerbate financial challenges for companies with comprehensive CSR disclosure (Salehi et al., 2019). The nuanced association between CSR and bankruptcy risk lacks unanimity across varied markets, influenced by disparate economic conditions, cultural norms, and regulatory frameworks (Huang, 2013). Numerous scholarly works underscore the potential of CSR to diminish business risks, cultivate stronger relationships with bondholders, enhance resource efficiency, and mitigate costs associated with informally careless conduct (Attig et al., 2013). Stakeholder theory underscores corporations' accountability to investors in relation to financial performance, whereas legitimacy theory posits that CSR disclosure seeks social support, maintaining legitimacy within societies (Salehi et al., 2017).

The critical inquiry emerges: can CSR function as a tool to mitigate insolvency amidst financial disasters? CSR disclosure ostensibly mitigates the risk of financial distress by reducing the likelihood of insolvency (Lu, 2016). Furthermore, CSR disclosure enhances companies' access to financial capital, reducing costs of equity and debt capital (Huang, 2013). This mechanism holds particular relevance during periods of economic volatility attributable to factors such as sanctions, wherein CSR may provide a measure of relative control (Albuquerque et al., 2019). Nevertheless, in developing nations contending with pronounced economic challenges, the relevance of CSR to investors and creditors is indeterminate. Cultural priorities, where familial support supersedes broader societal assistance, shape perceptions of CSR (Huang, 2013). Observations across numerous developing countries reveal varying levels of CSR engagement in comparison to Western nations (Huang, 2013). These disparities underscore the distinctive nuances of CSR in developing economies. In contrast to developed markets characterized by regulated and technical CSR disclosures, emerging economies display voluntary and descriptive CSR reporting, which significantly shapes investors' perceptions (Salehi et al., 2019). Financial constraints and cultural priorities prevalent in these markets frequently result in a diminished emphasis on CSR, wherein major shareholders may at times resist costly CSR activities, particularly during economic crises (Sakawa & Watanabel, 2020). In Arabian countries, stringent economic sanctions have heightened financial pressures, motivating managers to manipulate financial metrics to attract investors (Salehi et al., 2019). In spite of the potential advantages of CSRD, its broad dissemination may not be well-received by investors and creditors in economically distressed nations such as Saudi Arabia. Elevated CSR disclosure may even impede financing opportunities, as stakeholders exhibit diminished interest in such disclosures (Salehi et al., 2019). Cultural and economic factors in the Saudi Arabian market imply that companies with comprehensive CSR disclosure may encounter challenges in securing financing and exhibit an increased susceptibility to bankruptcy, given that CSR information has limited appeal to investors. Therefore, derived from the preceding discussion, the study posits the following research hypotheses:

H1: Corporate social responsibility disclosure significantly influence to financial disaster risk.

2.2 Corporate Governance and Financial Disaster Risk

Corporate governance refers to the set of principles and procedures governing the control and direction of businesses. It ensures transparency, accountability, and ethical decision-making within organizations, aiming to enhance long-term sustainability (Nirino et al., 2022). The ownership structure in corporate governance assumes a pivotal role by defining power dynamics and shaping decision-making processes within organizations. Within the realm of corporate governance, ownership structure encompasses both external and internal dimensions, with institutional ownership serving as a prominent external mechanism. Institutional ownership specifically refers to the quantity of shares held by entities such as banks, investment firms, and significant investors in the outstanding shares of a company (Hassan & Ahmed, 2012). The involvement of institutional owners in corporate governance is complex. According to agency theory, institutional ownership can alleviate agency conflicts by actively monitoring managerial actions to safeguard the interests of shareholders (Widhiadnyana & Ratnadi, 2019). Such supervision is expected to fortify firms by fostering opportunities for development and mitigating agency problems (Sakawa & Watanabel, 2020). Research underscores that managerial ownership tends to adversely affect the risk of financial distress (Widhiadnyana & Ratnadi, 2019). Their supervision aids in mitigating agency indicators and irregularities, enabling managers to invest in profitable long-term initiatives and aligning the organization's interests with those of shareholders (McConnell & Servaes, 1990). Studies have indicated that institutional investors with a longer-term perspective have a positive impact on corporate social responsibility, which can influence performance, in contrast to short-term investors who prioritize quick returns (Waheed & Malik, 2019). These findings indicate that the active participation of institutional investors is crucial in facilitating corporate social responsibility, potentially resulting in a reduction in the financial risk of bankruptcy (Tarighi et al., 2022).

Managerial ownership in corporate governance pertains to the quantity of company shares held by individuals occupying top managerial positions (Salehi et al., 2022). This ownership stake aligns the interests of executives with those of shareholders, theoretically incentivizing managerial actions that prioritize long-term sustainable growth and mitigate risk (Chen et al., 2023). Managerial ownership constitutes a pivotal facet of corporate governance, potentially contributing to the enhancement of corporate social responsibility (Su et al., 2022). Empirical studies examining the relationship between managerial ownership and risk have produced diverse results. Certain research indicates that increased managerial ownership aligns the interests of managers with those of shareholders, fostering prudent decision-making and diminishing the probability of excessive risk-taking that may lead to financial disaster (Chen et al., 2023). When managers possess significant ownership stakes, their inclination is to prioritize the long-term well-being of the company to safeguard their investments, thereby potentially mitigating the risk of disasters (Chen et al., 2023). Subsequent studies have identified a significant correlation between managerial ownership and risk (Mateev et al., 2023). Consequently, the study posits the following research hypothesis.

H2: Corporate governance index significantly influences to financial disaster risk.

3. Moderating Role of Corporate Governance Index

Prior studies have demonstrated that the relationship among CSRD, corporate governance index, and bankruptcy financial risk is inconclusive, indicating a necessity for a moderating variable in their relationships. In this context, governance assumes a crucial role in augmenting CSRD to alleviate disaster risk. This alignment ensures that disaster risk management becomes an integral component of a corporation's ethical and strategic agenda, fostering resilience and long-term sustainability (Moradi et al., 2012) within the realm of corporate governance. Within the domain of corporate governance, the ownership structure, particularly institutional owners, emerges as a crucial stakeholder in assessing risk and return. These entities may view a company's social activities as a strategy to mitigate potential risks, particularly if the recognition of environmental and social initiatives results in decreased stock price volatility (Petersen & Vredenburg, 2009). In contrast to individual shareholders, institutional investors, who possess significant voting power and benefit from asymmetric information advantages, actively participate in critical organizational decisions (Brickley et al., 1988). Furthermore, due to their substantial shareholdings and limited capacity to quickly divest their shares, institutional owners exhibit a heightened interest in the long-term strategic decisions of a company, aligning more closely with the overall goals of the firm (Oh et al., 2011). In accordance with the principles of good management theory (Graves & Waddock, 1994), effective managerial practices such as CSR disclosure are likely to improve a firm's long-term performance, a viewpoint that institutional shareholders are inclined to support (Oh et al., 2011). Institutional investors, encompassing entities such as insurance companies, pension funds, securities firms, and banks, exhibit marked information asymmetry. Extensive disclosure of corporate social activities serves as a credible signal, demonstrating the firm's trustworthiness and ethical commitment to society (Oh et al., 2011). Subsequent research elucidates the exertion of influence by institutional owners on corporations to enhance their performance in social responsibility (Dyck et al., 2019). Institutional owners aim to not only influence other significant shareholders to prioritize CSR disclosure but also to induce stakeholders to exert pressure on managers for the disclosure of CSR information. Additionally, managerial ownership, when strategically aligned with CSR, has the potential to mitigate the risk of disasters (Cho & Ryu, 2022). Increased managerial ownership serves as an incentive for responsible decision-making, aligning managerial interests with CSR goals (Cho & Ryu, 2022). Managers holding significant ownership stakes are motivated to prioritize sustainable practices, community well-being, and risk mitigation, thereby incorporating disaster risk management into their CSR strategies (Tarighi et al., 2022). Previous studies in corporate governance have demonstrated the significance of managerial ownership and institutional ownership in enhancing CSRD and mitigating financial disaster risk. As a result, the study proposes the following research hypotheses:

H3: Corporate governance index significantly moderates between CSRD and bankruptcy financial risk of listed companies in Saudi Arabia.

Derived from the preceding discourse, the study establishes the research framework depicted in Figure 1.

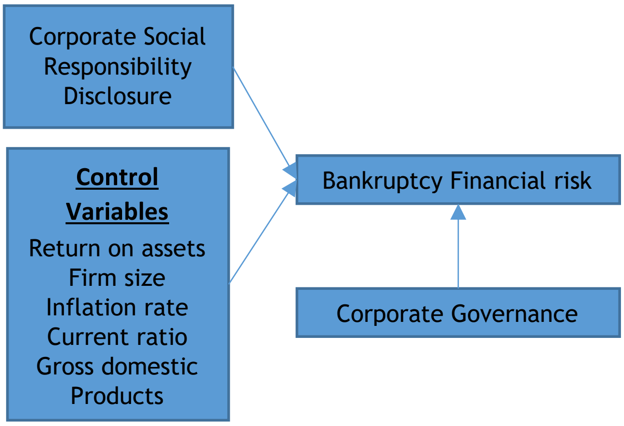

Figure.1: Research Framework.

4. Research Methodology and Econometric Model

The study investigates the moderating role of Corporate Governance Index (CGI) in the relationship between Corporate Social Responsibility Disclosure (CSRD) and Bankruptcy Financial Risk (FDR). Using a quantitative research approach, data was gathered from annual reports of 115 listed firms on the Saudi Arabia Stock Exchange from 2011 to 2022. Logistic regression with Ordinary Least Squares (OLS) was utilized, employing a longitudinal research design to examine causal relationships and trends over time. This design provides a comprehensive understanding of technology's impact on academic outcomes (Hopwood et al., 2022). Furthermore, the researcher adopted an explanatory research approach. Through the utilization of explanatory research, the objective is not merely to ascertain correlations but to thoroughly investigate the underlying mechanisms that characterize these relationships (Sari et al., 2023).

The study seeks to examine the moderating influence of governance on the relationship between corporate social responsibility disclosure and bankruptcy financial risk. To accomplish this objective, the researcher has devised three econometric models, delineated as follows.

$FDR = \beta_0 + \beta_1 CSRD + \beta_2 GDP + \beta_3 IR + \beta_4 ROA + \beta_5 CR + \beta_6 lev + \beta_7 FS + \varepsilon_{i,t.}$ **(M-1)**

$FDR = \beta_0 + \beta_1 CG + \beta 2\, GDP + \beta_3 IR + \beta_4 ROA + \beta_5 CR + \beta_6 leverage + \beta_7 FS + \varepsilon_{i,t.}$ **(M-2)**

$FDR = \beta_0 + \beta_1 CSRD + \beta_2 CG + \beta_3 CSRD^{*} CG + \beta_4 GDP + \beta_5 IR + \beta_6 ROA + \beta_7 CR + \beta_8 leve + \beta_9 FS + \varepsilon_{i,t.}$ **M-3)**

Where

FDR pertains to bankruptcy financial risk, CSRD signifies corporate social responsibility, GDP denotes gross domestic product, ROA represents return on assets, CR signifies current ratio, LEV refers to leverage, FS denotes firm size, CG represents corporate governance, and IR signifies inflation rate.

Table 1: Measurement of Variables.

Construct	Measurement	Source
	Independent variable	
CSRD	If the firm's disclosure the CSR then equal to 1 and nod disclosure equal to 1 in the time-1.	(Gao et al., 2017; Michelon et al., 2013)
	Moderating Variables	
	Corporate Governance Index	
Institutional ownership	Measured by dummy variable where 1 is equal to institutional shareholding is above 5%, or below is 0 otherwise.	(Wang et al., 2020)
Managerial ownership	The shares hold by the director of the total shares	(Wang et al., 2020)
	Control Variables	
Leverage	Ration of total debt to total assets	(Wang et al., 2020)
Firm Size	Total sales log	(Wang et al., 2020)
Return on assets	Earning before tax/Total assets	(Wang et al., 2020)
Current Ratio	Current assets/total liabilities	(Salehi et al., 2018a)
Gross domestic products	Final goods and services values formed during the period	(Ifionu & Ibe, 2015)
Inflation rate	Annual interest rate	(Ifionu & Ibe, 2015)
	Dependent Variable	
Bankruptcy financial risk	Z less than 1.2 shows complete bankruptcy which represents toxic zone. State of between bankruptcy and non-bankruptcy which represent (grey zone). Z green 2.29 show perfect situation which represents (green zone).	(Karamzadeh, 2013)

5. Data Analysis and Empirical Findings

5.1 Descriptive Results

Table 2 presents the predicted values and descriptive statistics for the sampled Saudi Arabian listed firms in the study. On average, these firms exhibit a moderate level of CSRD at 23.1%, reflecting significant variability in disclosure practices. Informational opacity (IO) is notable, with a mean of 18%, indicating diverse levels of transparency among firms. MO is relatively low at 3.8%, with substantial diversity across firms. The economic landscape, as indicated by GDP, ranges from 665 to 1108.21, representing a moderate spectrum. Inflation rates (IR) vary between 13.463% and 34.576%, impacting the operational context of these firms. Financial performance, measured by ROA, averages at 5.61%, exhibiting considerable variance. Liquidity, represented by the CR, has an average of 1.78, signifying diverse liquidity positions. Leverage (Lever) at 37.467 indicates an average debt level with varied capital structures. Firm size (FS) averages at 6.4523, demonstrating moderate diversity in company sizes. The detailed results are outlined in Table 2.

Table 2: Descriptive Statistics.

Variables	CSRD	IO	MO	GDP	IR	ROA	CR	Lever	FS
Mean	0.231	0.18	0.038	0.18	18.69	0.056	1.782	37.467	6.452
SD	0.123	0.245	0.089	0.234	10.371	0.099	1.092	0.264	0.693
Minimum	0.025641	0	0	665	13.463	−0.537	0.345	0.234	5.589
Maximum	0.666	0.981	0.516	1108.21	34.57	0.8052	9.459	85.34	9.35

Note: CSRD-corporate social responsibility disclosure, CG-corporate governance, GDP-gross domestic product, IR-inflation rate, ROA-return on assets, CR-current ratio, LEV-leverage, FS-Firm size

5.2 Diagnostics Test

Diagnostic tests were conducted prior to hypothesis testing in the research. Initially, the researcher assessed the normality of the data using the Jarque-Bera test, with a recommended threshold value exceeding 0.05 (Salehi et al., 2018b). The test results are presented in the table, indicating that all values surpass the recommended thresholds. Additionally, the multicollinearity of the model was assessed using the Variance Inflation Factor (VIF), where the recommended threshold is typically below 5 or 10 (Thompson et al., 2017) The examination reveals the absence of multicollinearity concerns, as evidenced by the independent variables' VIF values being less than 0.5. The detailed outcomes are presented in Table 3.

Table.3: Normality and Multicollinearity Test.

Independent variables	Normality Test	VIF
CSRD	0.1531	1.223
CGI	0.0464	1.312
GDP	0.0352	1.634
IR	0.2139	1.894
ROA	0.1534	1.612
CR	0.3623	1.323
LEV	0.1645	1.432
Size	0.5812	1.612

Following a scrutiny of multicollinearity among the variables, subsequent investigators administered a Partial F-Test. This examination seeks to contrast the Sum of Squares Error (SSE) between full and reduced models, gauging whether the exclusion of a term significantly affects the model's fit or predictive efficacy (Lindgren et al., 2018). Incorporating the moderating variable into the model, the results of the partial F-test reveal an R-square of 0.582 and a residual standard error (RSE) of 1.621. In contrast, the reduced model, excluding the moderation variable, exhibits an R-square of 0.5408 and an RSE of 1.623. Consequently, given the enhanced predictive capacity of the full model with the moderating variable and the marginally lower RSE compared to the reduced model, we infer that the full model aligns better with the objectives of this study. Additionally, the researchers conducted tests to assess endogeneity, a condition characterized by error terms originating within the model while presuming that explanatory variables are exogenous, influenced by external factors. To test endogeneity, the researcher employed two-stage least squares using instrumental variables (Zimon et al., 2021) in instances where the recommended threshold is below 0.05, indicating the presence of endogeneity, the test results in Table 4 demonstrate values exceeding 0.05, signifying that the variables lack dynamic characteristics. Furthermore, the researcher assessed the stationarity of the data using the Augmented Dickey-Fuller (ADF) test, where the recommended threshold for a stationary test is less than 0.05 (Moradi et al., 2021). The results of the ADF test indicate p-values below 0.05, affirming the stationary nature of the data. This observation implies improved regression efficiency and heightened precision in the study's outcomes. The results of these unit root tests are detailed in Table 4.

Table 4: Stationary Test.

Variable	Unit Root	
	Statistic	**P Value**
FDR	41.64	0.000
CSRD	41.27	0.000
CGI	22.19	0.000
GDP	43.13	0.000
IR	62.33	0.000
ROA	61.22	0.000
CR	57.33	0.000
LEV	22.24	0.000
Size	25.33	0.000
	R Square Without interaction	**RSE Before interaction**
	0.5408	1.623
	R Square With interaction	**RSE with interaction**
	0.582	1.621
	P values	
Endogeneity	0.892	

Note: "*** 99% confidence level, ** 95% confidence level, * 90% confidence level".

6. Empirical Findings Discussion

The empirical analysis was conducted through three models. The initial model empirically examined the impact of CSRD on bankruptcy FDR. The second model assessed the influence of the CGI on CSRD. In the third model, the moderating effect of CGI on the relationship between CSRD and FDR among Saudi Arabia Stock Exchange listed firms was examined. The predictive relevance of these three models was evaluated using McFadden's predicted R2 to assess the logistic regression (Salehi et al., 2018b). With respective values of 0.57, 0.59, and 0.621 for the first, second, and third models, surpassing the 50 percent threshold, it is evident that our models exhibit robust predictive capability. The positive and significant effect observed in the impact of CSRD on FDR aligns with the stated hypothesis 1 and is consistent with previous studies (Boubaker et al., 2020) in the US market. This association indicates that companies disclosing a higher degree of social responsibility information may encounter challenges in securing essential financial resources, potentially culminating in bankruptcy—a departure from our initial anticipations. A plausible explanation for this phenomenon could be the distinctive cultural and economic milieu of the Saudi Arabian market, which may contribute to such a pattern. In the prevailing economic circumstances, it is plausible that CSRD may not significantly attract investors. Furthermore, there exists evidence suggesting that managers in Saudi Arabia might leverage CSR disclosures as a means to manipulate public trust for personal gains, particularly through earnings management (Salehi et al., 2019). The relatively restricted emphasis on CSRD within Asian cultures can be attributed, at least in part, to the impact of cultural and lifestyle factors (Huang, 2013). Developing nations encounter substantial challenges encompassing elevated inflation rates, economic intricacies, educational deficits, and issues pertaining to social justice (Salehi et al., 2019). Salehi et al. (2019) suggested that due to financial pressures in countries like Saudi Arabia, managers may manipulate annual reports to present inflated profits. Companies, especially those with high CSR disclosure but unfavourable financial conditions, might resort to financial statement manipulation to mask poor performance and uphold public trust. Furthermore, the positive and significant associations between CSRD and FDR can be explained in two ways. Firstly, Saudi Arabian firms with robust CSRD are likely to incur lower costs associated with socially irresponsible actions (Attig et al., 2013). In times of economic crises, financially distressed firms may escalate CSRD to alleviate culpability and potential repercussions from stakeholders. Additionally, CSR initiatives entail supplementary expenditures (Sakawa & Watanabel, 2020), possibly disconcerting significant stakeholders in periods of economic difficulty. This discontent might prompt them to divest capital, apprehensive that engaging in costly initiatives during a downturn could adversely impact profitability.

Subsequent findings reveal a negative and significant impact of CGI on FDR, indicating that an enhancement in CGI is associated with a decrease in FDR among the listed firms. Significantly, our results substantiate the efficacy of ownership as a robust corporate governance mechanism, shielding firms from bankruptcy amid economic downturns (Moradi et al., 2021). Within the framework of Saudi Arabia's listed corporations, the substantial negative impact of corporate governance on FDR underscores a pivotal role in steering these entities away from potential crises. This discovery underscores the critical importance of governance in risk mitigation and ensuring organizational stability. Particularly in Saudi Arabia, where there has been an increasing emphasis on CGI practices, this result reaffirms the efficacy of rigorous oversight mechanisms and transparent decision-making processes. Such governance frameworks actively promote judicious risk management strategies among listed entities. This discernment suggests that companies adhering to robust governance standards in Saudi Arabia possess enhanced capabilities to anticipate, address, and navigate financial uncertainties, thereby fostering resilience and safeguarding against potential disasters (Raimo et al., 2022).

The results indicate that CGI significantly and negatively moderates the relationship between CSRD & FDR. Grounded in agency theory, effective board oversight restrains managerial opportunism, aligning with shareholder interests. In the Saudi Arabian context, economic conditions affecting lending and managerial priorities for profitability drive institutional shareholders toward stringent regulatory measures, guided by long-term perspectives. Consequently, the findings suggest that in listed Saudi Arabian firms, CGI, influenced by a long-term investment outlook, promotes robust regulatory measures, reducing information asymmetry and enhancing financial performance. This negative moderation effect underscores the role of governance practices as a safeguard against financial risks stemming from extensive CSR disclosure. It underscores the governance structure's crucial role in balancing the impact of CSR initiatives on social responsibility and financial prudence within Saudi-listed companies. The findings underscore the necessity for comprehensive governance strategies to align CSR efforts with financial sustainability, ensuring positive contributions without exposing the company to undue financial risks. This implies that effective governance mechanisms play a vital role in mitigating risk by directing CSR strategically, aligning with responsible and transparent practices. This aligns with previous research highlighting the significant moderating role of CGI (Javeed & Lefen, 2019; Tarighi et al., 2022).

Moreover, concerning financial indicators in three models, adverse effects are observed with respect to the current ratio and ROA on FDR. This suggests that businesses effectively utilizing assets for success and possessing greater debt settlement capacity are less prone to failure. Larger enterprises, endowed with richer information assets, tend to navigate financial crises more adeptly than their smaller counterparts. Additionally, the results reveal a positive correlation between leverage and FDR in Saudi Arabia's listed companies. In the inflationary economy of Saudi Arabia, the devaluation of cash incentivizes immediate debt settlement over cash holding, influencing corporate strategies. Furthermore, the inflation rate exhibits a negative and significant impact on FDR. These findings indicate that in the Saudi Arabian context, elevated inflation rates typically correspond to a more robust economy, benefiting listed companies by stimulating spending and revenue generation.

Finally, the results also demonstrate a negative and significant impact of Gross Domestic Product (GDP) and firm size on FDR. In the context of Saudi Arabia's listed companies, a stronger GDP signals a more stable economic environment, reducing the risk of financial disasters. A robust GDP in Saudi Arabia is often associated with increased government spending, infrastructural developments, and diversified economic sectors, providing listed firms with a more resilient market. The aforementioned results are detailed in Table 5.

Table.5: Empirical Studies Results.

Relationships	Model-1		Model2		Model-3	
	Beta (P Values)	T-Statistics	Beta (P Values)	T-Statistics	Beta (P Values)	T-Statistics
CSRD	2.3130* (0.023)	2.01				
CGI			-0.681* (0.023)	2.04		
CGI* CSRD					-3.228*** (0.004)	-2.32
GDP	-0.0243*** (0.004)	-3.780	-0.059** (0.012)	-3.345	-2.239* (0.043)	-2.28
IR	-0.0420*** (0.008)	-2.431	-0.003 (0.701)	-0.841	-0.0320* (0.021)	-2.523
ROA	-14.428*** (0.000)	-6.782	-23.20*** (0.000)	-8.192	-13.428*** (0.000)	-6.782
CR	-2.126*** (0.000)	-4.384	-1.725*** (0.000)	-6.632	-2.326*** (0.000)	-4.839
LEV	5.235*** (0.000)	8.121	5.301*** (0.000)	5.68	5.134*** (0.000)	3.672
Size	-0.655*** (0.020)	-2.371	-0.593** (0.03)	-1.992	-0.355** (0.040)	-1.985
R Square	0.572		0.590		0.621	

Note: *** (99% confidence level), ** (95% confidence level), * (90% confidence level).

7. Implications

The study contributes both practically and theoretically to the understanding of CSR within the context of Saudi Arabia's listed companies. In practical terms, it illuminates the nuances of CSR in developing markets, distinguishing itself from studies in developed countries and pioneering research within the Saudi Arabian context. Furthermore, empirical evidence revealing a positive relationship among CSRD & FDR challenges conventional expectations, underscoring the need for a robust approach to CSR practices within Saudi firms, considering unique cultural and economic settings. This implies a necessity for a reassessment of CSR strategies, customizing them to local market conditions and investor preferences.

Additionally, the study underscores the pivotal role of corporate governance as a potent moderating variable. The negative moderation effect suggests that governance structures function as a safeguard against potential financial risks associated with extensive CSR disclosures. This insight advocates for strengthened governance frameworks within Saudi-listed companies, emphasizing transparent decision-making processes and stringent oversight mechanisms to strike a balance between social responsibility and financial prudence. The study findings could also offer guidance to policymakers and regulatory bodies, advocating for the implementation of robust governance structures to enhance the transparency and accountability of CSR disclosures, thereby mitigating risks. The study yields theoretical implications by elucidating the intricate dynamics among CSR, CGI, and financial risk within the Saudi Arabian context. It underscores that heightened CG practices effectively steer firms away from potential financial crises, underscoring the pivotal roles of ownership and stringent oversight mechanisms. This highlights the necessity for future theoretical models to incorporate cultural and economic specifics of Saudi Arabia when examining CSR-FDR relationships. Furthermore, the study underscores the demand for comprehensive governance strategies to align CSR efforts with financial sustainability.

The negative moderation effect of CG on the link among CSRD & FDR accentuates the need for sophisticated theoretical frameworks exploring the nuanced interactions between governance mechanisms and CSR practices in shaping firms' financial resilience in emerging economies. In sum, these findings pave the way for a deeper theoretical understanding of how corporate governance moderates the impact of CSR on financial risk, urging scholars to delve further into the complexities of governance structures within the Saudi context to enhance companies' flexibility and sustainability plans. The study also opens avenues for further research, encouraging scholars to extend their investigations with a comprehensive research framework.

8. Conclusion

The inquiry aimed to examine the moderating effect of the CGI on the relationship between FDR & CSRD among listed corporations in Saudi Arabia. The outcomes of this extensive investigation, encompassing 115 listed firms on the Saudi Arabian stock exchange, reveal noteworthy insights. Contrary to expectations, the relationship between FDR and CSRD is intricate, with empirical results indicating that CSRD does not exert a significant effect on FDR. Notably, CG emerges as a significant mitigating factor, exhibiting an adverse impact on FDR. These results underscore that robust governance practices, augmented by ownership, function as safeguards against potential financial risks stemming from extensive CSR disclosure.

Furthermore, financial ratios and economic indicators, including leverage, inflation rate, GDP, and firm size, exhibit significant effects on FDR. Specifically, firms demonstrating efficient asset utilization and larger sizes manifest lower FDR, while inflation rates and a robust GDP signal a more stable economic environment, thereby reducing disaster risk. Additionally, the findings demonstrate that CGI significantly and negatively moderates the relationship between CGI and FDR. This underscores the pivotal role of governance structures in harmonizing CSR efforts with financial prudence, ensuring that social responsibility disclosures positively contribute to companies' sustainability amid economic fluctuations.

9. Limitations and Future Directions

While the study makes several valuable contributions, it is not without limitations, and these offer opportunities for future research. Firstly, the geographical focus of the study may restrict the generalizability of findings to other regions. Additionally, relying solely on annual reports for data collection might overlook real-time dynamics, suggesting potential benefits from incorporating more extensive and diverse datasets. Future studies could undertake a more profound exploration through qualitative assessments, investigating the underlying motivations for CSR disclosures and contextual variations in governance practices.

Considering the dynamic nature of CSR and governance structures, future research might employ longitudinal studies to elucidate how these relationships evolve over time, especially in response to changing economic conditions and regulatory frameworks. Furthermore, examining the impact of specific CSR initiatives on financial performance could offer more nuanced insights into the relationship between CSR, governance, and risk. The study focused on the moderating role of the Corporate Governance Index, leaving room for exploration of other mediating variables in the relationship between CSR disclosure and financial disaster risk. Future research could delve into the mediating relationships between CSR disclosure and bankruptcy financial risk in the context of developing countries.

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