

The role of corporate inflexibility moderator on the relationship between environmental, social and corporate governance (ESG) and the cost of equity.in listed companies in Iraq.

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Abstract : This longitudinal study investigates the dynamic relationship between environmental, social, and corporate governance (ESG) performance and the cost of equity in listed companies in Iraq from 2016 to 2022. Utilizing a comprehensive dataset spanning multiple years, the study examines the evolving nature of this relationship over the specified time period. The research findings reveal a significant negative correlation between ESG performance and the cost of equity, indicating that companies with higher ESG scores tend to have lower costs of equity capital. Furthermore, the study explores the moderating effect of corporate financial inflexibility on this relationship. Results indicate that financial inflexibility acts as a moderator, decreasing the impact of ESG performance on the cost of equity capital in a decreasing direction. These findings contribute to the understanding of how corporate inflexibility influences the relationship between ESG practices and the cost of equity in the Iraqi context.

Keywords: cost of equity, ESG, corporate inflexibility

Introduction: The concept of cost of capital as a key factor in the success and sustainability of a company in financial markets is highly emphasized in financial and accounting literature, as well as in evaluating the quality of investment decisions considering variables present in financial markets and dynamic business environments. The concept of cost of capital plays a significant role in managing the financial structure using internal sources such as equity, reserves, and retained earnings. Researchers and professionals actively seek a comprehensive understanding of the cost of capital as precise comprehension of its concepts is crucial for all businesses. This article examines the US and European markets to analyze how various factors impact the cost of capital in these regions. The significance of the cost of capital primarily stems from investors' and shareholders' interests, and it is examined for three main reasons: compensating investors' damages, maximizing shareholders' wealth, ensuring company sustainability, and enhancing corporate competitiveness and contribution to the national economy.

Hienen (2019) asserts that the primary objective of ESG performance is to safeguard shareholders' interests from potential mismanagement by company management. ESG performance plays a role in building shareholders' trust and reducing the company's cost of capital. However, literature and scientific articles regarding calculating the cost of capital and its impact on ESG performance in Iraq show a lack of depth and clear understanding. In Iran, there is no comprehensive research or literature on the relationship between ESG performance methods and the cost of capital. Furthermore, there has been no analysis of the impact of financial inflexibility on capital cost calculations and its relation to corporate governance practices in Iranian and Iraqi companies.

1-2 problem statment

Environmental protection, social responsibility, and corporate governance are highly important today. For example, the corporate governance regulations for listed companies in Iraq were drafted in 2002, and the revised version in 2020 introduced environmental protection and social responses. In addition to corporate governance responsibilities in the old version, the new version includes a set of commitments to environmental protection, social responsibility, and corporate governance. A research report on the ESG assessment system of listed companies in Iraq (2019) was collected and published by relevant departments in 2020, formally introducing the concept of ESG, its expansion, and the related assessment system. As a systematic method for promoting the sustainable development of companies, ESG is a non-financial assessment system focused on the environment, society, and governance, encouraging companies to maximize social benefits rather than just their own interests. It not only serves as a primary framework and internal requirement for companies to pursue green development but also serves as an important starting point for high-quality economic development in society. However, if the cost of implementing ESG strategies cannot be offset by future

revenue, it becomes an external pressure rather than internal motivation, hindering more companies from complying with ESG requirements for doing business. Therefore, illuminating the impact of ESG on companies' financial indicators from both theoretical and practical perspectives, leading to a flourishing of research into their relationships, is crucial. From a theoretical perspective, some researchers believe that ESG performance has a positive impact on economic performance, while others argue that ESG has no relationship or even a negative correlation with company financial performance. This uncertainty challenges the conclusive inference about the relationship between ESG performance and a company's financial performance. There are few quantitative empirical studies on the overall impact of ESG performance on financial performance from a comprehensive proxy variable perspective. Therefore, the focus of this study is to examine the impact of ESG performance on the cost of equity for listed companies in Iraq, considering comprehensive representative variables, and to investigate the pathways of this impact among financial indicators under the existing institutional environment and economic background of Iraq.

A company with high flexibility can more easily adapt to profitability changes, thus having a higher likelihood of success (Chouaibi and Zouari, 2022). Companies with high inflexibility are exposed to various risks such as bankruptcy risk and liquidity risk (Adeneye et al., 2023). Despite the potential benefits of increasing flexibility (Hong et al., 2024), not all companies regularly adjust their scales and policies (Hossain and Masum, 2022; Hayek et al., 2023). For example, Habib (2023) found that some companies often do not change their product prices, and Ghardallou (2022) found that companies managed by democratic CEOs tend to use less flexible policies. In this study, the literature is expanded through empirical analysis of investors' perceptions of corporate inflexibility, specifically examining the relationship between corporate inflexibility and the cost of equity financing. Interest in the cost of equity arises from the fact that this required rate of return is based on investors' perception of a company's risk tolerance (Naseer et al., 2024). However, the cost of equity is crucial as the discount rate applied in the discounted cash flow model and directly affects investment decisions and financing (Ekaputra et al., 2023). To measure a company's inflexibility, the primary motivation for this proxy is that a company with less operational flexibility before adjusting its scale to adapt to profitability changes will wait longer. It is assumed that investors consider companies with higher levels of inflexibility as riskier (Mansour and Sayed, 2022) and require higher returns. Under this assumption, it is expected that systematic differences in equity pricing will be observed with corporate inflexibility.

Therefore, the main research question is formulated as follows:

Can financial inflexibility moderate the relationship between ESG and the cost of equity?

The following research questions are then posed:

Does ESG disclosure significantly affect the cost of equity on the Iraqi Stock Exchange?

Does financial inflexibility moderate the relationship between ESG and the cost of equity?

1.2.Importance of research

The ESG topic is a new and emerging subject globally and in Iran. In Iraq, given the special attention to social responsibility, corporate governance, and environmental issues, this research aims to fill the past research gap, as the cost of capital is a crucial topic in the financial domain, affecting all investors and stakeholders. Therefore, giving importance to ESG and its impact on the cost of capital can be valuable.

There are two completely contrasting perspectives on ESG: one believes that ESG costs are detrimental because they take resources that could be used for primary research and technology development or product innovation and do not generate any monetary income, hindering company development. Therefore, ESG investment is perceived as damaging for constructive development. On the other hand, according to the Environmental Kuznets Curve (EKC), the burden of environmental resources gradually increases with industrial development levels, and when the level of resources and environmental burden increases, economic growth decreases.

Given the research gaps, this study focuses on two main topics: first, it examines the impact of ESG in the emerging market of Iraq, where the moderating role has been prominent in past research results. Secondly, to provide a more accurate assessment and comprehensive conclusion, the study evaluates the moderating role of financial inflexibility to determine whether companies showing less flexibility in their prices are more exposed to financial crises and consequently face higher capital costs. Therefore, this research aims to fill the past research gap by selecting financial inflexibility as a moderator to provide a broader examination compared to previous studies.

1.3.Research innovation

This study represents a pioneering endeavor in exploring the intricate interplay between corporate governance, social responsibility, environmental (ESG) factors, and the cost of equity, with a unique focus on the moderating role of corporate inflexibility. While prior research has extensively examined the individual impacts of these variables on financial performance, the nuanced influence of corporate inflexibility as a moderator remains relatively unexplored. By investigating how corporate inflexibility shapes the relationship between ESG practices and the cost of equity, this research introduces a novel dimension to the discourse on corporate sustainability and financial valuation. Through

empirical analysis, this study seeks to uncover nuanced insights into how the degree of corporate inflexibility influences the effectiveness of governance structures and ESG initiatives in mitigating equity costs. By shedding light on this under-researched aspect, this study aims to provide valuable contributions to both academic literature and corporate practice, offering actionable insights for firms aiming to optimize their sustainability efforts while managing their cost of equity effectively.

2.1. Cost of equity

The concept of cost of capital indicates that investors in a company or investment project require a minimum specified return and do not accept less. If the income is less than the cost of capital, investors decide to either withdraw all their capital or reduce their investment. The cost of equity refers to the minimum return that shareholders anticipate in a project. Lenders expect a certain level of expected return, known as the cost of debt (Gupta, 2018). Considering the cost of capital in investment decisions is important because the expected return on any investment must exceed the required cost of capital. Furthermore, the cost of capital is used in evaluating new and existing investment initiatives. The cost of capital for a particular investment is the cost of choosing one investment over the best alternative economically (Yu et al., 2021). In this context, the issue relates to the economic concept of substitution, meaning that an investor only considers investing in a particular asset if a more attractive alternative is not available. According to Roger Ibbotson, the cost of the opportunity of alternative capital is the potential return from other investments with the same level of risk. In simpler terms, considering that risk is the most important factor in comparison, the competitive return in the market for that investment is equal.

Chouaibi and Belhouchet (2023) state that the cost of capital is a vital factor in a company's financing decisions, and investors pay special attention to the return on capital when deciding where to invest. Company management needs to evaluate costs and their impact on risk and return to find the most suitable options. The company's goal should be to minimize the costs of financing post-taxation. The cost of capital is associated with the risk accepted by investors, as it is based on their expected return on investment. Potential investors who are suitable for financing a particular investment are referred to as the market. Funds or assets are usually provided in cash, but they can also be presented in other forms in special cases. The cost of capital is usually expressed as a percentage, indicating the amount of dollars annually requested or expected by the investor as a percentage of the total investment in the company (Al Amosh et al., 2022). The cost of capital is determined based on the market value of the company's shares, not the book value of each share, and using market information. These figures relate to the forecasted earnings for market values. By using the forecasted market cost of capital, the market value of an investment or project can be calculated through the analysis of expected cash flows and other economic income indicators, while also considering future risks and inflation (Hayek et al., 2023). According to Kumar (2023), using this model to calculate the cost of capital helps investors achieve expected returns despite challenges such as market inflation and various risks like war and economic downturns. All companies are subject to a specific rate.

2.2. ESG

Reporting is an effective tool for advancing sustainability efforts. Sustainability reporting is an official document of a company that discloses its performance in financial, environmental, social, and governance aspects. In some countries, the publication of these reports is mandatory for companies and affects their business operations in various ways. The formalization and organization of sustainability activities are summarized and shared for strategic and targeted sustainability management in response to social and environmental changes with the public.

As mentioned earlier, the increase in financial crises and concerns has raised worries about transparency, credibility, and ethical behavior in the social and environmental aspects of businesses. Furthermore, media pressure plays a significant role in encouraging companies to improve transparency and disclose environmental, social, and governance (ESG) performance. Consequently, there is a noticeable increase in companies that disclose ESG information to meet shareholders' demands and enhance corporate responsibility. This disclosure aims to improve transparency regarding the company's environmental, social, and governance initiatives.

Ngcobo and Sibanda (2021) found that investors use ESG information to assess the financial performance of companies, as demonstrated by Vena et al. (2020). Furthermore, it has been stated that ESG data serves as an indicator of potential benefits and threats (Hayek et al., 2023). Yuan et al. (2022) widely believed that modern corporations are increasingly facing public scrutiny regarding their role in promoting sustainable development, and it is expected that they demonstrate their commitment through sustainability reporting. Tsang et al. (2023)) argues that engaging with internal and external stakeholders to measure organizational performance aligns with the goal of sustainable development.

It appears that disclosing environmental and social accounting information aligns with public social values and government regulations, meeting expectations of financial and environmental performance and protecting corporate interests. Asante-Appiah and Lambert (2023) found in their study on ESG reporting in the metals and mining sector on

the Australian Stock Exchange that companies increasingly use sustainability reporting as a tool to establish legitimacy and credibility. Ellili et al. (2024) stated that there is a growing focus among European policymakers and international organizations on the importance of company disclosure through integrated reporting and incorporating environmental, social, and governance criteria into a sustainable financial system. The possibility of integrating ESG and reporting into business operations to enhance financial performance is supported by scientific research and empirical evidence from international organizations. These researchers also argue that companies incorporate ESG factors into their business practices and decision-making processes to adhere to sustainable development goals and enhance their market performance and consumer acceptance.

Bagh et al. (2024) pointed out the lack of sufficient research on the impact of ESG disclosure on company market value in developing countries. Most existing research is focused on developed countries such as the United States, Australia, Germany, Finland, and regions like the European Union. In 2018, a report by the Global Reporting Initiative showed that 12,964 companies worldwide voluntarily published 50,197 sustainability reports covering various aspects of ESG disclosure. While ESG focus has been part of Europe's agenda for some time, it still holds significant relevance in Asia. In 2009, 80% of Chinese companies published ESG reports, which had significantly increased compared to 4% in 2005.

Studies have been conducted on the importance of sustainability reporting in Asia as well. For example, Zahid et al. in 2022 introduced a model for sustainable business performance in Iran, emphasizing the continuity of financial and non-financial performance and the annual implementation of mandatory sustainable business practices, which most experts agree with. In a different study, Igbinovia et al. conducted research in 2023 aiming to create a framework for evaluating companies based on their environmental, social, and governance reports. This study showed that the average sustainability reporting score in Iran is approximately 29%, with social disclosure having the highest weight compared to environmental and governance aspects with coefficients of 387, 337, and 275, respectively.

In general, ESG indicators used for sustainability assessment encourage companies to produce more comprehensive and transparent reports. Over time, the exclusive focus on financial data shifts towards a more comprehensive approach that considers various types of information for evaluating corporate governance, environmental impacts, social responsibility, and economic performance.

2.3. corporate inflexibility:

Financial inflexibility can be interpreted as a potential risk factor, exposing shareholders to the risk of being unable to maintain a steady stream of dividend payments over time. In cases where dividend payout is allowed to fluctuate more with profitability and external shocks, both risk and expected return increase. As dividend claims are for an infinite sequence of dividends, Chams et al. (2021) argues that the shareholder's equity can be split into "uncertain payment insurance" and "term insurance" rights. In this framework, risk insurance is necessary as compensation for periodic dividend payments.

Companies with financial flexibility can use the cost of capital mechanism to help mitigate the impact of external shocks on dividend payments. After an economic shock, financially flexible companies can increase or decrease their investments as needed, resulting in relatively less fluctuation in dividend payouts compared to operational cash flows. In fact, investments can absorb the impact of such shocks and act as a buffer for dividend distributions (de la Fuente et al., 2022).

Companies with higher-than-average fixed assets and total leverage are more affected by financial inflexibility than average companies. Additionally, Ma et al. (2023) argues that if capital investment is largely irreversible, the book value of assets of a distressed company, i.e., one affected by undesirable profitability shocks, remains relatively intact. The book-to-market ratio of this company is high because its market value decreases. Similarly, Utami et al. (2021) argue that incomes decrease relative to average companies, indicating that companies with higher operational leverage have lower values compared to growth companies.

2.5. The impact of ESG on the cost of equity

The concept of sustainable development has been widely accepted by global communities because humanity has realized that worsening environmental conditions and public health can significantly halt economic growth. In some countries or regions, attention to environmental issues has begun, and green innovation and transformations have gradually been embraced, both domestically and internationally, turning into a hot topic (Wu, 2021; Zhang et al., 2023).

Zhai et al. (2022) evaluated the impact of Environmental, Social, and Governance (ESG) performance on the cost of equity (COE) of Chinese A Share companies between 2010 and 2020. The analysis demonstrated that ESG performance can significantly reduce the cost of equity for listed companies. Furthermore, ESG can reduce the cost of equity not only directly but also indirectly by reducing market risk for companies and increasing their stock diversification.

Domestic studies have also shown that the economic damages resulting from ecological destruction or environmental pollution in China accounted for approximately 8% of gross domestic product from the 1980s to the 1990s and nearly 4% from 2005 onwards. Resource constraints and environmental limitations have hindered China's economic growth (Shi and Veenstra, 2021). Legislation has timely issued a set of regulations and laws to compel enterprises to take measures in environmental protection, social responsibility, and corporate governance. Decision-makers believe that the economic benefits derived from environmental protection and social responsibility will outweigh the associated costs and have a positive impact on company income. Recent studies have also confirmed that ESG performance has a positive impact on economic performance. For example, Sayed and Khalil (2022) argued that ESG significantly correlates with financial performance through an examination of standard and S&P 500 companies from 2011 to 2021. Research on relevant data in Germany also indicates that ESG performance has a positive effect on total asset returns (Yang et al., 2023), which may lead to a reduction in the cost of capital for companies with a high level of ESG disclosure (Li, 2024; Pinheiro et al., 2024).

Zhang and Liu (2022), the influence of environmental, social, and governance disclosure on the cost of equity and the moderating role of positive ESG performance was examined using a sample of 2599 observations related to listed European companies. The results indicated that negative ESG performance, especially environmental concerns, increases the cost of equity, although this effect diminishes when the company's efforts to improve environmental performance are evident. Moreover, environmental controversies likely increase the cost of equity in countries with stronger market regulations, reflecting higher investor expectations regarding the supervisory role of more efficient markets in addressing corporate controversies.

Therefore, it is predicted that there is a negative relationship between ESG and the cost of equity for shareholders

2.6. The impact of financial flexibility on the relationship of ESG and the cost of equity

The A significant portion of existing theoretical research has provided concepts for the relationship between financial flexibility and the cost of debt. For example, Yunica and Rokhim (2023) demonstrate that financial flexibility reduces the cost of capital and increases the benefits of tax shields within a dynamic framework. Companies facing price fluctuations can adjust their production capacity by incurring operational adjustment costs and modify their capital structure by incurring capital raising costs. According to the trade-off theory (Gold and Taib, 2023), optimal capital structure decisions in these settings are determined by a trade-off between tax benefits and bankruptcy costs of debt financing. An important implication of the Shin et al. (2023) model is that the value of tax shields increases with a company's production flexibility. Flexible companies incur lower shareholder equity costs and therefore have a higher ability to reduce operations during tough times, which allows them to mitigate operational losses. Consequently, companies with lower adjustment costs can benefit more from tax shields and maintain a higher level of financial leverage (Rajesh and Rajendran, 2020).

Mukhtar et al. (2023), an investigation was conducted using a large dataset of manufacturing firms from 65 countries to examine whether and how corporate inflexibility affects the cost of equity over the period 1989-2018. The results indicated that, on average, a firm with higher inflexibility tends to have higher implicit costs of equity. Additional analyses showed that the effects of corporate inflexibility on the implicit costs of equity are stronger for small firms and firms located in developed countries.

Wen et al. (2022) found that companies managed by democratic CEOs use less flexible employment policies. The cost of shareholder equity arises from the fact that this rate is the required return based on shareholders' perception of the company's risk appetite (Wu et al., 2023). However, the cost of shareholder equity is crucial because the discount rate applied in the cash flow model directly impacts investment decisions, financing, and shareholder equity cost reduction.

Under favorable conditions, inflexibility can lead to serious financial crises or even bankruptcy. Therefore, it is more rational for an inflexible company to adopt higher shareholder equity costs. Conversely, for a flexible company with low adjustment costs that can more easily adjust its market share, especially during economic recessions, reducing expected financial distress costs provides more debt capacity. On the other hand, during economic booms, flexible companies can quickly expand to increase profitability, and higher debt levels bring in more tax shields for them.

Therefore, it is predicted that financial inflexibility moderates the relationship between ESG performance and the cost of equity capital.

3. Methodology

3.1. Research hypotheses

- 1- ESG performance is negatively related to the cost of equity.
- 2- Financial inflexibility moderates the relationship between ESG performance and the cost of equity.

3.2. research objective

1 Evaluation of the impact of ESG performance on the cost of equity in the Iraqi stock market in the Iraq Stock Exchange.

2- Investigating the moderating role of financial inflexibility on the relationship between ESG performance and the cost of equity in the Iraqi stock market in the Iraqi stock market..

4.3.Society of statistics

The time frame considered in this study spans from 2016 to 2022. The decision to confine the study period to seven years is warranted to allow for a reasonable temporal interval for investigating the research inquiries, while preventing the prolongation of the research duration, which could raise concerns about the absence of synchronization in economic conditions throughout the study period .

The target population for this research comprises companies that were listed on the Iraq Stock Exchange between 2016 and 2022. The sample selection criteria are as follows:

1 .Companies that have been listed on the Iraq Stock Exchange before 2016 and have remained listed until the end of 2022.

2 .Companies that have not changed their fiscal year during the study period.

3. Availability of required information for conducting this research.

. The names of these Companies are as follows: 1 - National Company for Agricultural Production 2- Modern Company for Animal Production 3- Iraqi dates marketing 4- Iraqi Carton Industries 5- Iraqi Engineering Works 6- Al-Iraqiya Carpets and Furniture 7- Al-Iraqiya Land Transport 8-Al-Kindi for the production of veterinary vaccines 9 - Al Maamoura Real Estate Investments 10- Al-Mansour Pharmaceutical Industries 11-Elite Contracting 12-Al-National Chemical and Plastic Industries 13-Baghdad for packaging materials industry 14- Baghdad Public Transport 15-Baghdad Soft Drinks Company 16- Modern Tailoring Company 17- Middle East Fish Production and Marketing Company 18- Al Hilal Industrial Company 19- Baghdad Hotel 20- Al Sadeer Hotel 21- Al Mansour Hotel 22-Babylon Hotel 23 - Iraqi Seed Production Company 24 - Ishtar Hotel 25- Palestine Hotel 26-Karbala Hotel 27 - Al-Karkh Games City 28- Metal and bicycle industries 29- Modern chemical industries 30- Iraqi meat production and marketing 31Iraqi agricultural products 32- National Tourism Investments 33- Production of ready-made clothes

4.4.Model of research

A model has been suggested for this study in order to examine each hypothesis. This is the model that was utilized to investigate the first hypothesis:

H1:

$$IndE_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 OWNCON_{it} + \beta_3 INSOWN_{it} + \beta_4 INDP_{it} + \beta_5 BMEET_{it} + \beta_6 Restate_{it} + \beta_7 ROA_{it} + \beta_8 LR + \beta_9 CCC + \beta_{10} Size + \beta_{11} Lev + \beta_{12} SG + \beta_{13} age + \varepsilon$$

The following model is used to test the second hypothesis.

$$H2: IndE_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 inf_{it} + \beta_3 ESG * inf_{it} + \beta_4 OWNCON_{it} + \beta_5 INSOWN_{it} + \beta_6 INDP_{it} + \beta_7 BMEET_{it} + \beta_8 Restate_{it} + \beta_9 ROA_{it} + \beta_8 LR + \beta_9 CCC + \beta_{10} Size + \beta_{11} Lev + \beta_{12} SG + \beta_{13} age + \varepsilon$$

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4.5.Examining the linear regression model's assumptions

4.5.1.Check for collinearity

We employed the Pearson correlation matrix, depicted in Figures 1, to confirm the absence of collinearity among the independent and control variables. The modest correlation coefficients observed between these variables alleviate worries about collinearity, thus confirming their independence..

4.5.2.heterogeneity

In econometrics, variance heterogeneity is a significant concern, referring to the unequal variances of error terms across regression models. Initially, the ordinary least squares method assumes equal variances for all error terms. However, various methods are used to assess this assumption, assuming variance homogeneity within the model. Yet, in practical econometrics, researchers face challenges in identifying and addressing variance heterogeneity. These challenges include detecting variance heterogeneity in the model when error term values are unknown and recognizing that error term variations are typically not identical, leading to deviations in variances. Therefore, the question arises whether a statistical criterion exists to quantify the extent of variance inequality, allowing researchers to determine if their model exhibits a variance inequality issue when the degree of variance inequality surpasses a certain threshold. Economists use techniques like the Brush-Pagan, White, and Park tests to address this issue.

White's test is particularly valuable as it addresses the most general scenario and is highly sensitive to detecting variance heterogeneity. It is commonly used when the variance distribution of error terms is unknown, and there is no

available estimate for it.

4.5.3.test for unit root

When utilizing a pooled data structure covering a period of less than a decade, it is unnecessary to conduct unit root testing of variables (Bani Mahd et al., 2015).

4.5.4.Test using random or fixed effects

Panel data sets are collections of observations gathered across different entities and time periods, encompassing N components over T time periods, thus providing information in both spatial and temporal dimensions. A panel is considered balanced when each component has an equal number of time observations, while it is termed unbalanced if some components have missing observations.

Limer's F statistic distinguishes between panel data and combined data approaches by assessing whether each entity has a distinct origin. The null hypothesis (combined data) assumes uniform origin widths, while the alternative hypothesis (panel data) suggests varying widths. Thus, if the null hypothesis is rejected, indicating heterogeneous origin widths, the panel data approach is preferred.

Upon rejection of the null hypothesis by Limer's F test, further investigation can be conducted using fixed effects or random effects methods, determined by Hausman's test. The null hypothesis (random effects) posits independence among explanatory factors and no relationship between the disturbance component and origin width. Conversely, the fixed effects method suggests a correlation between the explanatory variable and the disturbance component. If the null hypothesis is rejected, indicating a correlation, the fixed effects approach is warranted; otherwise, the random effects method is employed..

5.Conclusions

5.1.Descriptive Statistics

In this study, data from 33 companies were collected over a seven-year period (2016 to 2022), resulting in a total of 231 observations. Tables 1-4 provide descriptive statistics for the research variables, including mean, median, standard deviation, minimum, and maximum values. It is important to mention that continuous variables in the study were Winsorized at the 1% level to mitigate the influence of outlier data. Appendix 1 presents the detailed results of the descriptive statistics analysis. The abnormal distribution of the data is indicated by the results of Jarkibra's test.

Table 1: Descriptive statistics results of research variables

Variable	symbol	mean	median	standard deviation	min	x	ma
<i>cost of equity</i>	IndE	0.007	0.002	0.054	- 0.152	94	0.1
<i>environment social governance</i>	ESG	2.194	2.213	0.791	0.72 5	26	4.3
<i>financial inflexibility</i>	inf	0.351	0.304	0.229	0.01 2	55	1.3
<i>Institutional Ownership</i>	InsOwn	0.371	0.380	0.246	0.00 0	90	0.7
<i>Ownership Concentration</i>	OwaiCon	0.237	0.193	2.012	0.00 0	94	0.6
<i>board of directors Independence</i>	INDP	0.742	0.800	3.298	0.14 2	23	0.9
<i>board meetings</i>	BMEET	9.558	10.000	2.292	5.00 0	000	17.
<i>Financial Leverage</i>	LEV	0.339	0.214	0.330	0.01 5	13	1.4
<i>Firm age</i>	AGE	3.528	3.433	2.90	2.70 8	30	4.3

firm size	SIZE	22.186	22.144	1.643	01	19.0	27.
Return on Assets	ROA	0.075	0.040	2.907	0.445	-	0.1
Sales growth	SG	0.664	0.029	4.192	0.995	-	6.3
cash conversion cycle	CCC	146.496	119.667	1.643	01	19.0	27.
Stock liquidity	LR	0.013	0.003	0.027	12	0.00	0.1

Variable	symbol	Number of zero	Number of zer	mean	min	x	ma
Renewal of financial statements	Restate	194	37	0.154	85%	%	15

5.2. Testing the assumptions of the linear regression model

5.2.1. Collinearity check

To ensure the absence of collinearity between the independent and control variables, we utilized the Pearson correlation matrix displayed in Figure 1 etween the independent and control variables, alleviating concerns regarding collinearity.

Figure 1-person's correlation

Probability	INDEP	ESG	INFLXIBILITY	OWAICON	INSOWN	INDP	BMEET	RESTATE	ROA	LR	CCC	SIZE	LEV	GROWTH
INDEP	1.000000													
ESG	-0.450953 0.0000	1.000000												
INFLXIBILITY	0.157989 0.0162	-0.002508 0.9698	1.000000											
OWAICON	0.152931 0.0200	-0.110742 0.0931	0.114978 0.0812	1.000000										
INSOWN	0.161776 0.0138	-0.112282 0.0886	0.119675 0.0697	0.987647 0.0000	1.000000									
INDP	0.019140 0.7723	0.078187 0.2365	-0.001740 0.9790	0.204152 0.0018	0.212003 0.0012	1.000000								
BMEET	-0.032032 0.6282	-0.078361 0.2355	0.049582 0.4533	-0.099528 0.1315	-0.100466 0.1279	-0.016902 0.7983	1.000000							
RESTATE	0.129265 0.0496	0.104056 0.1147	0.093810 0.2044	-0.054125 0.4129	-0.058486 0.3762	0.044466 0.5013	-0.073582 0.2654	1.000000						
ROA	-0.091360 0.1664	-0.015339 0.8166	-0.080940 0.2204	0.105105 0.1111	0.114204 0.0833	0.048831 0.4602	-0.002141 0.9742	-0.142112 0.0308	1.000000					
LR	0.041619 0.5291	-0.077456 0.2410	0.120547 0.0674	-0.046244 0.4843	-0.043348 0.5121	-0.127085 0.0537	-0.093270 0.1577	0.092300 0.1620	-0.059224 0.3702	1.000000				
CCC	-0.035183 0.5947	-0.050441 0.4455	0.091268 0.1668	0.053667 0.4169	0.041655 0.5287	0.008897 0.8930	0.054468 0.4100	-0.101533 0.1239	0.108083 0.1013	-0.088404 0.1806	1.000000			
SIZE	0.002458 0.9704	-0.024556 0.7104	-0.137073 0.0374	0.128584 0.0510	0.135889 0.0390	0.115476 0.0799	0.005725 0.9310	-0.016932 0.7980	0.103049 0.1183	-0.012931 0.8450	-0.122322 0.0634	1.000000		
LEV	0.024653 0.7094	0.029266 0.6913	0.072550 0.2721	-0.106525 0.1063	-0.095435 0.1482	-0.117352 0.0751	-0.130808 0.0470	-0.030698 0.6425	-0.240909 0.0002	0.250267 0.0001	0.012025 0.8558	0.006330 0.9238	1.000000	
ROWTH	-0.004382 0.9472	0.074368 0.2603	-0.031118 0.6380	-0.018839 0.7758	-0.002311 0.9721	-0.030636 0.6432	-0.023127 0.7266	0.092175 0.1626	-0.147394 0.0251	-0.075799 0.2512	-0.118524 0.0722	0.030616 0.6434	-0.001271 0.9847	1.000000
AGE	-0.134678 0.0408	0.003452 0.9584	0.129666 0.0490	0.009296 0.8882	-0.014436 0.8273	-0.067429 0.3075	0.169583 0.0098	-0.077650 0.2398	-0.158236 0.0175	0.086799 0.1887	0.058772 0.3739	-0.004208 0.9493	0.066524 0.3141	-0.062932 0.3410

5.2.2. heterogeneity

To address the issue of variance heterogeneity, all estimations were conducted using White's robust variance method, which effectively resolves the concern associated with heterogeneous variances..

5.2.3. unit root test

The unit root test of variables is not necessary in a time period of less than 10 years with a combined data structure

(Bani Mahd et al., 2015).

5.3.Determining the appropriate model

Table 2 presents the results of Chow's test for each dependent variable. The findings in Table 4-2 indicate that the significance level of the test statistic is below 5%, implying rejection of the null hypothesis. Therefore, it suggests that fixed or random effects should be utilized instead of pooled effects in this model..

It is preferable to employ model estimation in between sections of accounting study since the number of sections is frequently greater than the number of years (Bani Mahd et al., 2015). To differentiate between fixed effects and random effects models, the Hausman test was employed. The Hausman test results are shown in Table 3, and based on these findings, the test's hypothesis is accepted and the hypothesis test model is fitted with with Fixed effects at a significance level less than 5%..

Table 2- chaw test

Hypothesis number	Dependent variable	Test statistics	Significance level
1	<i>IndE</i>	1.649	0.023
2	<i>IndE</i>	1.853	0.006

Table 3-Hausman test results

Hypothesis number	Dependent variable	Significance level
1	<i>IndE</i>	0.001
2	<i>IndE</i>	0.000

5.4.Testing hypotheses of research

The The aim of this study is to investigate "The role of corporate inflexibility as a moderator on the relationship between environmental, social, and corporate governance (ESG) factors and the cost of equity in listed companies in Iraq." The results indicate that: 1) There is a significant negative correlation between ESG performance and the cost of equity; and 2) Financial inflexibility moderates the relationship between ESG performance and the cost of equity capital in a decreasing direction.

5.4.1.Test of the first hypothesis

Table 4 shows the results of the first hypothesis test in audit fees and tax avoidance.

Table 4- result of first hypothesis test

variables	Prob	t-Statistic
ESG	0.0000***	5.2036
InsOwn	0.7023	0.3852
OwaiCon	0.7824	0.2763
INDP	0.4088	1.276
BMEET	0.0968*	1.691
Restate	0.2332	0.960
ROA	0.4901	0.951
LR	0.1001	1.502
CCC	0.3979	1.473
SIZE	0.0319**	2.1617

	LEV	0.3454	0.9460
	SG	0.8733	0.1596
	AGE	0.0723*	0.2763
R²	0.3023	F	3.232
Prob	0.000	Durbin-Watson	2.0220

Description: * Significance at the 0.05 level ** Significance at the 0.01 level *** Significance at the 0.001 level
The findings presented in Table 4 demonstrate a negative significant correlation between

ESG and cost of equity, which aligns with the theoretical framework of the research. Additionally, the results indicate a substantial and positive correlation between Size with cost of equity. The significance level (prob < 0.05) of the F-statistic confirms the significance of the regression model. Moreover, the coefficient of determination suggests that 30% of the changes in the dependent variable can be predicted by the independent variables.

5.4.2. Test of the second hypothesis

The results of the second hypothesis test with managerial ownership moderator Table 6.

Table 6-The results of the second hypothesis test

variables	Prob	t-Statistic
ESG	0.0000***	5.5919
inf	0.0023***	.0889
ESG * inf	0.0000***	.6621
InsOwn	0.7617	0.3036
OwaiCon	0.9144	0.1076
INDP	0.1350	.014
BMEET	0.0334**	.428
Restate	0.4075	.301
ROA	0.4572	.1451
LR	0.1590	.1141
CCC	0.6329	.1785
SIZE	0.0022***	3.1000
LEV	0.2002	1.2856
SG	0.9796	-0.0256
AGE	0.1711*	-1.3740

R²	0.3711	F	3.8878
Prob	0.000	Durbin-Watson	2.090

Table 6's findings demonstrate that The results in the table indicate that, since the significance level of the variable *ESG * inf* is less than 1%, the second hypothesis of the research is confirmed. Additionally, since the coefficient of the variable varies inversely with the independent variable, it moderates the relationship in a decreasing direction. The regression model is significant, as indicated by the f statistic's significance level (prob<0.05), and the model's coefficient of determination indicates that 37% of changes in the dependent variable are predicted by the independent variable.

In this model, the Durbin-Watson's statistic value shows that there is no self-correlation of model errors.

6. Conclusion

The findings of this study shed light on the intricate relationship between environmental, social, and corporate governance (ESG) factors and the cost of equity in listed companies in Iraq, particularly considering the moderating role of corporate inflexibility.

Firstly, the negative significant correlation observed between ESG performance and the cost of equity suggests that companies with higher ESG ratings tend to have lower costs of equity capital. This result is consistent with existing literature highlighting the financial benefits associated with strong ESG performance, such as improved reputation, reduced regulatory risks, and enhanced operational efficiency. Companies that prioritize environmental sustainability, social responsibility, and effective corporate governance practices are perceived more favorably by investors, leading to a lower cost of equity financing.

Secondly, the moderation effect of financial inflexibility on the relationship between ESG performance and the cost of equity capital indicates that the impact of ESG factors on the cost of equity varies depending on a company's financial flexibility. Specifically, financial inflexibility tends to dampen the negative relationship between ESG performance and the cost of equity, suggesting that companies facing constraints in financial resources may not fully benefit from their strong ESG performance in terms of reducing their cost of equity capital. This finding underscores the importance of financial flexibility in harnessing the financial advantages associated with ESG initiatives. Companies with greater financial flexibility are better positioned to implement sustainable practices and demonstrate their commitment to ESG principles, thereby enhancing investor confidence and ultimately reducing their cost of equity.

In conclusion, this study contributes to the growing literature on the relationship between ESG performance and the cost of equity by examining the moderating effect of corporate inflexibility in the context of listed companies in Iraq from 2016 to 2022. The findings highlight two key insights: firstly, a negative significant correlation exists between ESG performance and the cost of equity, indicating that companies with stronger ESG practices tend to enjoy lower costs of equity capital. Secondly, financial inflexibility moderates this relationship, implying that companies facing constraints in financial resources may not fully capitalize on the financial benefits associated with strong ESG performance. Overall, these findings underscore the importance of integrating ESG considerations into corporate strategies and the need for companies to enhance their financial flexibility to fully leverage the potential financial advantages of sustainable practices.

6.1. Restrictions

Temporal Scope: The study is restricted to the years 2016 to 2022, which may limit the generalizability of the findings to other time periods. Economic conditions, regulatory environments, and corporate practices may vary over time, and thus, the results may not be applicable beyond the specified timeframe.

Geographical Limitation: The research focuses exclusively on listed companies in Iraq, which may restrict the applicability of the findings to other regions or countries with different market dynamics, regulatory frameworks, and socio-economic conditions.

Sample Size and Representativeness: The study's findings are based on a specific sample of listed companies in Iraq, and the representativeness of this sample may be influenced by factors such as the size of the sample, the selection criteria, and the availability of data. Therefore, caution should be exercised when generalizing the results to the entire population of listed companies in Iraq.

Methodological Constraints: The analysis is based on quantitative methods, specifically correlation and moderation analysis. While these methods provide valuable insights into the relationship between ESG performance, financial inflexibility, and the cost of equity, they may overlook qualitative aspects and nuances that could impact the findings.

Causality Interpretation: The study identifies correlations between variables but does not establish causality. Therefore, it is essential to interpret the results cautiously and consider other potential factors that may influence the observed relationships.

Data Availability and Quality: The findings are contingent upon the availability and quality of data related to ESG performance, financial inflexibility, and the cost of equity in listed companies in Iraq. Data limitations or inaccuracies could affect the robustness and reliability of the result

7. Suggestions

7.1. Practical recommendations

Enhance ESG Performance: Given the negative correlation between ESG performance and the cost of equity, companies should prioritize improving their environmental, social, and corporate governance practices. This can be achieved through initiatives such as reducing carbon emissions, promoting diversity and inclusion, enhancing transparency and accountability in corporate governance structures, and adopting sustainable business practices.

Address Financial Inflexibility: Recognizing the moderating role of financial inflexibility, companies should evaluate their financial structures and flexibility to mitigate its impact on the relationship between ESG performance and the cost of equity. This may involve optimizing capital structure, managing debt levels effectively, and enhancing liquidity to ensure resilience against market fluctuations and economic uncertainties.

Integration of ESG Factors in Decision-Making: Companies should integrate ESG considerations into their strategic decision-making processes, including investment, risk management, and stakeholder engagement. By incorporating ESG criteria into business strategies, companies can not only improve their financial performance but also mitigate risks associated with environmental and social factors, thereby reducing the cost of equity.

Stakeholder Engagement and Disclosure: Enhance stakeholder engagement and transparency by providing comprehensive and accurate disclosure of ESG-related information. This includes regular reporting on environmental impact, social initiatives, governance practices, and financial performance. Transparent communication with investors, customers, employees, and other stakeholders fosters trust and enhances the company's reputation, potentially reducing the cost of equity.

Continuous Monitoring and Evaluation: Implement robust monitoring and evaluation mechanisms to assess the effectiveness of ESG initiatives and their impact on the cost of equity. Regularly review key performance indicators related to ESG performance, financial flexibility, and cost of equity to identify areas for improvement and make informed strategic decisions.

Capacity Building and Awareness: Invest in building organizational capacity and raising awareness among employees about the importance of ESG factors and their implications for financial performance. Training programs, workshops, and educational initiatives can empower employees to integrate sustainability principles into their day-to-day operations and contribute to the company's overall ESG goals.

Collaboration and Partnerships: Collaborate with industry peers, regulatory bodies, and civil society organizations to share best practices, leverage resources, and collectively address ESG challenges. By collaborating with stakeholders, companies can accelerate progress towards sustainable development goals and enhance their competitiveness in the market, potentially reducing the cost of equity.

Adaptation to Changing Regulatory Landscape: Stay abreast of evolving regulatory requirements related to ESG reporting, disclosure, and compliance. Proactively adapt internal policies and practices to align with emerging regulations and standards, ensuring compliance and mitigating regulatory risks that could impact the cost of equity.

7.2. Ideas for additional research

Longitudinal Study: Conduct a longitudinal study to analyze how the relationship between ESG performance and the cost of equity evolves over time in listed companies in Iraq. This would provide insights into any temporal trends or changes in the relationship.

Sector-Specific Analysis: Investigate whether the relationship between ESG performance, financial inflexibility, and the cost of equity varies across different sectors within the Iraqi stock market. Examining sector-specific dynamics could offer valuable sector-level insights.

Qualitative Research: Supplement quantitative findings with qualitative research methods such as interviews or case studies to gain a deeper understanding of the mechanisms through which corporate inflexibility moderates the relationship between ESG performance and the cost of equity.

Comparative Study: Compare the findings from listed companies in Iraq with those from other countries or regions with different economic, regulatory, and institutional contexts. This comparative analysis can provide insights into the generalizability of the results and highlight any unique factors influencing the relationship.

Exploring Mediating Variables: Investigate potential mediating variables that may explain the relationship between ESG performance, financial inflexibility, and the cost of equity. For example, examine how corporate governance practices or market dynamics mediate this relationship.

Impact of External Factors: Explore the impact of external factors such as macroeconomic conditions, regulatory changes, or geopolitical events on the relationship between ESG performance, financial inflexibility, and the cost of equity in Iraqi listed companies.

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