



Environmental, Social and Governance (ESG) and Firm Investment Efficiency in Emerging Economy: A GMM Analysis

Muhammad Ali¹, Zavish Arshad², Khadija Tariq³, Anam Ashraf⁴ & Uzair Ali⁵

¹MA Development Studies (IPED), International Institute of Social Studies (ISS), Erasmus University Rotterdam, The Netherlands. Email: muhaqiq.ali@gmail.com

²International Islamic University, Islamabad. Email: zavish.a@yahoo.com

³MS Finance Scholar, Institute of Business Management Science, University of Agriculture Faisalabad. Email: raokhadija612@gmail.com

⁴Lecturer, Grand Asian University, Sialkot. Email: anamashrafmalik786@gmail.com

⁵Research Scholar, Institute of Business Management Science, University of Agriculture Faisalabad. Email: uzairmalik1686@gmail.com

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Corresponding Author:

Muhammad Ali

Email:

muhaqiq.ali@gmail.com



ABSTRACT

Demands for more information outside the scope of conventional financial reporting, such as management conversations, governance data, and financial statement comments, have been sparked by significant changes in the corporate environment. Evidence shows that environmental, social, and governance (ESG) factors may increase investment efficiency, lower transaction costs, and win over stakeholders. To investigate the impact of ESG performance on investment efficiency, this research study undertakes step two system GMM analysis on a sample of Chinese A-share listed firms from 2013 to 2022. The Bloomberg database's ESG score is used to gauge ESG performance. The findings demonstrate that investment efficiency is greatly increased by ESG performance. In addition to offering references for ESG practices and sustainable company growth in developing nations, this investigation adds to the body of literature on ESG performance.

Introduction

The business world and academics have recently given corporate environmental, social, and governance (ESG) practices a lot of attention (Arif et al., 2020). In addition to receiving strong pressure from many stakeholder groups to go above the required level of ESG activities, businesses are also under pressure to increase their operational efficiency and financial performance (Eliwa et al., 2021). Stakeholders' increasing desire to include ESG criteria into their business operations is confirmed by the 14.47% increase in ethical/socially responsible investment

(SRI) funds by companies in key financial markets worldwide, from US\$31.6 trillion in 2018 to over US\$36 trillion in 2020 (Bloomberg, 2022). Therefore, it is not unexpected that economic concerns by themselves are no longer sufficient to keep businesses viable and competitive (Maas and Reniers, 2014). The adage "what is good for the business is good for society" is no longer applicable in today's business climate; instead, what is good for the globe or society is now beneficial for the business.

However, since ESG emphasises a company's non-financial aspects, there is conflicting data in the literature about its effect on corporate financial performance (Iazzolino et al., 2023; Wang et al., 2023). Research based on Stakeholder has shown that ESG improves investment efficiency by lowering reputational risks, minimising agency conflicts, fostering positive perceptions, and minimising information asymmetry (Branco & Rodrigues, 2006). Chen and associates (2020). Conversely, other research has shown that ESG practices may have a detrimental influence on a company's financial health or may not result in favourable or unfavourable economic results (Roman et al., 1999; Grisales & Aguilera-Caracuel, 2019; Sibte-e-Ali et al., 2024; Rauf et al., 2024; Hanif et al., 2024). However, because of the self-selection-biased estimate, the empirical data that is currently available in the literature did not consistently reveal an association relating ESG and investment efficiency.

Consequently, research on the impact of ESG performance on investment efficiency may both add to the body of knowledge on ESG and specify theoretical guidance to Chinese companies looking to increase investment efficiency. This paper's study subject is that investment efficiency will increase with strong ESG performance. Good ESG performance may first minimise agency costs and effectively control management behaviour (Lee and Kim, 2020); second, it can remove financing constraints and make it easier for businesses to get external funding (Lio et al., 2021; Lambirt et al., 2007). Third, social responsibility initiatives may improve investment efficiency by reducing information asymmetry and including stakeholders into firm investment choices (Cui et al., 2018) (Samet and Jarboui, 2017).

Using a sample of Chinese A-share listed businesses from 2013 to 2022, we perform step two system GMM analysis. The ESG score from Wind Information, the China Stock Market and Accounting Research (CSMAR) database, and the Bloomberg database is used to gauge ESG performance. The findings demonstrate that company investment efficiency may be increased by effective ESG performance. According to the findings, ESG practices support the sustainable growth of Chinese businesses.

The following additions to the body of existing literature are made by this work. First, few research consider the three ESG determinants collectively; instead, the majority of existing research focusses on only one of them, like as social responsibility, corporate governance, and the environment. This study highpoints the overall effect of ESG in enhancing investment efficiency by combining the ESG (environmental, social, and governance elements) into a single analytical framework to inspect how Chinese enterprises' ESG performance influence investment efficiency. Second, rather than emphasising investment efficiency, the majority of the existing ESG literature concentrates on business value and financial performance. This paper contributes to the body of current research by emphasising the connection between investment efficiency and ESG.

This is how the remainder of the paper is structured. The theoretical analysis and research assumptions are presented in Section 2, which primarily examines the connection relating investment efficiency and ESG pillars. In Section 3, a regression model is established and the

variables and data utilised in this investigation are described. The regression findings are reported in Section 4, which is an empirical test. The significance of this work, its limits, and its future prospects are mostly included in Section 5.

Literature Review

ESG Performance and Investment Efficiency

Diaye (2022) analyzes the disparities in environmental, social, and governance (ESG) ratings by using data from six reputable ESG rating agencies: Sustainalytics, Kinder, Lydenberg and Domini (KLD), S&P Global (RobecoSAM), Refinitiv (Asset4), Moody's ESG (Vigeo-Eiris), and MSCI. The researcher categorizes the different techniques using a standardized taxonomy and records the variation in ratings. The researcher analyzes the divergence by categorizing it into contributions related to measurement, weight, and scope using this taxonomy. The measurement accounts for 57% of the variance, the scope accounts for 37%, and the weight accounts for 5%. Upon closer examination of the factors contributing to measurement discrepancy, the researcher discovers indications of rater bias, wherein a rater's overall view of a firm influences the way certain categories are evaluated. The results need a more thorough examination of the data used in the formulation of ESG ratings.

Zhang et al. (2022) analyze the connection between corporate investment decisions and environmental, social, and corporate governance (ESG) concerns of governments, with a focus on sustainability. By analyzing data on policy uncertainty, nation-level governance, and business-level balance sheets, we have determined that national governance has a substantial impact on company investment. Moreover, this research establishes that the ambiguity surrounding immigration and climate policy has a statistically substantial reducing impact on corporate investment, indicating that the societal and environmental outlook in the UK are vital in recruiting firm investment. Moreover, the research of how corporate leverage affects company investment demonstrates empirical evidence that companies may mitigate the negative effects of debt overhang by improving their environmental, social, and governance performance. These results have very substantial implications for climate change and the objectives of the COP26 conference.

The banking industry has widely used ESG models. Stakeholder-oriented governance and shareholder-oriented governance are two separate governance models that have been compared in the banking sector by Ferri & Leogrande (2015). The adoption of the ESG model often signifies the conclusion of a lengthy deliberation that originated with the concept of corporate social responsibility and led to the recognition of social, governance, and environmental concerns within bank governance (Leogrande & Ferri, 2021). Since the inception of European cooperative banks, the banking industry has placed significant importance on addressing social, ethical, and environmental issues (Ferri & Leogrande, 2023). The United States exhibits a direct relationship between GDP and ESG ratings, but in Europe, this relationship is inverse (Dell'Atti & Birindelli, 2018). One effective strategy that achieves several goals is integrating the Environmental, Social, and Governance (ESG) model into corporate governance. Large corporations use the ESG framework to showcase their commitment to social, ethical, and environmental issues, as well as to enhance their reputation among investors and consumers. As funders show more interest in backing ESG-based projects, a new kind of opportunistic behavior known as "greenwashing" has arisen. There is a positive correlation between the adoption of ESG models and procedures at the company level and the rise of GDP per capita. This suggests a strong connection between macroeconomic performance and microeconomic decision-making. Zhou et al. (2020) conducted

the study. According to Breedts et al. (2019), the MSCI ESG database indicates a direct relationship between GDP levels and improved ESG ratings from 2007 to 2017.

Stakeholder theory suggests that ESG practices contribute in obtaining the confidence and collaboration of stakeholders, receiving strategic reserves for corporate development, and boosting the efficiency of investments (Lio et al., 2021). There are three approaches that ESG performance promotes investment efficiency. ESG procedures decrease agency costs, to start. Businesses with strong corporate governance structures that can effectively restrict managers and minimise agency concerns are more likely to have high ESG performance (Lee and Kim, 2020). According to Matten and Moon (2008), good ESG information decreases agency costs, buffers against outside pressures, boosts investment efficiency, and minimises the negative effect of media coverage. Investments in ESG lead to more efficient business investments and decrease agency costs by decreasing managerial shortsightedness and lowering corporate free cash flow (Samet and Jarboui, 2017).

Second, by reducing financial limitations, ESG performance may increase investment efficiency. Investors get nonfinancial information via ESG disclosure, which also makes external funding easier (El Ghoul et al., 2011). ESG disclosure also helps ignorant investors get more knowledge, decreases stock price synchronisation, and promotes external oversight and attention (Kim et al., 2012).

Lastly, the market receives a good signal from ESG disclosure. Businesses often invest a certain amount of money to disseminate non-financial information to the public, which may lessen information asymmetry and make it easier for investors to find reputable businesses (Spence, 1973). According to Lins et al. (2017), effective ESG performance lowers the information asymmetry between businesses and investors and gives stakeholders more information to use when making choices. This lowers investor decision-making risk and increases investment efficiency. As a result, we put out the following theory.

H₁: ESG performance and investment efficiency are favourably correlated.

Design of Research

Data and Sample

Chinese A-share listed firms from 2013 to 2022 make up the sample for this study. The Bloomberg database gives information on ESG performance, while more financial information is available in the Wind and CSMAR databases. Here is the procedure for how the data is managed. To begin with, we have removed the financial and real estate company examples due to the fact that the banking sector has a very unique way of calculating financial statements. Second, we exclude samples such as ST and *ST to reduce the impact of outliers on the empirical results. Third, samples that have missing values are removed. Our final full sample consists of 60 businesses, which results in 600 firm-year data. All variables are winsorized at the 1 and 99 percent levels in order to reduce the effect of outliers.

Variables

Dependent variable

In accordance with Biddle et al. (2009), we gauge businesses' efficient investment level using the residual derived from model (1). The following is the model:

$$Inv_{i,t} = \partial_0 + \partial_1 Sales_{growth\ i,t-1} + v_{i,t} \tag{1}$$

The abbreviation "Inv" refers to firm I's investment efficiency in year t. Cash that is paid for the purchase and construction of fixed assets, intangible assets, and other long-term assets, as well as cash that is paid for the acquisition of subsidiaries and other business units, and cash that is paid for investment. The investment level for year t is calculated by taking the net cash recovered from the sale of fixed assets, intangible assets, and other long-term assets, subtracting the net cash obtained from the disposal of subsidiaries and other business units, and then adding the cash received from the recovery of investment. This amount is then divided by the total assets at the start of the period. Sales growth is the term used to describe the pace at which operational revenue increases. $v_{i,t}$ is the Model (1) regression residual.

The industry and annual estimate model (1) is used to establish the suitable amount of the company's optimal investment level and the remaining divergence from it. The residual fraction indicates how far the company is from its optimal level of investment. As the absolute magnitude of the residual grows, the efficiency of the investment falls.

Independent variable

As stated by Minutalo et al. (2019), we gauge ESG performance using the Bloomberg database's ESG score. The database of Bloomberg makes available to investors the degree of CSR reporting, together with the E, S, and G single index scores and the ESG comprehensive index score. The quality of ESG disclosure determines the score. Scores vary from 0-100. A company's ESG score raises with the amount of information it provides. The ESG score, methodology for scoring, and score report data for each firm are available to investors.

The subsequent are the justifications for selecting the Bloomberg database. First, Bloomberg's ESG rankings are more objective and are obtained from firm CSR/sustainability report or other public sources. Second, Bloomberg's ESG scores are additional persuasive and span a larger range than other ESG ratings.

Control variables

Following Batess (2005), the researcher controlled Board size (BSIZ), Free cash flow of enterprise (FCF), Return on Asset (ROA), Firm size (FSIZ), leverage (LEV). Table 1 provides the subsequent definitions for the variables.

Table 1: Variable Explanation

Category	Variable name	Sign	Implication
Dependent variable	Investment efficiency	Inv	The Biddle model determines the investment efficiency residual's absolute value.
Independent variable	ESG performance	ESG	Bloomberg database/100 is used to generate the ESG performance score.
Control variables	Board size	BSIZ	The number of directors expressed as the natural logarithm.
	Return on Asset	ROA	Net profit to total assets as a ratio.
	Free cash flow of Enterprise.	FCF	Free cash flow is divided by total assets.
	Firm size	FSIZ	Natural logarithm of total assets of the company.

	Leverage	LEV	The proportion of total liabilities to total assets.
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Econometric model

This study uses the Generalized Method of Moments (GMM), a dynamic panel data estimator, for estimate in order to address econometric issues including autocorrelation, fixed effects, and endogeneity. When analyzing panel data, GMM is often used. This broad estimator is intended for scenarios with "small T as well as large N" panels, while denotes a small number of periods also a large number of persons or observations. For linear functional relationships, it is also employed. Because heteroscedasticity can emerge after one-step estimations, a 2-step GMM estimator is employed for all estimations in this research work. The following is the regression model used in this study for total fixed assets:

$$IE_{i,t} = \alpha + \delta_0 IE_{i,t-1} + \delta_1 ESG_{i,t} + \delta_2 BSIZ_{i,t} + \delta_3 ROA_{i,t} + \delta_4 CFC_{i,t} + \delta_5 FSIZ_{i,t} + \delta_5 LEV_{i,t} + \epsilon_{i,t} \tag{1}$$

Equation (1) illustrates the connections between investment efficiency ESG, board size, ROA, CFC, firm size, and leverage. α is for intercept, δ is the coefficient and ϵ is for the error term.

Analysis

Descriptive Analysis

Descriptive statistics demonstrate the disparate data descriptions. The basic components of Descriptive statistics include observation, standard deviation, mean, and minimum as well as highest values. In Table 2: descriptive statistics provide us with a summary of the basic information about the variables.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
IE	600	7.098	.716	5.674	10.41
ESG	600	661.44	122.94	410.69	933.12
BSIZ	600	240.23	43.03	153.63	354.84
ROA	600	194.19	89.75	29.42	322.79
FCF	600	226.93	16.77	207.39	257.72
FSIZE	600	8.073	.574	6.78	9.382
LEV	600	.58	.446	.005	2.534

The table represents the descriptive statistics of China. The dependent variable is investment efficiency. ENV is for environment, SOC is for social; GOV is for governance, All of these is an independent variables. The control variables are, Leverage is represented by LEV, board size by BSIZ, return on asset by ROA, free cash flow by FCF and firm size by FSIZE.

Correlation Matrix

The present research investigates the collinearity among variables using a correlation matrix. Table 3 displays the correlation matrix for investment efficiency. The correlations among all variables fall below the threshold of 70% (Gujarati & Porter, 2010; Greene & Hensher, 2003; Jamal et al., 2023). Therefore the data have not the problem of heteroskedasticity and the researcher can used the data for further investigation.

Table 3: Pearson Correlation for Investment Efficiency

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) IE	1						
(2) ESG	0.018	1					
(3) BSIZ	0.137**	0.706***	1				
(4) ROA	-0.047	0.944***	0.464***	1			
(5) FCF	0.035	0.483***	0.144***	0.379***	1		
(6) FSIZE	0.079	0.530***	0.504***	0.446***	0.200***	1	
(7) LEV	0.209**	-0.154***	0.049	-0.234***	0.000	-0.175***	1

The coefficients of Pearson correlation between the variables and their significance levels are shown in Table 3. Table 1 describes the variables. Values statistically significant at 1%, 5%, and 10% are represented by the symbols ***, **, and *.

Generalized Method of Moments

For estimating purposes, this study uses the Generalized Method of Moments (GMM), a dynamic panel data estimator. Table 4 displays the outcomes and results.

Table 4: Estimation Results for Fixed Assets

Variables	Model	Prob.
L.IE	0.79***	0.00
ESG	0.004***	0.003
BSIZ	-0.002***	0.00
ROA	.001***	0.00
FCF	.029**	0.028
FSIZ	.001**	.029
LEV	.026	.165
Constant	-7.212**	0.012
Year Dummies	NO	
AR(1)	-1.48	0.147
AR(2)	-1.19	0.246
Hansen	46.40	0.954
No. Of groups	60	-
No. Of instruments	51	-
No of observations	549	-

Note: ***, **and * are significance at 1%, 5% and 10% similarly.

Results and Discussion

Table 4 show the practical findings obtained by the Generalized Method of Moments (GMM) technique. The findings indicate that the F-statistics for entirely variables are statistically significant. The EI has positively correlated with ESG coefficient. The positive influence of ESG (Environmental, Social, and Governance) factors on investment efficiency (IE) also demonstrates the principles of stakeholder theory. The stakeholder theory proposed that optimal activities and performance contribute to the long-term value of the organization. Weber (2018) suggests that an organization's reputation is enhanced by investments in Environmental, Social, and Governance

(ESG) initiatives. In the study conducted by Ahmad et al. (2022) and Pastor et al. (2022), showed that there is a positive correlation between a company's ESG pillars and its equity returns. However, Aswani et al. (2023) showed insignificant association between the two factors.

One effective strategy that achieves several goals is integrating the Environmental, Social, and Governance (ESG) model into corporate governance. Large corporations use the ESG framework to showcase their commitment to social, ethical, and environmental issues and enhance their reputation among investors and consumers. As investors show more interest in backing ESG-based projects, a new kind of opportunistic behavior known as "greenwashing" has arisen, Zhou et al. (2020). The findings also suggest a significant and positive association involving the FCF and investment efficiency. The results align with a substantial collection of proven prior empirical findings (Jamal et al., 2023; Abdullahi et al., 2019; Khyareh & Amini, 2021). The findings also suggest that the firm size (FSIZ) has a positive relation with investment efficiency. Our findings align with Keeley et al. (2022) in emphasizing the significance of the firm size on investment efficiency.

Both IE and ROA are positively correlated, according to the results. The investment efficiency of firm is enhance by return on assets. Corporate ESG regulation guides enterprises effectively to adopt environmentally responsible investment and finance procedures. It also facilitates the promotion of sustainable development, with the direction of financial regulators (Li et al., 2023). The leverage shows insignificant result with investment efficiency. The following references support the same results, (Bebchuk et al., 2009; La Porta et al., 2002 Core et al., 1999; Gompers et al., 2003).

An inverse relationship exists between the size of board and its level of investment efficiency. According to Velte (2020), bigger board size of enterprises is more susceptible to under investment issues when unfavorable news arises about their ESG (Environmental, Social, and Governance) performance. This ultimately directs to a decrease in the efficiency of investments. Nevertheless, this correlation is not evident in small enterprises. Our research findings suggests that bigger companies are more susceptible to under investment problems caused by negative environmental, social, and governance (ESG) events, highlighting the importance of ESG reputation for these businesses.

The results also confirm the presence of adverse 1st-order serial correlation (AR(1)) as well as 2nd-order serial correlation (AR(2)). The study did not found any first or second-order serial correlation. Furthermore, the Hansen test findings indicate that the null hypothesis of applicable instruments cannot be rejected. This suggests that the instruments used in the study are legitimate and there is no link between the error term and the instruments. Table 4 indicates that there are 60 groups and 51 instruments.

Conclusion

This study investigates the consequence of environmental, social, and governance (ESG) components on the investment efficiency by Chinese firms between 2013 and 2022. This work is a significant involvement to the existing body of literature. This research examines the impact of ESG score on investment efficiency. Furthermore, the researcher explores the influence of environmental, social, and governance (ESG) factors on investment efficiency by using a sophisticated and robust panel data model known as the two-step dynamic generalized method of moments (GMM). The sample for this research consists of non-financial enterprises that are listed

on the stock exchange of China. The data pertaining to all variables is gathered from Thomson Reuter Datastream, CSMAR, Bloomberg database, and Wind databases.

The theoretical frameworks used in this research study include stakeholder theory, shareholder theory, and institutional theory. The study's conclusions indicate a optimistic relation between the ESG component and investment efficiency. Our findings confirm the main hypothesis that ESG provides a more accurate description of China's investment efficiency patterns.

The findings of the present examine study exhibit significant implications for non-financial corporations, both local and international investors, as well as current shareholders. Additionally, these conclusions have relevance for management and legislators. The present research has shown that ESG aspects have a positive impact on investment efficiency. This information is crucial for both local and international stakeholders who may get advantages from the ESG elements. The present analysis assists investors and shareholders in determining whether or not to allocate funds to ESG aspects.

There are several restrictions on how far these findings may be applied. First, we only look at how ESG performance affects investment efficiency for Chinese listed companies; we don't look at other developing nations. Future research should increase the sample size to include companies from all developing nations. Second, ESG reporting scores are used in this work to quantify ESG performance. Non-comparable and imperfect ESG reporting regulations have the potential to degrade the validity of ESG ratings.

References

1. Abdi, Y., Li, X., & Càmara-Turull, X. (2020). Impact of sustainability on firm value and financial performance in the air transport industry. *Sustainability*, 12(23), 9957.
2. Aktaş, R., & Ünal, S. (2015). The relationship between financial efficiency ratios and stock prices: an empirical investigation on insurance companies listed in Borsa Istanbul. *Finansal Araştırmalar ve Çalışmalar Dergisi*, 7(12), 1-16.
3. Alimov, A. (2014). Product market competition and the value of corporate cash: Evidence from trade liberalization. *Journal of Corporate Finance*, 25, 122-139.
4. Al-Matari, E. M., Al-Swidi, A. K., Fadzil, F. H., & Al-Matari, Y. A. (2012). The impact of board characteristics on firm performance: Evidence from nonfinancial listed companies in Kuwaiti Stock Exchange. *International Journal of Accounting and Financial Reporting*, 2(2), 310-332.
5. Alqatamin, R., Aribi, Z. A., & Arun, T. (2017). The effect of CEOs' characteristics on forward-looking information. *Journal of Applied Accounting Research*, 18(4), 402-424.
6. Arianpoor, A. (2019). Impact of audit report lag, institutional ownership and board characteristics on financial performance. *Iranian Journal of Accounting, Auditing and Finance*, 3(2), 83-97.
7. Ashfaq, K., & Rui, Z. (2019). Revisiting the relationship between corporate governance and corporate social and environmental disclosure practices in Pakistan. *Social Responsibility Journal*, 15(1), 90-119.
8. Baños-Caballero, S., García-Teruel, P. J., & Martínez-Solano, P. (2014). Working capital management, corporate performance, and financial constraints. *Journal of business research*, 67(3), 332-338.
9. Belkhir, M. (2009). Board of directors' size and performance in the banking industry. *International Journal of Managerial Finance*, 5(2), 201-221.

10. Bhagat, S., & Bolton, B. (2019). Corporate governance and firm performance: The sequel. *Journal of Corporate Finance*, 58, 142-168.
11. Biddle, G. C., Hilary, G., & Verdi, R. S. (2009). How does financial reporting quality relate to investment efficiency?. *Journal of accounting and economics*, 48(2-3), 112-131.
12. Black, B. S., De Carvalho, A. G., & Gorga, É. (2012). What matters and for which firms for corporate governance in emerging markets? Evidence from Brazil (and other BRIK countries). *Journal of Corporate Finance*, 18(4), 934-952.
13. Black, F., & Scholes, M. (1974). The effects of dividend yield and dividend policy on common stock prices and returns. *Journal of financial economics*, 1(1), 1-22.
14. Bushee, B. J. (1998). The influence of institutional investors on myopic R&D investment behavior. *Accounting review*, 305-333.
15. Bushee, B. J. (2001). Do institutional investors prefer near-term earnings over long-run value?. *Contemporary accounting research*, 18(2), 207-246.
16. Cassar, G., & Holmes, S. (2003). Capital structure and financing of SMEs: Australian evidence. *Accounting & Finance*, 43(2), 123-147.
17. Chen, H. J., & Lin, S. H. (2013). Managerial optimism, investment efficiency, and firm valuation. *Multinational Finance Journal*, 17(3/4), 295-340.
18. Chen, M. Y. (2013). Adjustments in managerial ownership and changes in firm value. *International Review of Economics & Finance*, 25, 1-12.
19. Chung, R., Firth, M., & Kim, J. B. (2002). Institutional monitoring and opportunistic earnings management. *Journal of corporate finance*, 8(1), 29-48.
20. De Andres, P., Azofra, V., & Lopez, F. (2005). Corporate boards in OECD countries: Size, composition, functioning and effectiveness. *Corporate Governance: An International Review*, 13(2), 197-210.
21. Dybvig, P. H., & Warachka, M. (2015). Tobin's q does not measure firm performance: Theory, empirics, and alternatives. *Empirics, and Alternatives (March 5, 2015)*.
22. Elyasiani, E., Jia, J. J., & Mao, C. X. (2010). Institutional ownership stability and the cost of debt. *Journal of Financial Markets*, 13(4), 475-500.
23. Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of political economy*, 88(2), 288-307.
24. Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The journal of law and Economics*, 26(2), 301-325.
25. Gerged, A. M., Beddewela, E., & Cowton, C. J. (2021). Is corporate environmental disclosure associated with firm value? A multicountry study of Gulf Cooperation Council firms. *Business Strategy and the Environment*, 30(1), 185-203.
26. Hall, B. H., & Lerner, J. (2010). The financing of R&D and innovation. In *Handbook of the Economics of Innovation* (Vol. 1, pp. 609-639). North-Holland.
27. Hanif, M., Sibte-e-Ali, M., Asghar, M. M., & Farhan, M. (2024). Macroeconomic Factors of Financial Performance: A Case Study of Cement Sector of Pakistan. *Review of Applied Management and Social Sciences*, 7(4), 929-937.
28. Hayashi, F. (1982). Tobin's marginal q and average q: A neoclassical interpretation. *Econometrica: Journal of the Econometric Society*, 213-224.
29. Hermalin, B. E., & Weisbach, M. S. (1991). The effects of board composition and direct incentives on firm performance. *Financial management*, 101-112.
30. Houcine, A. (2013). Does accounting conservatism affect firm investment efficiency in an emerging market? Evidence from Tunisian context. *African Journal of Accounting, Auditing and Finance*, 2(3), 209-232.

31. Houcine, A. (2017). The effect of financial reporting quality on corporate investment efficiency: Evidence from the Tunisian stock market. *Research in International Business and Finance*, 42, 321-337.
32. Husnan, S. (1998). *Manajemen Keuangan: Teori dan Penerapan (Keputusan Jangka Panjang)*, Buku 1.
33. Jensen, M. C., & Meckling, W. H. (1919). Theory of the firm: Managerial behavior, agency costs and ownership structure. In *Corporate governance* (pp. 77-132). Gower.
34. John, K., & Litov, L. (2010). Managerial entrenchment and capital structure: new evidence. *Journal of Empirical Legal Studies*, 7(4), 693-742.
35. Khaoula, A. L. I. A. N. I., & Ali, Z. M. (2012). Demographic diversity in the board and corporate tax planning in American firms. *Business Management and Strategy*, 3(1), 72-86.
36. Koh, P. S. (2003). On the association between institutional ownership and aggressive corporate earnings management in Australia. *The British accounting review*, 35(2), 105-128.
37. Laksmana, I., & Yang, Y. W. (2015). Product market competition and corporate investment decisions. *Review of Accounting and Finance*, 14(2), 128-148.
38. Lemma, T. T., Negash, M., Mlilo, M., & Lulseged, A. (2018). Institutional ownership, product market competition, and earnings management: Some evidence from international data. *Journal of Business Research*, 90, 151-163.
39. Lemma, T. T., Negash, M., Mlilo, M., & Lulseged, A. (2018). Institutional ownership, product market competition, and earnings management: Some evidence from international data. *Journal of Business Research*, 90, 151-163.
40. Lokuwaduge, C. S. D. S., & Heenetigala, K. (2017). Integrating environmental, social and governance (ESG) disclosure for a sustainable development: An Australian study. *Business Strategy and the Environment*, 26(4), 438-450.
41. Mahadeo, J. D., Soobaroyen, T., & Hanuman, V. O. (2012). Board composition and financial performance: Uncovering the effects of diversity in an emerging economy. *Journal of business ethics*, 105, 375-388.
42. Marashdeh, Z. M. S. (2014). *The effect of corporate governance on firm performance in Jordan* (Doctoral dissertation, University of Central Lancashire).
43. Mnasri, K., & Ellouze, D. (2015). Ownership structure, product market competition and productivity: Evidence from Tunisia. *Management Decision*, 53(8), 1771-1805.
44. Morck, R., Shleifer, A., & Vishny, R. W. (1990). Do managerial objectives drive bad acquisitions?. *The journal of finance*, 45(1), 31-48.
45. Natarajan, R., Sivakavitha, S., & Vasani, S. A. (2020). Relationship between stock return and firms' financial performance in BSE listed companies. *European journal of molecular & clinical medicine*, 7(3), 4553-4559.
46. Nugroho, A. C., & Stoffers, J. (2020). Market competition and agency problem: a study in Indonesian manufacturing companies. *Jurnal dinamika manajemen*, 11(1), 65-77.
47. Nyman, I. (2005). Stock market speculation and managerial myopia. *Review of Financial Economics*, 14(1), 61-79.
48. Paniagua, J., Rivelles, R., & Sapena, J. (2018). Corporate governance and financial performance: The role of ownership and board structure. *Journal of Business Research*, 89, 229-234.
49. Peress, J. (2010). Product market competition, insider trading, and stock market efficiency. *The Journal of Finance*, 65(1), 1-43.
50. Pound, J. (1992). Beyond takeovers: Politics comes to corporate control. *Harvard business review*, 70(2), 83-93.

51. Ramdani, D., & Witteloostuijn, A. V. (2010). The impact of board independence and CEO duality on firm performance: A quantile regression analysis for Indonesia, Malaysia, South Korea and Thailand. *British Journal of Management*, 21(3), 607-627.
52. Ramsay, I. M., & Blair, M. (1993). Ownership concentration, institutional investment and corporate governance: An empirical investigation of 100 Australian companies. *Melb. UL Rev.*, 19, 153.
53. Rashed, A., Abd El-Rahman, E., Isamil, E., & Abd El-Samea, D. (2018). Ownership structure and investment efficiency: Evidence from Egypt. *International Journal of Accounting and Financial Reporting*, 8(4), 1-22.
54. Rauf, F., Wanqiu, W., Naveed, K., Qadri, S. U., & Ali, M. S. E. (2024). How ESG reporting is effected by sustainable finance and green innovation: moderating role of sales growth. *Environmental Science and Pollution Research*, 31(5), 7246-7263.
55. Richardson, S. (2006). Over-investment of free cash flow. *Review of accounting studies*, 11, 159-189.
56. Riyadh, H. A., Sukoharsono, E. G., & Alfaiza, S. A. (2019). The impact of corporate social responsibility disclosure and board characteristics on corporate performance. *Cogent Business & Management*, 6(1), 1647917.
57. Saidat, Z., Silva, M., & Seaman, C. (2019). The relationship between corporate governance and financial performance: Evidence from Jordanian family and nonfamily firms. *Journal of Family Business Management*, 9(1), 54-78.
58. Salehi, M., Zimon, G., Arianpoor, A., & Gholezoo, F. E. (2022). The impact of investment efficiency on firm value and moderating role of institutional ownership and board independence. *Journal of Risk and Financial Management*, 15(4), 170.
59. Shahwan, T. M. (2015). The effects of corporate governance on financial performance and financial distress: evidence from Egypt. *Corporate Governance*, 15(5), 641-662.
60. Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. *Journal of political economy*, 94(3, Part 1), 461-488.
61. Sibt e Ali, M., Faridi, M. Z., Javed, K., & Javaid, M. Q. (2024). Exploring the impact of Green Supply Chain Management Practices on Environmental Performance of Firms: What is the Role Intellectual Capital and Green Information System. *Pakistan JL Analysis & Wisdom*, 3, 83.
62. Smirlock, M., Gilligan, T., & Marshall, W. (1984). Tobin's q and the Structure-Performance Relationship. *The American Economic Review*, 74(5), 1051-1060.
63. Stein, J. C. (2003). Agency, information and corporate investment. *Handbook of the Economics of Finance*, 1.
64. Suhadak, S., Kurniaty, K., Handayani, S. R., & Rahayu, S. M. (2018). Stock return and financial performance as moderation variable in influence of good corporate governance towards corporate value. *Asian Journal of Accounting Research*, 4(1), 18-34.
65. Uyar, A., Kilic, M., Koseoglu, M. A., Kuzey, C., & Karaman, A. S. (2020). The link among board characteristics, corporate social responsibility performance, and financial performance: Evidence from the hospitality and tourism industry. *Tourism Management Perspectives*, 35, 100714.
66. Vintilă, G., & Gherghina, Ș. C. (2014). The impact of ownership concentration on firm value. Empirical study of the Bucharest Stock Exchange listed companies. *Procedia Economics and Finance*, 15, 271-279.
67. VU, T. M. T. (2020). Stock Price Co-movement and Firm's Ownership Structure in Emerging Market. *The Journal of Asian Finance, Economics and Business*, 7(11), 107-115.

68. Xie, J., Nozawa, W., Yagi, M., Fujii, H., & Managi, S. (2019). Do environmental, social, and governance activities improve corporate financial performance?. *Business Strategy and the Environment*, 28(2), 286-300.
69. Yermack, D. (2006). Board members and company value. *Financial Markets and Portfolio Management*, 20, 33-47.
70. Zafar, N., Urooj, S. F., & Durrani, T. K. (2008). Interest rate volatility and stock return and volatility. *European journal of economics, finance and administrative sciences*, 14(1), 135-140.
71. Zhang, C., Cheong, K. C., & Rasiah, R. (2018). Board independence, state ownership and stock return volatility during Chinese state enterprise reform. *Corporate Governance: The International Journal of Business in Society*, 18(2), 220-232.
72. Zimon, D., & Zimon, G. (2019). The impact of implementation of standardized quality management systems on management of liabilities in group purchasing organizations. *Quality Innovation Prosperity*, 23(1), 60-73.
73. Zimon, G., Nakonieczny, J., Chudy-Laskowska, K., Wójcik-Jurkiewicz, M., & Kočański, K. (2021). An analysis of the financial liquidity management strategy in construction companies operating in the Podkarpackie Province. *Risks*, 10(1), 5.