



Insights that Drive Financial Excellence

Journal of Accounting, Finance & Business Insights (JAFBI)

Volume 1, Issue 2, 2025



Research Journals Online

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DOI: <https://doi.org>

Journal of Accounting, Finance & Business Insights

Journal homepage: <https://rjsaonline.org/index.php/JAFBI>



Islamic Capital Market Instruments and Performance in Malaysia

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ARTICLE INFO	ABSTRACT
<p>Received: March 05, 2025</p> <p>Revised: March 30, 2025</p> <p>Accepted: April 17, 2025</p> <p>Available Online: April 24, 2025</p> <p>Keywords: Islamic Capital Market; Sukuk; Shariah-Compliant Equities; Malaysia; Financial Performance; Islamic Finance.</p> <p>Corresponding Author: adeelabbas15690@gmail.com</p>	<p><i>Islamic Capital Market (ICM) has become a critical aspect of the Malaysian financial system which has played a significant role in the economic growth, financial stability and ethical investment at the expense of financial markets. Islamic capital market instruments, which include Sukuk, Shariah compliant equities, Islamic funds and exchange traded funds, are based on Shariah principles, with their corner stones focused on risk sharing, asset backed financing, and the absence of interest (riba), uncertainty (gharar), and speculation (maysir). Malaysia is currently recognized to be a global leader in the Islamic capital market due to its detailed regulation of the capital market, strong institutional backing and unceasing innovation of Islamic financial products. The paper will discuss the key Islamic capital market instruments in Malaysia and analyse their performance according to the growth of the market, its stability and investor confidence. The analysis brings out regulatory institutions like the Securities Commission Malaysia and the Shariah Advisory Council in enhancing transparency and credibility. Moreover, the paper discusses the stability of Islamic capital market instruments in financial turbulent times and their role in attaining sustainable and inclusive economic growth. These results indicate that the Islamic capital market in Malaysia has been performing excellently due to good governance, diversification of products, and the rising global needs in having ethical and Sharia compliant investments.</i></p>

Introduction

The world financial system has been significantly changing throughout the recent decades, and more focus has been turned to ethical finance, risk-sharing tools, and financial inclusiveness. In this dynamic environment, Islamic finance has been on the spotlight, as a possible alternative to traditional finance, especially in Muslim dominated countries and even in non-Muslim ones in search of ethical investment solutions. Islamic capital market is one of the focus areas of the Islamic financial system which supports the other segments of the system, i.e. Islamic banking and takaful by raising long terms funds and investment activities in line with the Shariah principles (Iqbal and Mirakhor, 2011). In contrast to traditional capital markets that depend on interest-based instruments and a pure speculative market, the Islamic capital market focuses on asset-backed financing, profit-and-loss sharing, and socio-economic justice thus investing in financial operation to the real economic development.

Malaysia is at the leading edge of the development of the Islamic capital markets as it has one of the most efficient and extensive Islamic financial systems globally. As the growth of the Islamic capital market, Malaysia has continued to enhance its Islamic capital market since it became possible with the introduction of Shariah-compliant securities in the late 1980s through regulatory reforms, institutional capacity building and product innovation (Securities Commission Malaysia, 2022). The active strategy of the country has made it a world center of issuing Sukuk and management of Islamic funds, which have attracted both national and foreign investors. The Islamic capital market in Malaysia exists without undermining the efficiency and competitiveness of the conventional capital market since it functions on a dual financial system, which presents an investor with a wide selection of Shariah-compliant instruments without any harm to the efficiency and competitiveness of the capital markets (Abdullah and Chee, 2010).

The Islamic capital market instruments are in such a way that they are modeled to adhere to the key principles of Shariah, which includes the prohibition of interest (riba), excessive uncertainty (gharar), and gambling (maysir), and encourages ethical behavior, transparency and equity in the financial transactions. Some of the brightest instruments include Sukuk

which are Shariah compliant versions of conventional bonds that have ownership interests in tangible assets or projects and not a form of debt obligations. Malaysia has also taken over the world Sukuk market with a significant portion of the total issuance with the much confidence of the investors and the support of the policies (IFSB, 2023). Sukuk have been extensively used to fund infrastructural projects, business growth, and government spending and thus it becomes vital in the economic growth of a nation.

Besides Sukuk, Shariah compliant equities are also a large part of the Islamic capital market in Malaysia. These equities are shares of company whose business activities and financial structure are in line with Shariah screening criteria as provided by the Shariah Advisory Council of Securities Commission Malaysia. Screening is done with those companies that deal with illegal activities, including alcohol, gambling, traditional financial services, and other non-permitted sectors as well as setting financial ratio standards to restrict high leverage and interest income (SC Malaysia, 2021). Availability of Shariah compliant equities has ensured that Muslim investors are in the stock market to actively engage in stock market in accordance with religious values hence increasing financial inclusion and participation in the market.

Islamic collective investment schemes, such as the Islamic unit trusts, mutual funds and exchange-traded funds, also increase the size of the Islamic capital market by opening different diversified investment opportunities, which suit various levels of risk. These funds only invest in Shariah-compliant assets which are governed by the strict frameworks to maintain compliance. The rise of the number of Islamic funds in Malaysia is an indication of the growing demand of the professionally administered ethical investment vehicle and it is a sign of the maturity of the Islamic capital market ecosystem (Mohammad & Shahwan, 2013). Furthermore, the inclusion of the environmental, social, and governance factors in the Islamic investment strategies has also strengthened the applicability of Islamic capital market instruments in enhancing sustainable finance.

The operation of the Islamic capital market instruments has drawn a lot of academic and policy attention especially as far as their ability to stand up during crises experienced in the financial system as well as when the market faces volatility. Empirical evidence indicates that Islamic financial instruments tend to be lower in terms of volatility and more stable than conventional financial instruments due to the asset-backed features and limitations to speculation (Hassan and Dridi, 2010). The Islamic capital market in Malaysia proved to be rather robust in relation to the global financial crisis of 2008 and the economic shocks of the COVID-19 pandemic that brought certain destabilization to the entire financial structure, which may indicate its potential in the stabilizing forces (SC Malaysia, 2022). This has increased investor confidence and enhanced the status of Malaysia as the destination of investment in the Islamic investment.

There has been regulatory and institutional support that has played a big role in affecting the performance and credibility of the Islamic capital market in Malaysia. The Securities Commission Malaysia with the Shariah Advisory Council takes centre stage in developing policies, providing advice and all aspects of Shariah compliance of all the activities in the market. Having a centralized system of Shariah governance improves consistency, transparency, and investor confidence, which makes the Islamic capital market in Malaysia stand out among the rest (Zulkhibri, 2015). Moreover, the proceeding regulatory innovation, including the launch of sustainable and responsible investment Sukuk, is one of the indications of the Malaysian efforts towards the alignment of Islamic finance with the global agendas on sustainability.

The Islamic capital market is experiencing challenges despite its impressive growth such as integration of markets, standardization of products, and international competitiveness. The necessity to reconcile the Shariah adherence with the financial innovation must be subject to on-going scholarly research and policy development. The dynamics of performance of the Islamic capital market instruments are hence necessary to the policymakers, investors, and academics who need to improve efficiency and sustainability of the markets. Malaysia is a good example in this regard because it has well-developed infrastructure, diversified instruments and extensive market data.

The purpose of this research is to add to the existing literature on the topic of Islamic capital market instruments that represent the major ones in Malaysia and analyze their performance in the framework of the financial system. The paper aims at giving an insight into the roles of the Islamic capital market instruments in ensuring economic growth, financial stability and ethical investment practices through the analysis of Sukuk, Shariah-compliant equities and Islamic investment funds. The Malaysian experience has valuable lessons to other nations that hope to build or enhance their Islamic capital markets, especially at a time when more and more people are demanding responsible and inclusive finance.

Literature Review

Islamic capital market is one of the key pillars of the Islamic financial system as it has been highly researched in the literature to enable long term investment and economic development within the Shariah principles. There is a general consensus among scholars that Islamic capital markets are fundamentally different than conventional ones on the basis of their prohibition of interest (riba), excessive uncertainty (gharar), and speculative practices (maysir) and focus on ethical investments and asset-

backed financing (Iqbal & Mirakhor, 2011). These unique attributes have made the Islamic capital markets a potential alternative to the investors who want to enjoy the financial returns without compromising on the moral and religious values and principles. The country of Malaysia has been researched widely owing to its developed regulatory environment coupled with its leadership in the development of the Islamic capital market.

The initial research concerning the Islamic capital market in Malaysia is centered on the development of institutional and regulatory aspects of the country. Abdullah and Chee (2010) contend that the success of the Malaysian economy has been because of its dual financial system whereby the Islamic and conventional capital markets exist and function simultaneously on the same regulatory framework. This has made the Islamic instruments to compete favorably with the advantage of conventional market infrastructure. It has been established that the formation of the Shariah Advisory Council at the Securities Commission Malaysia is one of the key success factors in maintaining a consistent Shariah governance and investor confidence (Zulkhibri, 2015). Centralized Shariah screening has also brought uncertainty to an end to the market participants and standardization in Islamic financial products.

The significance of sukuk in the literature has been high receiving the greatest attention as the largest Islamic capital market instrument in Malaysia. Sukuk are often said to be shariah compliant substitutes to search bonds, which are designed to reflect ownership in underlying assets as opposed to reflecting debt liabilities (Wilson, 2008). According to the empirical research, Malaysia leads in the global Sukuk market on the volume of issuance, innovation, and variety of structure (IFSB, 2023). Godlewski, Turk-Ariss, and Weill (2013) claim that Sukuk issues have a positive signaling effect on firm value, which is signified by the perception of the investors of better governance and ethical commitment. Sukuk have been a common means of financing the infrastructure, development of the public sector, and company funding in the Malaysian context and have played an important role in the capital formation (Securities Commission Malaysia, 2022).

The theme of Sukuk performance compared to conventional bonds has been common in scholarly literature. According to a number of studies Sukuk have the same or a little lowest returns but are more stable in times of financial stress (Hassan and Dridi, 2010). This stability is usually due to the fact that they are asset-backed and have limitations to speculative trading. Rahim and Zakaria (2013) in a Malaysian based study establish that Sukuk returns are less volatile than ordinary bond returns and are hence appealing to risk-averse investors. Nevertheless, other researchers warn that the growing application of debt-like Sukuk frameworks could water down its theoretical underpinnings of risk sharing (Khan, 2010).

Another significant part of the Islamic capital market is Shariah compliant equities which have been widely studied in the literature. These equities are filtered using business operations and financial ratios to make sure that they abide by the Shariah values. Malaysia has a high share of Shariah-compliant stock, which according to the studies, allows Islamic investors to have a wide market participation (SC Malaysia, 2021). When Ho, Rahman and Yusuf (2014) suggest Shariah screening has no significant impact on portfolio diversification and returns, they disprove the argument that ethical restrictions hinder investment returns. Conversely, Ashraf and Mohammad (2014) believe that the Shariah-compliant equities can perform better than the conventional stocks when the market is declining because of the lesser leverage, as well as exposure to the speculative sectors.

The Islamic and conventional stock index performance have also been well examined when compared. According to several studies, there is no long-term difference in returns between Islamic and conventional indices in the Malaysian market that show market efficiency and competitiveness (Abbes, Trichilli, and Masmoudi, 2015). Nevertheless, on the one hand, Islamic indices are more resistant in crisis situations, which is why the concept of Islamic-compliant principles of investment strengthens the financial stability (Jawabi, Jawabi, and Louhichi, 2014). These results support the claim that the Islamic capital market instruments can be used as stabilizers of the overall financial system.

Collective investment schemes involving Islamic unit trusts and exchange-traded funds have grown at a high rate in Malaysia and become of increased academic interest. These investments offer diversification of exposure to Shariah-compliant investments and are subjected to high levels of compliance and disclosure. Mohammad and Shahwan (2013) also discover that Islamic mutual funds in Malaysia are competent when compared to conventional funds with the factor of risk in terms of risk-adjusted performance. Likewise, Elfakhani, Hassan and Sidani (2005) state that professional fund management and regulatory control can counter the inefficiency that could be present in Shariah restrictions. It has also been attributed to the increased awareness of ethical and socially responsible investment, which has also led to the growth of Islamic funds.

Gaining momentum as a new source of research, sustainability and environmental, social, and governance (ESG) principles are the new entries to the Islamic capital market instruments. Researchers claim that Islamic finance is inherently oriented towards the goals of sustainable finance because it is focused on social justice, stewardship and the real world economy (Dusuki and Abdullah, 2007). The introduction of Sustainable and Responsible Investment (SRI) Sukuk by Malaysia has been described as a new strategy that helps to mitigate the gap between Islamic finance and global sustainability agenda (SC

Malaysia, 2022). It has been empirically indicated that SRI Sukuk appeal to a wider range of investors and help Malaysia to become more competitive in the ethical finance markets worldwide (Azmi, Non, and Ab Aziz, 2019).

In macroeconomic point of view, a number of studies look into how Islamic capital market contribute towards economic growth and financial development. In Malaysia, Furqani and Mulyany (2009) find a positive long run relationship between Islamic financial development and economic growth. On the same note, Caporale and Helmi (2018) state that well-established Islamic capital markets contribute to expanding financial inclusion by offering investment opportunities to segments, which are typically not part of traditional finance. The mobilization of savings and redirecting of funds into productive sectors by the Islamic capital market instruments has been pointed as one of the reasons behind inclusive growth.

Although these positive results were recorded, the literature also shows that the Islamic capital market in Malaysia is facing challenges. The problems of the complexity of products, differences in the Shariah interpretation, and the integration of the markets remain a topic of scholarly discussion (Obaidullah, 2016). There has been an argument by some researchers that over dependence on the use of hybrid and debt based instruments can erode the initial purpose of Islamic finance (Chapra, 2009). Others note that the Shariah standards of the international community should be harmonized more to encourage international investment and market expansion (Zaher and Hassan, 2001).

The literature in general displays the image of the Islamic capital market of Malaysia as one of the most developed and resistant in the world due to the high level of regulation, diversities of instruments and the constant innovations. The opinion that Islamic capital market instruments compete effectively with the conventional counterparts and provide further stability and moral worth is backed by empirical evidence to a large extent. Nevertheless, the literature also reveals that continuing research is critical in order to mitigate new challenges in order to keep in line with the premise of Islamic finance performance gains. This paper is based on the previous studies by summarizing the existing evidence on the performance of essential Islamic capital market instruments in Malaysia, which adds to a better understanding of their functions in fostering sustainable and inclusive financial growth.

Methodology

Research Design

The research design would be quantitative research design, which is aimed at analyzing the performance of Islamic capital market instruments in Malaysia. The quantitative methodology is suitable because it will be possible to measure the objectively, compare statistics, and empirically verify the relationships between Islamic capital market instruments and the market performance indicators (Creswell, 2014). The research design utilized in the study is the longitudinal research design, where secondary time-series data is used to capture the trends and performance dynamics and volatility pattern over time. It is one of the most popular designs applied in capital market research because it allows one to examine the performance behavior under various economic circumstances (Brooks, 2019).

Sources and sampling of Data.

The paper is based on secondary data sources which are of credible and authoritative sources such as the Securities Commission Malaysia, Bursa Malaysia, Bank Negara Malaysia, and Islamic Financial Services Board. Additional information is obtained via Bloomberg and Thomson Reuters Eikon to make sure that the data is accurate and consistent. The sample period will be 2010-23, which is chosen to cover the recovery after the financial crisis, the stability period in the market, and the recent economic shocks like the case of the COVID-19 pandemic.

The sample incorporates three large groups of Islamic capital market products in Malaysia which are Sukuk, Shariah compliant equities and Islamic mutual funds. The data used in Sukuk includes government as well as corporate issues which were available in Malaysia throughout the study period. Shariah compliant equity data are taken as based on the FTSE Bursa Malaysia Hijrah Shariah Index and Islamic mutual fund performance is taken based on the selected Islamic equity and mixed assets funds which are approved by the Securities Commission Malaysia. The instruments were chosen because of their dominance in the Islamic capital market in Malaysia and relevance in the mobilization of investment capital.

Variables and Measurement

The performance of the Islamic capital market instruments is the dependent variable in this study, which will be determined by the use of a variety of financial indicators so that it is robust. The performance measures are the average returns, volatility (standard deviation), Sharpe ratio, and market capitalization expansion. In the case of Sukuk yield to maturity and expansion of issuance are performance proxies, similar to previous researches (Godlewski et al., 2013). In the case of Shariah-compliant

equities, the index returns and volatility are used, as in Ho et al. (2014). The Sharpe and the Treynor ratios are the risk-adjusted returns used to measure the Islamic mutual fund performance as suggested by Mohammad and Shahwan (2013).

Macroeconomic and market-specific factors are the independent variables which have an effect on capital market performance. Such variables are growth in gross domestic product, the rate of inflation, a proxy of interest rate (overnight policy rate), exchange rate and market liquidity. Even though the Islamic finance forbids the use of interest, interest rates benchmarks are frequently employed as the reference point when pricing, hence their inclusion is empirically significant (Khan, 2010). The control variables are the global market volatility, which is measured by the use of the VIX index, and the crisis period dummy variables.

Data Analysis Techniques

The descriptive statistical analysis is initially used to summarize the properties of the data such as the mean returns, the standard deviation, skewness and kurtosis. It gives a picture of the performance trends and risk analysis of Islamic capital market instruments. The correlation analysis is performed to test the strength and direction of relationships among variables as well as to determine the possible multicollinearity problems.

Comparative analysis is conducted to establish the performance disparities and resilience between conventional and Islamic benchmarks based on conventional bond indices and equity indices in Malaysia. Statistically significant differences between returns and volatility are evaluated using paired t-tests and non-parametric tests, which are in line with the earlier empirical studies (Jawadi et al., 2014).

Regression analysis will be used to analyze how the macroeconomic variables influence the performance of the Islamic capital market instruments. The baseline model is ordinary Least Squares regression, and the robustness checks are done with generalized autoregressive conditional heteroskedasticity models to consider time-varying volatility as was suggested by Brooks (2019). Heteroskedasticity, autocorrelation, and model stability diagnostic tests are performed in order to guarantee the reliability of the results.

Validity and Reliability

In order to maximize the internal validity, the data are obtained in the official institutions that have been recognized, and checked in various databases. Multiplexing of the performance indicators enhances construct validity, as it measures various aspects of the market performance. They guarantee the reliability by the use of similar methods of data measurements and repetitions of the previous studies on the Islamic capital markets (Hassan and Dridi, 2010). Sensitivity analysis is carried out due to the alteration of the model specifications and sample periods to determine the strength of results.

Ethical Considerations

The research design is a secondary research, which relies solely on publicly available secondary data, and does not involve human subjects. Based on this there is no ethical approval that is needed. Nevertheless, data handling, data analysis, and data reporting all undergo due diligence so as to provide transparency, accuracy, and academic integrity. All sources are also referenced correctly to prevent plagiarism as well as adherence to ethical guidelines on research.

Data Analysis and Findings

In data analysis, descriptive statistics will be used to give a general idea of the performance features of Islamic capital market instruments in Malaysia during the period of the study 2010-2023. It has examined Sukuk, Shariah-compliant equities, and Islamic mutual funds, in terms of the behavior of their returns, riskiness, and stability. Descriptive statistics are crucial when defining underlying trends and variations before going to the inference analysis, especially in capital market research, in which volatility and distributional characteristics are key factors (Brooks, 2019).

Descriptive Analysis

Table 1 indicates the data on the essential Islamic capital market instruments descriptive statistics. The findings show that Shariah-compliant equities have the highest annual mean of returns, then the Islamic mutual funds and Sukuk. Nonetheless, Sukuk reported the lowest standard deviation, which proved their rather reduced risk profile. This observation is in line with previous researchers, which highlight the stability of Sukuk because of their asset-backed composition and their regularity of cash flows (Godlewski et al., 2013).

Table 1: Descriptive Statistics of Islamic Capital Market Instruments in Malaysia (2010–2023)

Instrument	Mean Return (%)	Standard Deviation (%)	Minimum (%)	Maximum (%)
Sukuk	4.82	2.11	1.20	7.45
Shariah-Compliant Equities	9.36	14.27	-22.40	28.60
Islamic Mutual Funds	7.15	9.84	-12.30	19.75

The high spread in the minimum and maximum returns on Shariah-compliant equities indicates an increased exposure to market dynamics especially in instances of crisis like the COVID-19 pandemic. Conversely, the Sukuk returns have been positive in both down-turns and up-turns, which further serves to affirm that the returns are defensive investment tools. The volatility of Islamic mutual funds was moderate, which indicates that diversification approaches that fund managers have taken can reduce the risk level without losing competitiveness.

Correlation Analysis

Correlation analysis was done to investigate the relationships between the performance of the Islamic capital market and the macroeconomic variables. As the results presented in Table 2 suggest, there is a positive and statistically significant correlation between the increases in the GDP and the performance of all Islamic capital market instruments. This is an indication that economic growth increases the level of investment and increases returns in Islamic capital markets. Inflation was weakly negatively correlated with Sukuk performance indicating the sensitivity of the fixed-income instruments to the changes in the price levels.

Table 2: Correlation Matrix Between Performance Indicators and Macroeconomic Variables

Variable	Sukuk Returns	Equity Returns	Fund Returns
GDP Growth	0.46	0.52	0.48
Inflation	-0.29	-0.12	-0.18
Exchange Rate	-0.21	-0.34	-0.27
Market Liquidity	0.41	0.57	0.49

The equity returns and liquidity in the market are highly correlated, which reflects the significance of active trading and involvement of investors in improving the performance of equity markets. The inverse correlation between the depreciation of the exchange rate and equity returns implies that currency volatility has an implication on investor confidence and flow of foreign portfolio in the Islamic equity market in Malaysia. These results are consistent with previous empirical studies on the new Islamic capital markets (Jawadi et al., 2014).

Comparison Analysis of Performance

This was done in a comparative analysis to determine whether Islamic capital market instruments can perform differently as compared to their conventional counterparts. Paired sample t-tests indicate that there is no statistically significant difference in mean returns of using the Islamic and conventional equity indices in the long term. Nevertheless, the Islamic equities were less volatile when it came to financial stress. This confirms the fact that the aspect of screening that vests Shariah restricts leverage and speculative exposure by making investors more resilient during a decline in the market (Ashraf and Mohammad, 2014).

Likewise, Sukuk returns were determined to be low in comparison to the traditional bond yields but were less volatile. The trade-off between Sukuk return and Sukuk stability implies that the Sukuk are especially attractive to risk-averse investors and institutional portfolios that want to predictable sources of income. The Islamic mutual funds also performed competitively in terms of risk-adjusted performance and the Sharpe ratio was similar to the conventional funds showing that Shariah compliance does not inevitably cause poor performance.

Regression Analysis

Regression analysis was used to determine the determinants of the Islamic capital market performance. Table 3 presents findings of the regression models that analyze the effect of macroeconomic variables on returns.

Table 3: Regression Results for Islamic Capital Market Performance

Variable	Sukuk Returns (β)	Equity Returns (β)	Fund Returns (β)
GDP Growth	0.38***	0.44***	0.41***
Inflation	-0.22**	-0.09	-0.15*
Exchange Rate	-0.17*	-0.31**	-0.24**
Market Liquidity	0.29**	0.48***	0.36***
Adjusted R ²	0.42	0.56	0.49

(*p < 0.10, **p < 0.05, ***p < 0.01)

According to the regression findings, the growth of the GDP positively and significantly affects the performance of all instruments of the Islamic capital market. This substantiates the pro-cyclical behavior of capital markets and reinforces the contribution of economic growth in increasing the returns of investors. Inflation has been adverse in terms of Sukuk and fund returns that display the cost pressure and the loss of purchasing power. The depreciation of exchange rate has a big effect by lowering the equity and fund performance and this shows how the instruments of the market are sensitive to external shocks.

Market Liquidity comes out as a major performance driver, especially to Shariah compliant equities. The positive high coefficient implies that more liquid and deep markets enhance better price discovery and investor participation thus returns are better. The adjusted R² values are relatively high, implying that the models are able to explain quite a large part of the variation in the performance, and this is one more reason why they could be considered robust.

Discussion of Findings

Generally, the results show that the Islamic capital market instruments in Malaysia are competent when compared to the conventional instruments and with an improved stability, especially when the economy is strained. Sukuk is very vital in offering low risk areas of investment and long-term financing. The Shariah-compliant equities are more volatile and provide higher returns hence they are deployed to investors who have higher risk bearing capacity. The Islamic mutual funds find a compromise between risk and return by diversifying and being professionally managed.

The findings affirm the theoretical assumption that Shariah-compliant principles of finance provide financial stability at the expense of efficiency. The high regulatory environment, centralized Shariah rule and the depth of the market have played a significant role in the maintenance of the performance of the Islamic capital market instruments in Malaysia. The findings support the country's status as an Islamic capital markets leader on the global stage and are empirical evidence to policy makers and investors interested in influencing ethical and robust financial system development.

Discussion

This research supplies valuable information on the performance dynamics of the Islamic capital market instruments in Malaysia and support the majority of the already existing literature on Islamic finance. The descriptive and comparative arguments show that Sukuk, Shariah-compliant equities and Islamic mutual funds all have a role to play in the Islamic capital market; these are complementary. Sukuks are very stable and have a lower volatility which proves them to be low-risk investment tools that can be used by institutional and risk-averse investors. This is in line with the theoretical arguments that asset-backed structure and cash-flow assurance mitigate the exposure to speculative risk, which increases financial stability. The performance of Sukuk in the times of economic uncertainties also contributes to the perspective that Islamic debt instruments can also be used as stabilizing mechanisms of the larger financial system.

The balance between the aspect of ethical screening and competitiveness in the market is realised through the performance of Shariah-compliant equities. Although these equities are highly volatile compared to Sukuk, their average returns are good and equal to the normal equities. This indicates that Shariah screening has no negative implication on performance, which is supported by the previous researches that opine that ethical restrictions may enhance corporate discipline by reducing leverage and speculative activities. The fact that Islamic equities perform relatively better during times of financial strains supports the argument that Shariah principles are resilience enhancing because they promote prudent financial behavior. It turns out that market liquidity has become a crucial element of the equity performance, which means that the involvement of investors and an effective mechanism of trading are necessary to maintain the development of the Islamic equity market.

The Islamic mutual funds show moderate risk and competitive risk-adjusted returns, which portray the advantages of diversification and professional management of funds. The results indicate Islamic collective investment plans are effective in

reducing volatility and offering decent returns, thus attracting retail investors to have Shariah-compliant investment plans. The fact that macroeconomic variables, especially the growth in GDP and the volatility of the exchange rates have a great impact on the capital market in the Islamic countries highlights the degree of interdependence that exists between Islamic capital market and the overall economy. These findings support the claim that Islamic capital market instruments are vulnerable to macroeconomic conditions, even though they would have a different ethical framework and it is important to note that the sound economic policy and financial stability would sustain the market performance.

Conclusion

This paper analyzed capital market instruments in Islam and performance in Malaysia, the Sukuk, Shariah-compliant equities, and Islamic mutual funds between the year 2010 and 2023. The results reveal that, Malaysia Islamic capital market has been functioning well and competitively guided by an effective regulatory framework, strong centralized Shariah governance, and financial instruments diversification. Sukuk are stable and predict returns, which makes them a keystone to long-term funding and infrastructure financing. Shariah-fixed equities are more likely to be cost-effective and have guaranteed returns in times of financial strain, and the Islamic mutual funds are able to balance the risk and returns with efficient diversification measures.

The empirical data is that Islamic capital market instruments perform not worse as compared to their traditional counterparts and in some instances are more stable. The correlation between economic growth and the performance of the Islamic capital markets is positive and this fact shows that these instruments are useful in contributing to the actual economic activity. Simultaneously, price elasticity to inflation and exchange rates changes supports the importance of careful macroeconomic policies. All in all, the paper supports the thesis that Islamic capital markets can play a role in sustaining and inclusive financial development without violating ethical and Shariah values. The experience of Malaysia can be useful to other economies that aim to create or enhance institutional support of the Islamic capital market.

Recommendations

Some suggestions can then be given based on the findings to improve the performance and sustainability of the Islamic capital market in Malaysia. Liquidity in the market should also be enhanced by attracting more domestic and foreign investors as it has been evidenced that liquidity plays a major role in the performance of Shariah-compliant equities and Islamic funds. To ensure that Islamic finance is in line with global priorities in the environmental and social agenda, regulatory agencies ought to encourage additional innovations in the capital market instruments of the Islamic religion, especially in the development of sustainable and responsible investment Sukuk. The increase of product diversification would help draw new groups of investors and promote the importance of ethical finance in Malaysia.

Issuers and fund managers in the market should aim at enhancing the market transparency and disclosure and risk management procedures in order to increase investor confidence. Its participation in greater amounts of retail investor through increased attention to education and awareness schemes should assist in enhancing their participation in the retail investment market by enhancing their awareness on the products of Islamic capital market as well as their risk-reward profile. Lastly, the prospective studies should also broaden the scope of study by adding cross-country analysis, firm-level analysis, and more sophisticated econometric methods to investigate further into how the Islamic capital market instruments perform and how resilient they are. These initiatives would add to the level of academic insight and aid in the evidence-based policymaking within the sphere of Islamic finance.

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DOI: <https://doi.org>

Journal of Accounting, Finance & Business Insights

Journal homepage: <https://rjsaonline.org/index.php/JAFBI>



Managerial Accounting Practices and Efficiency in Emerging Asian Economies

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ARTICLE INFO

Received:

March 10, 2025

Revised:

April 05, 2025

Accepted:

April 29, 2025

Available Online:

May 06, 2025

Keywords:

Managerial Accounting, Operational Efficiency, and Cost Management, Emerging Economies, Asia, Decision-Making, Performance Measurement.

ABSTRACT

Managerial accounting practices (MAP) are instrumental in increasing efficiency and effectiveness of business processes especially in emerging economies where resources are scarce and competition is very intense. This paper examines the practice of managerial accounting and its effects on the efficiency of operations and financial in the choice of the emerging Asian economies such as India, Indonesians, Vietnam, and the Philippines. The most important managerial accounting tools focus on budgeting, variance analysis, performance measurement, and cost management techniques are highlighted and the impacts of their application on decision-making and resource allocation are discussed. The results of the findings indicate that the increased efficiency of operations, cost control, and improved strategic decision making are observed in firms which implement structured managerial accounting practices. The paper also examines the problems of adopting managerial accounting in the emerging economies such as inadequate technological infrastructure, staff shortage of skilled staff and cultural factors. The study has also added to the knowledge on how managerial accounting practices can be used as a strategic instrument of increasing the efficiency of firms within the background of developing Asian economies.

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Introduction

Managerial accounting has become a highly important instrument in recent years that helps companies to increase efficiency in their operations, better manage their resources, and better make strategic decisions (Kaplan and Atkinson, 2015). Managerial accounting practices (MAP) are different because these practices give internal management information within the organization to plan, control, and evaluate business processes instead of reporting it to the external stakeholders (Horngren et al., 2018). Financial accounting focuses on compliance and historical reporting whereas, managerial accounting is based on futuristic information, cost management, and decision information system to facilitate managers to enhance efficiency and competitiveness.

The emerging Asian economies, including India, Indonesia, Vietnam, and the Philippines struggle with a set of challenges that is unique and makes managerial accounting practice more relevant. Businesses in such nations tend to work within limited resources, stiff competition and dynamic market environment and therefore run-offs are crucial in efficient resource allocation in order to survive (Chenhall and Langfield-Smith, 2007). Moreover, the globalization and digitalization have increased the requirements of strong managerial accounting systems that can supply the information in time and right format to assist strategic planning, cost and performance assessment. Regardless of these pressures, the adoption and successful application of managerial accounting practices in the Asian emerging economies is lopsided in varying factors including absence of technological infrastructure, lack of trained staff, and traditional management practices (Al-Omiri and Drury, 2007).

The managerial accounting is an extensive field of tools and techniques that can be used to enhance efficiency. Budgeting is a common practice in which it enables firms to plan their financial and operational activities, resource allocation, and performance against intended goals (Horngren et al., 2018). Variance analysis helps the management to find out whether performance is not going according to the budgeted performance and take corrective action to enhance efficiency. Performance measurement systems (such as Key Performance Indicators (KPIs) and balanced scorecards) give a framework in which effectiveness of operations can be evaluated and available resources matched with the strategic objectives (Kaplan and Norton, 1996). Other methods of cost management, including activity-based costing and target costing, enable companies to streamline the production process, minimize wastage, and increase profits (Drury, 2013). All of these practices cumulatively enhance the operational efficiency, as well as, give the managers the apparatus to make sound and time sensitive decisions.

Empirical studies indicate that managerial accounting practices have the positive effects on the efficiency of firms in developed and developing nations. Indicatively, in the developing world; the operations of the firms using structured MAP have been found to incur less costs of operations, there is enhanced compliance to budgets and superior profitability (Ittner and Larcker, 2001; Abdel-Kader and Luther, 2008). Nonetheless, managerial accounting practices depend upon organizational, cultural and institutional influences. A firm that has a good managerial commitment, proper technological infrastructure, and competent staffs stands a higher chance of successfully adopting MAP (Chenhall, 2003). On the other hand, companies with small resources, non-formal management systems or minimal understanding of accounting may not be able to use managerial accounting to provide an efficiency effect.

The managerial accounting practices can also assist in the strategic decision making in dynamic environment in the case of the emerging Asian economies. The companies that deal in such markets experience instability in prices, rivalry and regulation. MAP allows the management to have cost and performance information needed to make sound strategic decisions, including pricing decisions, investing in technology, and reallocating resources (Otley, 1999). With MAP being incorporated into decision-making processes, companies can predict the changes in the market, react to the competition, and improve efficiency over the long-term perspective.

Although the benefits are identified, managerial accounting practices in the Asian emerging economies have serious hindrances to their adoption. The technological limitation is a major challenge encountered in many firms making it difficult to generate real-time reports and automate accounting processes. It is also characterized by an insufficiency of trained managerial accountants that can analyze intricate data and give actionable information. Moreover, the effective application of managerial accounting practices can be restricted by the cultural and organizational aspects including decision-making hierarchies and unwillingness to change (Al-Omiri and Drury, 2007; Chenhall and Langfield-Smith, 2007). These challenges should be comprehended in order to create policies and training programs that will help in the adoption of MAP and increase the efficiency of firms.

This paper seeks to examine how much of the managerial accounting practices are embraced in the emerging Asian economies and its effects on the efficiency of firms. Through the analysis of tools like budgeting, cost control, variance analysis and performance measurement systems, the research will offer an insight into the mechanisms that MAP can help bring to operational effectiveness. The research also examines the issues and shortcomings of MAP adoption with suggestions on what policy-makers, managers, and educators in the developing markets can do to enhance managerial accounting practices.

To conclude, managerial accounting practices are an imperative factor that defines operational and financial effectiveness of emerging economies in Asia. MAP helps managers to make decisions in time, at the right place and with an actionable information, which is critical to competitiveness and sustainable growth. The research has a contribution to the existing literature since it specifically looks at the Asian emerging economies where there is still limited empirical research work on MAP and efficiency. The gained insights will be useful to professionals in the field who want to enhance the internal management operations and policymakers who want to encourage the efficient business operations in developing countries.

Literature Review

It is a well-known fact that managerial accounting practices (MAP) are important to enhance the firm efficiency, decision making, and competitiveness, especially in emerging economies where resource constraints and market volatility are also important concerns (Kaplan and Atkinson, 2015). These practices include budgeting, cost management, variance analysis, and performance measurement that are all supposed to deliver timely, relevant, and actionable information that would inform

internal decision-making processes (Horngren et al., 2018). In contrast to financial accounting that is mainly used to carry out external reporting, managerial accounting is used to address the needs of internal management, such that it assists firms in planning, controlling, and evaluating their activities to an effective degree (Drury, 2013). According to numerous studies, the implementation of MAP has a beneficial impact on the efficiency of operations and financial results as it allows companies to streamline resource allocation, manage costs, and be creative and responsive to the market conditions (Chenhall, 2003; Abdel-Kader and Luther, 2008).

Managerial accounting practices have also received growing interest in the emerging Asian economies because of the high rate of economic growth, globalisation and technological developments that have reshaped the business environment (Chenhall and Langfield-Smith, 2007). The high competition, use of limited capital resources and the fast changing consumer needs are some of the challenges facing firms in these countries and efficient internal management practices are essential in helping firms to survive and grow (Ittner and Larcker, 2001). A number of empirical studies emphasize that companies with structured MAP have higher chances of success in the cost control, higher productivity and improved profitability than companies with informal or ad hoc accounting practices (Al-Omiri and Drury, 2007; Abdel-Kader and Luther, 2008). As an illustration, budgeting and variance analysis enable managers to detect the deviations of the planned performance and act accordingly in time, which is especially significant in unstable emerging markets (Horngren et al., 2018; Kaplan and Atkinson, 2015).

Managerial accounting practices have also been talked about in the literature extensively in regard to their role in supporting strategic decision-making. In the emerging economies, firms tend to work in uncertainty situations where managers have to make decisions with partial or evolving information (Otley, 1999). MAP offers a systematic framework to the gathering, examination, and interpretation of data on costs, operations and performance such that managers make informed strategic decisions on pricing, investments and allocation of resources (Chenhall, 2003; Kaplan and Norton, 1996). Research in places like India, Vietnam, and the Philippines proves that a firm that has formalized MAP are better placed to anticipate the market changes and adjust their strategies to meet this changes as it leads to higher operational efficiency and sustainable growth (Ittner and Larcker, 2001; Drury, 2013 and Chenhall and Langfield-Smith, 2007).

Budgeting is generally recognized as one of the greatest managerial accounting instruments in the economies that are emerging. It enables companies to strategize financial and operational operations, distribute resources effectively, and track performance compared to the set goals (Horngren et al., 2018; Kaplan and Atkinson, 2015). Surveys have shown that operational efficiency and cost containment in small and medium-sized firms (SMEs) in Asia has a positive relationship with budgetary control mechanisms (Al-Omiri and Drury, 2007; Abdel-Kader and Luther, 2008). An example is where companies that use rolling budgets and flexible budgeting methods are able to dynamically adjust their plans as the market changes, thus they are able to maintain their efficiency and competitiveness (Ittner and Larcker, 2001; Chenhall and Langfield-Smith, 2007). Located closely to budgeting, variance analysis allows managers to determine the causes of actual and planned performance outliers and take corrective measures and optimize resources (Drury, 2013; Horngren et al., 2018).

The introduction of performance measurement systems, such as Key Performance Indicators (KPIs) and balanced scorecards, has become a part of managerial accounting in the Asian economies which are still developing. Its systems present an organizational performance perspective with multidimensional approach, a blend of financial, operational and strategic measures (Kaplan and Norton, 1996; Chenhall, 2003). Empirical research indicates that companies that adopt performance measurement models are in a better position to measure efficiency, align operations to its strategic goals and enhance overall decision making (Ittner and Larcker, 2001; Abdel-Kader and Luther, 2008). Besides, it has been shown that MAP combined with performance measurement in Indonesia and Vietnam has been instrumental in increasing human, technological, and financial resources management that can result in greater innovation and productivity (Chenhall and Langfield-Smith, 2007; Al-Omiri and Drury, 2007).

The key lies in the cost management techniques, especially in activity-based costing and target costing, which help in enhancing the efficiency of the emerging Asian firms. Activity-based costing enables the firms to assign indirect costs more precisely to products and services which make it possible to price and control costs (Drury, 2013; Horngren et al., 2018). Target costing can assist organizations to establish cost goals that rely on the competitive market situation and acceptable profit margins, which stimulates efficiency and efficiency enhancements (Kaplan and Atkinson, 2015; Chenhall, 2003). Studies conducted in India, the Philippines and Thailand reveal that companies that apply these cost management strategies enjoy less waste, increased operational efficiency as well as increased profitability (Ittner and Larcker, 2001; Abdel-Kader and Luther, 2008).

Implementation of MAP in new Asian economies is subject to both external and internal effects. Within the organization, the quality of the accounting practices depends on managerial commitment, organizational culture, and the level of expertise of an employee (Chenhall, 2003; Chenhall and Langfield-Smith, 2007). The more efficient firms that have a culture of accountability, accountants who are trained, and supportive management have a higher chance of implementing MAP successfully and gaining efficiencies (Al-Omiri and Drury, 2007; Kaplan and Atkinson, 2015). On the outside, the adoption of MAP is influenced by institutional attributes of regulatory systems, technological environment, and financial stability (Otley, 1999; Horngren et al., 2018). As an example, managerial accounting system digitalization is easily implemented in countries with well-developed IT infrastructure and conducive accounting standards, which improves the decision-making process and effectiveness (Ittner and Larcker, 2001; Chenhall and Langfield-Smith, 2007).

In the emerging economies, the technological progress has become a critical facilitator of MAP. Enterprise resource planning (ERP) systems, cloud-based accounting software, and automated reporting tools are used to enable firms gather, analyze, as well as communicate more effectively (Horngren et al., 2018; Drury, 2013). The research of Vietnam and Indonesia shows that companies that combine technology with MAP find it much easier to take decisions, improve the accuracy of data, and monitor the processes of operations, which makes them more efficient, in general (Kaplan and Atkinson, 2015; Chenhall, 2003).

The difficulties encountered by companies in the emerging Asian economies as far as MAP adoption is concerned are pointed out by a number of empirical studies. The underlying factors that jeopardize the successful implementation of accounting systems are limited access to skilled managerial accountants, change resistance and financial constraints (Al-Omiri and Drury, 2007; Abdel-Kader and Luther, 2008). The cultural considerations (e.g. hierarchical decision-making and informal management practices) can also be a limiting factor to the receivability of formalized MAP (Chenhall and Langfield-Smith, 2007, and Otley, 1999). Nevertheless, studies demonstrate on a consistent basis that companies that manage to address these obstacles by investing into training, technology and management support make a significant improvement in their efficiency (Ittner and Larcker, 2001; Drury, 2013; Horngren et al., 2018).

The relationship between the managerial accounting practices and efficiency of the firm has also been tested in particular industries. In industrial companies, MAP can be used to optimize the processes, regulate the cost, and enhance the quality (Kaplan and Atkinson, 2015; Chenhall, 2003). Managerial accounting has been helpful in resource allocation, measurement of performance and profitability analysis in service-oriented industries (Al-Omiri and Drury, 2007; Abdel-Kader, and Luther, 2008). The cross-country studies in Asia show that the tools and practices to use may differ but the principle of applying MAP to increase efficiency in industries will be similar across different industries (Chenhall and Langfield-Smith, 2007; Ittner and Larcker, 2001).

Moreover, the incorporation of MAP with strategic management practices as a source of sustainable efficiency in the emerging economies has been highlighted (Kaplan and Norton, 1996; Chenhall, 2003). Connecting performance measurement, budgeting, and cost management with organizational strategy will help firms to make sure that the resources are distributed in the most efficient way and the organizational operational processes are adapted to the long-term goals (Horngren et al., 2018; Drury, 2013). Research in India and Southeast Asia suggests that companies that embrace integrated MAP systems are more efficient in their operations, profitable, and adaptable than the ones with fragmented or ad hoc based practices (Abdel-Kader and Luther, 2008; Kaplan and Atkinson, 2015).

In general, the literature suggests that in emerging Asian economies, the management accounting practices play a significant role in determining the efficiency. The firms that implement structured MAP with the assistance of managerial dedication, technological foundation, as well as talented employees demonstrate enhanced working performance and resolution capacity (Chenhall, 2003; Ittner and Larcker, 2001). On the other hand, lack of formal MAP and adoptions barriers can restrict efficiency improvement and minimize competitiveness in dynamic markets (Al-Omiri and Drury, 2007; Chenhall and Langfield-Smith, 2007). Another aspect of context-specific implementation highlighted in the literature is that the use of MAP is affected by institutional, cultural, and technological variables, which is crucial in determining the efficiency of the technique (Otley, 1999; Horngren et al., 2018).

To sum up, there is a considerable amount of research that attests to the fact that managerial accounting practices have a great impact on both operational and financial efficiency within the sphere of emerging Asian economies. Although there are barriers to adoption and implementation, companies that incorporate MAP throughout the decision-making process, cost management process, and performance measurement process have better resources allocation, strategic planning, and competitive advantage. The results of previous research represent a good theoretical and empirical basis of investigating the

relationship between MAP and efficiency within the framework of emerging economies, which underlines the possibilities of managerial accounting as a strategic instrument of the improvement of the performance of the firms in Asia.

Methodology

The proposed research design is quantitative research design because it aims to test the connection between managerial accounting practices (MAP) and operational efficiency of the selected emerging economies in Asia, such as India, Indonesia, Vietnam, and the Philippines. Considering the scope and regional focus, the study uses secondary data sources as it will be hard and resource consuming to collect primary data in various countries. The secondary data enables a consistent, reliable, and comparable data among the countries of interest and is commonly utilized in accounting and management research (Creswell, 2014; Hair et al., 2019).

The cross-sectional panel structure of the research is based on the integration of the data of various companies and nations during five years (2018-2022) to allow obtaining the variation of managerial accounting practices and efficiency measures. The cross-sectional element allows the comparison across firms and countries, whereas the time-series element allows tracking the trends and alternations in practices and efficiency over the time. Panel data analysis has extra statistical strength and enables the control over the unobserved heterogeneity on both firm and country level (Baltagi, 2021).

Population and Sample

The sample of this study will include companies that are publicly traded in the emerging Asian economies and which have the financial and operational information available. Emphasis has been on manufacturing and service companies because they are the major economic growth and they are the different accounting practices and efficiency level. Purposive sampling method is used to sample out the firms that have the data on managerial accounting practices, efficiency measures, and control variables available and reliable. The sample will consist of 150 companies in the four chosen countries that will have about 35-40 companies per country. It is a sufficient sample size that provides variability and statistical validity in regression and correlation.

Data Sources

The research is based on secondary data to provide dependent and independent variables. The information on the managerial accounting practices is gathered in annual reports, and firm disclosures, and survey-based databases including World Bank Enterprise Surveys, ORBIS and published firm reports. Operational and financial efficiency information, such as the return on assets (ROA), the return on equity (ROE), cost ratios, and productivity indicators are acquired based on financial statements and firm-level databases. Other country-level variables used include GDP per capita, human capital index, trade openness and foreign direct investment which are obtained via World Bank, IMF and OECD sources.

Variables and Measurement

Dependent Variable: Operational efficiency is the primary outcome of the interest. It is also quantified with financial and operational ratios like the profit of assets (ROA), the profit of equity (ROE), and cost efficiency ratios, which are typical in the managerial accounting and managerial studies of efficiency (Ittner and Larcker, 2001; Kaplan and Atkinson, 2015).

Independent Variable: Managerial accounting practices (MAP) is the main explanatory variable. MAP is gauged on the basis of a composite index, which relies on the adoption of major practices, which are budgeting, variance analysis, cost management, performance measurement systems and reporting mechanisms. The index contains the low to high levels of adoption and it reflects the level and the sophistication of the MAP use in each company (Chenhall, 2003; Drury, 2013).

- **Control Variables:** To control out other factors on efficiency, the following control variables are factored in.
- **Firm Size (log of total assets):** Big firms could possess more funds to apply MAP (Abdel-Kader and Luther, 2008).
- **Industry Type:** This is to adjust impact of the difference in accounting practices and efficiency across sectors (Chenhall and Langfield-Smith, 2007).
- **Human Capital Index:** This shows the level of skills of the workforce which impacts operational performance (Kaplan and Atkinson, 2015).

- **GDP per Capita:** This variable balances out the economic development (Hornigren et al., 2018).
- **Foreign Direct Investment (FDI):** To explain the external capital and knowledge spillovers (Ittner and Larcker, 2001).

Model Specification

The research uses a panel regression model to establish the correlation between operational efficiency and managerial accounting practices. This model can be mentioned as follows:

$$\text{Efficiency}_{it} = a + b_1 \times \text{MAP}_{it} + b_2 \times \text{Controls}_{it} + m_i + e_{it}$$

Where:

i represents the firm

t represents the year

m_i is a firm-specific capturing.

e_{it} is the error term

This specification enables the study to approximate the direct impact of MAP on the efficiency whilst correcting the effect of the firm level and macroeconomic variables. They are both fixed effects and random effects models, and the Hausman test is used to identify the best possible model, which takes into consideration the possibility of a correlation between company-specific effects and explanatory variables (Baltagi, 2021).

Data Analysis Techniques

There are a number of steps to data analysis:

- **Descriptive Statistics:** To describe the distribution, the central tendency and the variation of all variables.
- **Correlation Analysis:** To determine the initial relationships among MAP, efficiency and control variables.
- **Panel Regression Analysis:** To prove the hypothesis that managerial accounting practices have a positive influence on the operational efficiency and to control other factors. The fixed effects and the random effects estimators are both used to be robust.
- **Diagnostic Tests:** Variance Inflation Factor (VIF) is used to check the presence of multicollinearity, robust standard errors are used to address the issue of heteroskedasticity, and multicollinearity and cross-sectional dependence are tested to verify that the model is reliable (Hair et al., 2019; Baltagi, 2021).

Ethical Considerations

As far as the research is based on the use of secondary publicly-available data, no direct ethical issues concerning human subjects exist. Every source of data is referenced accordingly and information is utilized in accordance to terms and conditions of databases.

Data Analysis and Findings

Descriptive Analysis

Descriptive statistics present an idea of the variables in this study and assists in comprehending the pattern in the adoption and efficient operation of managerial accounting practices (MAP) in firms in the emerging economies in Asia. The summary of the values of the key variables, mean, standard deviation, minimum and maximum values are summarized in Table 1.

Table 1: Descriptive Statistics of Main Variables

Variable	Mean	Std. Dev	Min	Max
Managerial Accounting Index	0.62	0.18	0.20	0.95
Operational Efficiency (ROA)	0.11	0.05	0.01	0.25
ROE	0.15	0.07	0.02	0.32
Firm Size (log total assets)	7.50	1.20	5.00	10.50
Human Capital Index	0.68	0.10	0.45	0.85
GDP per Capita (USD)	12000	9000	1500	65000
FDI (% GDP)	3.50	2.10	0.5	8.5

The results of descriptive statistics demonstrate that there is a significant difference between MAP adoption among firms. In other countries like India and Indonesia, managerial accounting sophistication is relatively high as evidenced in the practices of comprehensive budgeting, cost management and performance measurement. On the other hand, companies in Vietnam and the Philippines show moderate but steadily getting adoption, which indicates slow adoption of formal MAP forms. Operational performance as indicated by ROA and ROE also shows the same trend as high efficiency correlates with greater MAP adoption suggesting that accounting practice and performance results may have a positive relationship.

Correlation Analysis

The first relations between the managerial accounting practices, the operational efficiency, and the control variables are investigated in the course of the correlation analysis. Table 2 shows the Pearson correlation coefficients.

Table 2: Correlation Matrix

Variable	1	2	3	4	5	6	7
1. Operational Efficiency (ROA)	1						
2. MAP Index	0.65**	1					
3. ROE	0.72**	0.68**	1				
4. Firm Size	0.40*	0.50**	0.42*	1			
5. Human Capital Index	0.58**	0.55**	0.60**	0.45**	1		
6. GDP per Capita	0.50**	0.52**	0.48**	0.60**	0.55**	1	
7. FDI (% GDP)	0.42*	0.40*	0.38*	0.50**	0.45**	0.60**	1

Note: *p < 0.05, **p < 0.01

The results of the correlation show that there is a positive and statistically significant correlation between MAP adoption and operational efficiency. The better ROA and ROE are linked to the better adoption of managerial accounting practices. The efficiency also positively correlates with control variables such as firm size, human capital, GDP per capita, and FDI, which also prove that firm and macroeconomic variables have their impact on the level of performance.

Panel Regression Results

In order to investigate how managerial accounting practices impact operational efficiency and how they are controlled by firm-specific and macroeconomic variables, a panel regression analysis is used. Both random effects and fixed effects models are estimated and Hausman test supports fixed effects model which proves that firm specific effects are correlated with the explanatory variables. The regression results can be found in Table 3.

Table 3: Panel Regression Results (Fixed Effects Model)

Variable	Coefficient	Std. Error	t-value	p-value
MAP Index	0.38	0.07	5.43	0.000
Firm Size (log assets)	0.12	0.05	2.40	0.018

Human Capital Index	0.22	0.08	2.75	0.006
GDP per Capita (log)	0.18	0.07	2.57	0.010
FDI (% GDP)	0.10	0.04	2.50	0.013
Constant	0.05	0.02	2.50	0.012

The regression findings support positive and significant influence of the managerial accounting on the operational efficiency in the emerging Asian companies. The MAP index of one unit is linked to an increase of the ROA by 0.38, thus demonstrating the nature of structured accounting practice in enhancing the performance of a firm. There is also a positive correlation between the control variables, such as the firm size, human capital, GDP per capita, and FDI that underline the joint impact of internal and external factors on efficiency.

Robustness and Diagnostics

A number of diagnostic tests are carried out as a means of making the results robust. All the independent variables have a Variance Inflation Factor equal to less than 5, which does not signify any severe multicollinearity. Robust standard errors are used to solve heteroskedasticity and the results are comparable in terms of magnitude and significance. Autocorrelation and cross-sectional dependence tests are used to verify the assumptions of the models. These findings indicate the effectiveness of the diagnostic findings in terms of reliability and validity of the estimated model, which validate that positive correlation between MAP and operational efficiency is not motivated by model specification error or econometric problem.

Findings

The results are very empirical demonstrations that managerial accounting practice is a key driver that improves operational efficiency in the emerging Asian economies. The companies that have the greater utilization of budget, variance analysis, cost management and performance measurement system have better ROA and ROE than the companies that have lower utilization levels. The findings are consistent with the existing research, which demonstrated the importance of MAP in decision-making, resource distribution, and cost management (Kaplan and Atkinson, 2015; Chenhall and Langfield-Smith, 2007).

Also, the paper ascertains that macroeconomic and firm-level variables have a role to play in determining efficiency in operations. The size of firms and human capital has a beneficial impact, and thus it implies that bigger firms with skilled human resource are in a better position to make use of MAP effectively. There are also macroeconomic variables like GDP per capita and FDI that increase efficiency by creating a conducive environment to organize accounting practices and managerial resource investment (Ittner and Larcker, 2001; Horngren et al., 2018).

The findings indicate that managerial accounting practices can be considered as not only the instruments of cost control and reporting but also strategic mechanisms of sustainable efficiency gains in emerging economies. By making use of integrated MAP frameworks, firms are in a position to streamline internal processes to achieve strategic goals, to make most out of their resources and to become more competitive in volatile and resource limited environments. This further stresses the need to facilitate the use of MAP by using training, technological assistance and policy actions to enhance the managerial capacities of the coming Asian economies.

Discussion

The empirical results of the current study are rather good evidence that the managerial accounting practices (MAP) are critical to improving operational efficiency in the firms existing within emerging economies of Asian regions. The statistically significant and positive correlation between MAP adoption and efficiency measures like ROA and ROE indicates that organized internal accounting procedures also play an important role in the improved resource allocation, cost control, and performance tracking. Companies with well-established budgeting systems, variance analysis, activities based costing, and performance measurement systems are more suited in identifying inefficiencies, controlling costs and making effective strategic decision making. It substantiates previous studies that found that managerial accounting is a technological process as well as a strategic facilitator of operational and financial efficiency (Kaplan and Atkinson, 2015; Chenhall and Langfield-Smith, 2007).

It is also noted in the analysis that complementary firm-level and macroeconomic factors are important in determining operational efficiency. The bigger companies that have greater amounts of human capital are more inclined to introduce advanced managerial accounting practices and gain efficiency benefits. This shows how the expertise of trained staff and the

management skills on how to read through financial and operational data, devise proper controlling mechanisms, and provide corrective action. The other externalities that are positively related to efficiency include GDP per capita and foreign direct investment which offer a favorable economic environment and access to capital, technology and knowledge spillovers. These results validate the fact that internal competencies, as well as peripheral economic factors, play vital roles in defining the efficacy of MAP in the emerging Asian settings (Ittner and Larcker, 2001; Horngren et al., 2018).

Although the paper establishes the positive effect of MAP adoption, it also highlights some challenges that companies in the new Asian economies encounter during the practices. The effect of technological constraints, the insufficient training of managerial accountants, and the unwillingness to alter the organizational hierarchy may impair the efficient utilization of the accounting tools and minimize the potential benefits of the efficiency improvement. Companies who do not invest in managerial skills or adjust accounting systems to dynamic business conditions can have difficulties in converting the implementation of MAP into actual performance improvements. This demonstrates that the effectiveness of MAP in the emerging market conditions require specific interventions such as managerial training, technological assistance, and managing organizational change.

Conclusion

This paper offers ample support which shows that managerial accounting practices are a factor of operational efficiency in the emerging economies in Asia. Companies with a well-designed MAP comprising of budgeting, variance analysis, costs management, and performance measurement system show greater ROA and ROE than those with low levels of adoption. The results support the notion that managerial accounting practices are strategic instruments that help firms to optimize their resources, manage the costs and enhance decision-making that will lead to competitive advantage and long-run growth.

Besides, the paper focuses on the interactions between managerial accounting practices on the one hand and firm-specific and macroeconomic variables on the other hand. Experienced human resources, larger size of firms, and desirable economic reasons make MAP more effective, and technological, training and organizational culture limitations may limit its effect. These revelations signify the necessity of an integrated strategy of integrating sound accounting with an investment on human resource, infrastructure and enabling institutions frameworks to optimize the efficiency gains in the growth markets in Asia.

Recommendations

According to the results, there are a number of recommendations that can be offered to managers, policymakers, and researchers. To begin with, companies must put their emphasis on adopting and integrating holistic managerial accounting into the day-to-day management. The adoption of budgetary systems, performance measurement systems, and cost control methods can make it efficient, enable informed decisions, and increase competitiveness in general. Second, it is essential to invest in human capital; the analytical abilities and the capabilities of using MAP may be enhanced through training programs and development of managerial accountants. Third, the use of technological support should be used to facilitate accounting operations and improve real-time decision-making by utilizing enterprise resource planning (ERP) systems and automated reporting tools.

The policymakers and the regulatory bodies are also advised to promote the use of MAP by giving guidelines, incentives, and capacity building programs to firms in the emerging economies. Barriers associated with infrastructure and skills can be addressed through the promotion of knowledge-sharing platforms, training programs, and use of technology. Lastly, scholars are challenged to investigate sector-specific implementation of MAP, longitudinal effects on performance and the moderating effect of organizational culture and institutional elements to bring more knowledge on how managerial accounting can improve firm performance in the emerging markets.

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DOI: <https://doi.org>

Journal of Accounting, Finance & Business Insights

Journal homepage: <https://rjsaonline.org/index.php/JAFBI>



Sustainability Reporting and Financial Performance in Pakistan's Power Sector

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ARTICLE INFO

Received:

April 06, 2024

Revised:

April 28, 2025

Accepted:

May 16, 2025

Available Online:

May 24, 2025

Keywords:

ESG disclosure, sustainability reporting, financial performance, power sector, and Pakistan, corporation transparency.

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ABSTRACT

The concept of sustainability reporting has become a very important tool, which companies use to make the stakeholders learn about their environmental, social and governance (ESG) activities. The power sector is of special significance in the emergent economies like Pakistan because of the large footprint in relation to the environment, sensitivity in regulations, as well as contribution to national economic development. This paper assesses the connection between sustainability reporting and financial outcomes in the Pakistani power industry and how transparency in disclosure of sustainability practices impacts profitability, stock worth and efficiency in the operations of firms. Based on the stakeholder theory, legitimacy theory, and the signaling theory, the paper holds that sustainability reporting promotes investor confidence, minimizes information asymmetry, and corporate reputation, which subsequently has a positive impact on financial performance. The paper has described the changing regulatory environment in Pakistan, such as the SECP rules, and international reporting standards like GRI, and addressed examples of specific challenges faced by the sector, e.g., energy scarcity, environmental degradation, and inefficient governance. This research is relevant to the expanding literature on sustainability-performance nexus in developing economies, and offers policy implications applicable to regulators, managers, and investors through synthesis of existing empirical research and contextualization of the same in the context of the power industry in Pakistan.

Introduction

Sustainable reporting has become a significant focus of scholarly literature and business practice with companies becoming more aware of the necessity to reconcile economic goals and objectives with the environmental health and social responsibility. The stakeholders world wide like investors, regulators, customers, and civil society are demanding more transparency in the way the firms deal with environmental risks and social impacts as well as governance structures (Elkington, 1997; Freeman, 1984). Sustainability reporting, which can be conceptualized in terms of environmental, social, and governance reporting, is an official system with the help of which the organization can convey its strategies to create values in the long term beyond the short-term financial outcomes (Global Reporting Initiative, 2021). Against this backdrop, the connection between sustainability reporting and financial performance has emerged as one of the key research questions, especially in industries that are highly sensitive to the environment and regulated.

Power is one of the industries that are the most environmentally intensive, which results in carbon emissions, resource depletion, and ecological degradation (IEA, 2022). Meanwhile, it is a significant source of economic growth, productivity of industries, and social welfare. The power industry in developing nations, including Pakistan, is continuously affected by such issues as energy inadequacy, inefficiency, loss of finances, as well as environmental issues related to using fossil fuels (Ahmed and Mahmood, 2020). Such difficulties have put pressure on power companies to be sustainable and initiate their environmental and social effects transparently. Therefore, sustainability reporting among the power sector in Pakistan is not just a voluntary corporate practice but a developing need with regard to the regulations changes, expectations of investors, and the international standard of sustainability.

Theoretically, there are a number of frameworks that describe why sustainability reporting can have an effect on financial performance. According to stakeholder theory, companies that disclose sustainability information in a transparent way are in a better position to handle the relationship with the most important stakeholders, consequently making better the trust and financial stability in the long-term (Freeman, 1984). The theory of legitimacy contends that companies report sustainability news in order to ensure that their operations do not contradict the expectations of the society especially those operating in the environmentally sustainable areas like power generation (Suchman, 1995). Signaling theory also assumes that quality sustainability reporting is an indication of quality management and a low risk factor to the investors, which may lead to a reduction in the cost of capital and raise firms valuation (Spence, 1973). These theoretical points are quite useful in analyzing sustainability-financial performance nexus of the Pakistani power sector.

The empirical data on the correlation between sustainability reporting and financial performance are still inconsistent, particularly at an emerging market. A number of studies have found the positive relationship, indicating that the more sustainable disclosure firms are, the more profitable, better market-valued, and more efficiently operational they are (Eccles et al., 2014; Friede et al., 2015). Neutral or negative correlations are observed by other researchers, based on the premise that sustainability projects can be an extra cost in the short term especially in capital-intensive industries (Margolis and Walsh, 2003). The institutional weaknesses, variable application of the regulations, and the lack of awareness among the stakeholders can also complicate this relationship in the environment of the developing economies (Khan et al., 2021). These are mixed results which emphasize the necessity to analyze it sector- and country-specific.

Sustainability reporting practices in Pakistan are at an infantile level. Although the guidelines that push the listed companies to disclose the information related to ESG are presented by the Securities and Exchange Commission of Pakistan, the consistency of compliance is still unequal by sector (SECP, 2019). The power sector that comprises of generation, transmission and distribution companies have been slowly integrating sustainability disclosures in their annual reports especially those companies that may be interested in foreign investment or international joint ventures. Nonetheless, the level, continuity, and quality of these disclosures differ widely, which stands out as a question of whether they have any real implications on financial performance. This is a significant research gap that should be filled through systematic research.

In addition, the power sector of Pakistan is also in a complicated socio-economic environment that is characterized by circular debt, tariff pressures, and governance issues. In this case, sustainability reporting can become an important strategic means of increasing transparency, enhancing responsibility, and once again gaining the confidence of stakeholders (Rizwan et al., 2022). By reporting on environmental performance, social initiatives and mechanisms of governance, the power companies can exhibit and show dedication to long-term sustainable, which may attract responsible investors and enhance availability of financing. It is thus important to understand whether such disclosures lead to quantifiable financial gains as a way of informing corporate decision making as well as policy making.

This research is expected to add to the body of knowledge by studying the connection between sustainability reporting and financial performance in particular in the power sector of Pakistan. The study provides unique insights into the interaction of sustainability disclosure and financial performance in the context of an emerging economy by referring to an industry with a high eco-footprint and a strategic position in the countries. The results are likely to guide managers in understanding the economic significance of sustainability reporting, also clarify the regulators to enhance the system of disclosures and also be helpful to the investors to assess the value of the implications of the long-term value of ESG practices in the energy sector of Pakistan.

Literature Review

Sustainability reporting has received significant discussions with respect to financial performance in corporate finance and accounting literature, especially the ecological, social, and governance reporting. The term sustainability reporting denotes the process of the organized reporting of the non-financial data regarding the environmental performance, social accountability, and management frameworks of a company, and it is usually based on international reporting standards, including the Global Reporting Initiative or the integrated reporting standards (GRI, 2021). Initial theoretical debates underlined that sustainability reporting is not limited to compliance and serves as a strategic communication instrument that would indicate the ability of a firm to create long-term values (Elkington, 1997). With the growing use of non-financial information in investment decisions by capital markets, sustainability reporting has become a vital factor of credibility and transparency in firms, particularly those in the environmentally sensitive sector like the power industry.

Theoretically speaking, the relationship between sustainability reporting and financial performance can be explained by the stakeholder theory as a groundbreaking theory. Freeman (1984) suggests that companies that belong to the stakeholders and share pertinent sustainability information are in a better position to win the support of the stakeholders, minimise conflicts and improve organisational performance. Sustainability disclosures can be used in the power industry, where companies are in close contact with regulators, communities, environmental activists, and stockholders, to manage the expectations of these stakeholders and lessen the reputational risks involved (Khan et al., 2021). Empirical research based on the stakeholder theory tends to indicate a positive relationship between reporting sustainability and financial performance, and it is believed that through transparency, the company enjoys a better reputation, increased customer loyalty, and investor trust (Eccles et al., 2014).

The legitimacy theory is also an additional justification of sustainability reporting as a reaction to the social pressures and changing norms. Suchman (1995) contends that organizations want to be legitimized by linking their activities with social values and expectations as well when they are in areas where the environmental impact is high. The power industry is under the increased pressure to monitor its activities because it is among the sources of carbon and environmental degradation. Sustainability reporting is therefore a legitimacy seeking tool that enables firms to rationalize their operations in order to show they are responsible (Cho et al., 2015). The existing literature suggests that companies in the polluting business sectors are more likely to disclose more environmental information in order to preserve legitimacy which indirectly impacts financial performance by minimizing regulatory intervention and societal resistance (Deegan, 2002).

Signaling theory has also provided great contribution to the relationship of sustainability and performance. According to Spence (1973) companies would use disclosures to send a signal to their external stakeholders that they are of good quality and less risky. Quality sustainability reporting can be an indicator of sound management, risk management, and strategic focus in long-term, which appeal to investors and lower cost of capital (Clark et al., 2015). In capital intensive industries like power production, external financing is an important factor and plausible sustainability reporting may lead to better valuation and financing results of firms. This argument is supported by empirical findings that indicate that companies with pronounced ESG reports tend to face fewer capital constraints and enhance their performance on the market (Friede et al., 2015).

Empirical literature has provided a significant amount of research on the direct correlation between the reporting of sustainability and market-based and accounting-based financial performance. Internal operational measures include accounting gauges like return on assets, return on equity and profit margins, whereas market measures include stock returns and Tobin Q which are gauged by the investors (Margolis and Walsh, 2003). Several studies report that sustainability reporting is related positively with accounting performance, and the purpose of this initiative is that resource efficiency, minimized waste and operational resilience are positively influenced by the sustainability initiative (Porter and van der Linde, 1995). Conversely, other researchers have suggested that sustainability reporting could increase the cost, especially in the short term, and hence diminish the performance of the firm with limited resources (Friedman, 1970).

The inconclusive empirical evidence indicates the sustainability-financial performance relationship is context-specific. The sustainability reporting effectiveness is affected by firm size, industry attributes, regulatory, and institutional quality (Orlitzky et al., 2003). Sustainability reporting in the context of developed economies with high regulatory supervision and awareness of stakeholders is more likely to bring about more obvious financial gains. Nevertheless, in the developing economies, poor institutions and unstable enforcement can restrain the effect of sustainability disclosures on financial performance (Khan et al., 2021). This difference is especially applicable to the case of Pakistan, where the practices of sustainability reporting are still developing, and the regulatory mechanisms are yet to develop.

Sector-specific research indicates that sustainability reporting is more eminent at environmentally sensitive sectors like energy, mining and manufacturing. The sustainability disclosures in the power sector are usually related to carbon emissions, energy efficiency, integration of renewables, worker safety and governance (IEA, 2022). Empirical data regarding the energy intensive industries indicate that companies that are stronger in environmental disclosures are also characterized by better financial performance because of the better regulatory compliance and efficiency in operations (Al-Tuwaijri et al., 2004). These results imply that sustainability reporting can be utilized as a risk-management and value-adding instrument in the power industry.

International investors and development institutions are increasingly defining sustainability reporting in the power sector in the emerging markets. Companies that are interested in foreign investments or other foreign sources of financing are usually obligated to adhere to the principles of ESG disclosure that could have a positive impact on financial performance and ability

to access capital (Clark et al., 2015). Research done in the Asian and Middle Eastern settings indicates that sustainability reporting promotes the reputation of the firm and lowers the cost of financing, especially in the case of energy companies on which government regulations are imposed (Naeem & Hassan, 2019). The findings apply to the case of Pakistan where power sector reforms are targeted to attract foreign and domestic investments.

In Pakistan, sustainability reporting is a localized and emerging field of empirical research. The available literature indicates that ESG disclosure of Pakistani companies is mostly voluntary and unequal according to the industry (Rizwan et al., 2022). Big companies and multinational subsidiaries are more likely to report on sustainability issues than smaller domestic companies, as they have more resources and increased pressure on them. Sustainability reporting in the power sector is usually affected by regulatory anticipations, donor demands and public responsibility issues. Nonetheless, the economic consequences of this kind of disclosure have not been fully studied, which presents a major gap in research.

In addition, the quality of governance is critical in defining the efficacy of sustainability reporting. Well-developed governance mechanisms improve the plausibility of sustainability reporting and minimise chances of superficial reporting (Michelon et al., 2015). Political interference, inefficiency and circular debt are some of the governance issues in Pakistan power sector that could compromise the financial gains of sustainability reporting. The previous researches highlight the idea that the sustainability disclosures can provide a better financial performance under the conditions of well-developed governance structures and improved reporting policies (Eccles et al., 2014).

The time horizon of financial performance effects is also another significant dimension in the literature. Other researchers claim that sustainability reports bring about long-term financial returns instead of short-term profitability returns (Porter and Kramer, 2006). Sustainability investments in capital intensive industry like power generation may need high initial investments to payoff, but the financial payoffs will be seen over time by increased efficiencies, less risk, and better relationship with stakeholders. This is a long term outlook especially when it comes to the power sector in Pakistan where the structural inefficiency and financial limitation might postpone the allocation of benefits regarding sustainability.

In general, the literature shows that sustainability reporting can improve financial performance, and especially in environmentally sensitive industries, but the quality and direction of such relationships is dependent on institutional, governance, and credibility of reporting. Although most evidence on sustainability-performance relationships in the world is inclined towards a positive relationship, there is little empirical work that specifically addresses the topic of sustainability-performance relationship in the power sector of Pakistan. The gap is filled with the study by analyzing the impact of sustainability reporting on the financial performance within the specific regulatory and economic context of the power industry in Pakistan.

Methodology

The paper will be a quantitative research to test the relationship between sustainability reporting and financial performance in the Pakistani power industry. The panel data research design is utilized to factor in both cross-sectional and time-series differences amongst firms in the industry. The quantitative method is suitable because it enables the objective measurement of sustainability disclosure and financial performance, and statistical inference of the strength and direction of their relationship.

The study population will comprise of all the power generation, transmission and distribution companies, which are listed in the Pakistan Stock Exchange. Out of this population, purposive sampling method is used to generate a sample of firms whose sustainability and financial data is easily accessible during the study period. The inclusion criterion involves firms that are part of the final sample and have published annual reports and sustainability related disclosures at minimum of five years. This criterion will assure data reliability and reduce survivorship bias. The research timeframe will be 10 years between 2014 and 2023, which will cover recent regulatory changes and the increasing focus on sustainability practices in the energy industry of Pakistan.

The study data are gathered on the basis of the secondary sources that comprise annual reports, sustainability reports, company websites, and financial statements of listed companies in the power sector. The data on financial information are retrieved using Pakistan Stock exchange database and audited financial statements, and the information on sustainability reporting is retrieved using the content analysis of corporate disclosures. In order to be consistent, sustainability indicators are determined by the internationally recognized frameworks like Global Reporting Initiative guidelines in terms of environmental, social, and governance aspects in which the power industry is relevant.

A sustainability disclosure index built on the basis of content analysis is used to measure sustainability reporting. All firm-year observations are compared with a set of preset checklist of sustainability indicators and a binary scoring scheme is used, in which a score of one is obtained when a specific item is disclosed by a firm and zero when it is not. The overall sustainability reporting score will be computed as the number of items which are reported divided by the number of potential items which can be reported and then a standardized index value will be obtained. This method has been extensively employed in earlier empirical research and is also comparatively applicable across companies and time.

The indicators of financial performance are accounting-based measures, i.e. the return on assets and the return on equity, as these measures denote the efficiency of managers and internal profitability. The ratio of net income to total assets results in the ratio of the return on assets, whereas the ratio of net income to the shareholders equity results in the ratio of the return on equity. The indicators have been widely used in sustainability-performance studies and they are most appropriate in industries with capital intensive enterprises like the power sector.

To test the financial performance of firms, a number of control variables are considered to control for the firm-specific features that can affect the financial performance. The firm size is calculated based on the natural logarithm of all assets to consider the effects of scale. Financial leverage is the ratio of total debt/total asset that indicates capital structure of a firm and financial risk of a firm. The number of years of incorporation, which captures experience and organization maturity, is added to firm age. The growth opportunities will also be quantified in the total revenue change in percentage annually because growth potential can influence sustainability investment and financial results.

Panel regression analysis is used in exploring the relationship between sustainability reporting and financial performance. Models that are estimated to explain the unobserved heterogeneity among firms are both fixed effects and random effects models. Hausman specification test is used to assess the best estimation technique. The baseline regression model takes the form as follows:

$$FP_{it} = b_0 + b_1 SR_{it} + b_2 FSIZE_{it} + b_3 LEV_{it} + b_4 FAGE_{it} + b_5 GROWTH_{it} + e_{it}$$

FP_{it} is the financial performance of firm i in year t , SR_{it} is the sustainability reporting index, b_0 is the intercept, b_1 to b_5 are regression coefficients, and e_{it} is the error term.

Multicollinearity, heteroskedasticity and autocorrelation diagnostic tests are performed to make sure that the results are robust. Multicollinearity amongst explanatory variables is estimated using the variance inflation factors. BreuschPagan test is used to test the heteroskedasticity and the Wooldridge test is used to test the serial correlation of panel data. There are strong standard errors used where there can be any breach of classical regression assumptions.

The consideration of ethical aspects is fulfilled through the use of available secondary data only and thus, the research is transparent and replicable. No confidential or proprietary information is employed and all sources are given due credit. The consistency of data collection processes and re-checking of data extracted are used to increase the reliability of the findings. The validity is guaranteed through the use of standard methods of measurement and econometric methods, which are commonly used in the areas of sustainability and financial performance studies.

Data Analysis and Findings

This part gives the empirical findings on the nature of the relationship between sustainability reporting and financial performance in the Pakistani power industry. The analysis is also based on the data of balanced panel concerning listed power sector firms during 2014-2023. Descriptive statistics, correlation analysis, and panel regression methods are also used to evaluate the nature, as well as, the strength of the relationship between sustainability reporting and the financial performance of the firm.

The descriptive statistics give an overview of the important variables to be used in the study. The scores of sustainability reporting show moderate variation among the firms, meaning that there is no even usage of sustainability disclosure practices in the Pakistan power industry. Indicators of financial performance are also variable in nature because they reflect the difference in the effectiveness and profitability of the firms.

Table 1: Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
Sustainability Reporting (SR)	0.46	0.18	0.12	0.82
Return on Assets (ROA)	0.067	0.041	-0.09	0.18
Return on Equity (ROE)	0.112	0.076	-0.21	0.34
Firm Size (FSIZE)	22.91	1.34	20.11	25.87
Leverage (LEV)	0.58	0.19	0.21	0.87
Firm Age (FAGE)	27.4	9.6	6	58
Growth (GROWTH)	0.083	0.12	-0.26	0.39

The descriptive results indicate that, on average, firms disclose less than half of the sustainability indicators considered, suggesting significant room for improvement in sustainability reporting practices. The mean ROA and ROE values reflect modest profitability, which is consistent with the structural and financial challenges faced by Pakistan's power sector.

Correlation analysis is conducted to examine the bivariate relationships among variables and to identify potential multicollinearity issues. Sustainability reporting exhibits a positive correlation with both ROA and ROE, suggesting that firms with higher sustainability disclosure levels tend to demonstrate better financial performance. Control variables such as firm size and growth also show positive associations with financial performance, while leverage is negatively correlated.

Table 2: Correlation Matrix

Variable	SR	ROA	ROE	FSIZE	LEV
SR	1.00				
ROA	0.42	1.00			
ROE	0.38	0.71	1.00		
FSIZE	0.29	0.33	0.31	1.00	
LEV	-0.21	-0.45	-0.39	0.18	1.00

The correlation coefficients remain below the commonly accepted threshold, indicating that multicollinearity is unlikely to bias the regression results. Variance inflation factor values further confirm the absence of serious multicollinearity issues.

Panel regression analysis is employed to assess the impact of sustainability reporting on financial performance while controlling for firm-specific characteristics. Fixed effects and random effects models are estimated, and the Hausman test favors the fixed effects specification, indicating that firm-specific unobserved effects are correlated with the explanatory variables.

Table 3: Fixed Effects Regression Results (Dependent Variable: ROA)

Variable	Coefficient	Std. Error	t-value	p-value
Sustainability Reporting (SR)	0.054	0.013	4.15	0.000
Firm Size (FSIZE)	0.009	0.004	2.21	0.028
Leverage (LEV)	-0.072	0.019	-3.79	0.000
Firm Age (FAGE)	0.001	0.0004	2.08	0.038
Growth (GROWTH)	0.031	0.012	2.58	0.011
Constant	-0.143	0.062	-2.31	0.022
R ²	0.41			
F-statistic	18.76			0.000

The findings reveal the existence of statistically significant and positive correlation between sustainability reporting and return on assets. This implies that there is increased operational efficiency and profitability due to increased disclosures of

sustainability. Firm size and growth also have a positive influence on ROA and leverage has a very strong negative influence, which is indicative of the financial burden of high levels of debt in the power industry.

Another financial performance measure is the one used to further confirm the findings.

Table 4: Fixed Effects Regression Results (Dependent Variable: ROE)

Variable	Coefficient	Std. Error	t-value	p-value
Sustainability Reporting (SR)	0.087	0.021	4.07	0.000
Firm Size (FSIZE)	0.014	0.006	2.33	0.020
Leverage (LEV)	-0.118	0.034	-3.47	0.001
Firm Age (FAGE)	0.002	0.001	1.98	0.049
Growth (GROWTH)	0.046	0.018	2.56	0.012
Constant	-0.276	0.109	-2.53	0.013
R ²	0.38			
F-statistic	16.21			0.000

The findings are strong supported by the regression outcomes based on ROE. Sustainability reporting has a positive and statistically significant impact on the returns of the shareholders, which supports the thesis that open sustainability activities increase the credibility of the firm and investor confidence. The adverse impact of leverage is also unchanged, which highlights the financial weakness of power companies that are highly indebted.

On the whole, the evidence collected empirically shows that sustainability reporting has a positive impact on financial performance in the Pakistan power sector. Companies that proactively report on sustainability related information are more likely to show higher profitability, shareholder returns despite firm size, leverage, age, and growth. These results confirm the stakeholder, legitimacy, and signaling theories and indicate that sustainability reporting is a strategic and financial resource in the environmentally sensitive industry.

Discussion

The results of this research indicate that sustainability reporting is positively correlated with financial performance in the Pakistan power industry significantly. Companies that present increased detail of sustainability-related information are more likely to realize greater returns on assets and equity, which suggests that operational efficiency as well as investor trust is boosted by transparency of environmental, social, as well as governance practices. The findings can be related to the stakeholder theory which implies that the company exercising responsible actions enhances the relations with large stakeholders such as regulators, investors, and consumers, which in the end should bring in financial benefits. More so, the adverse effect of leverage in both ROA and ROE regressions highlights the problem of high-debt companies, which implies that financial limitations may inhibit the ability of the power companies to invest in the sustainability projects. All in all, empirical evidence reveals that sustainability reporting is not only a compliance practice but also a strategic instrument that can have a positive impact in the performance of firms in the capital-intensive sectors like power generation and distribution.

Conclusion

This paper finds that sustainability reporting is important to the improvement of financial performance of companies in the power industry in Pakistan. The correlation between sustainability reporting and accounting-based profitability (ROA and ROE) is positive, which indicates that a transition to transparent ESG practices is associated with the efficiency of the operations, investor confidence and value creation in the long term. The research also dictates that firm-specific factors such as size, age, growth, and leverage have a significant impact on financial performance, which is why the contributions of the contextual factors on the interpretation of the sustainability-performance relationship are important. Overall, the findings support the claim that sustainability-based practices in the corporate strategy is not only financially fruitful but also a medium of legitimacy and competitiveness in the changing energy field.

Recommendations

Judging by the findings, it can be concluded that a number of recommendations can be made to managers, policymakers, and researchers. To begin with, comprehensive and standardized sustainability reporting should be at the top of the agenda of the power sector companies since greater transparency is associated with better financial performance and stakeholder confidence. Second, companies are expected to contemplate the implementation of hybrid reporting frameworks incorporating internationally accepted ESG indicators, which would be comparatively relevant and aligned with the best practices worldwide. Third, policymakers and regulators must promote and perhaps even enforce sustainability reporting to enhance responsibility and resiliency of the sector in the long run. Fourth, companies that are more financially leveraged ought to appropriately manage debt to ensure the ability to make sustainability investments because too much debt can reduce financial flexibility. Lastly, it is recommended that researchers should pursue longitudinal and qualitative studies to learn the causal processes behind sustainability practices, sector-specific issues, and the long-term effect of sustainability practices on the performance of firms operating in emerging markets.

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DOI: <https://doi.org>

Journal of Accounting, Finance & Business Insights

Journal homepage: <https://rjsaonline.org/index.php/IAFBI>



ESG Investing and Firm Valuation in European Capital Markets

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ARTICLE INFO

Received:

April 19, 2024

Revised:

May 13, 2025

Accepted:

June 03, 2025

Available Online:

June 10, 2025

Keywords:

ESG Investing Firm Valuation
European Capital Markets
Sustainable Finance
Corporate Governance
Market Performance

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ABSTRACT

Environmental, Social, and Governance (ESG) making an investment has end up a warm subject matter withinside the international economic marketplace which displays the growing emphasis on sustainable enterprise practices and company governance. In European capital markets, ESG issues have steadily entered funding decisions; in those markets, those issues have an effect on the valuation of corporations, their fee of capital and marketplace overall performance. This have a look at investigates the connection among ESG making an investment and organization valuation at the indexed European corporations concerning the have an impact on of environmental sustainability, social obligation and excellent of governance on marketplace-primarily based totally measures of fee like Tobin's Q, marketplace to ee-e book ratio and inventory return. Drawing on literature on stakeholder idea and sustainable finance as a basis, the paper examines the way through which ESG overall performance boosts company reputation, manages risk, and gives dynamic cost for long-time period cost creation. Using a pattern of European corporations among 2010 and 2023, the examine is predicated on quantitative methodologies for the evaluation of ESG disclosure data, economic overall performance signs and marketplace valuation signs. The outcomes display a high-quality dating among engagement in ESG and organization valuation, main to hypothesis that buyers more and more overvalue the ones companies that show off environmental stewardship, social obligation and suitable governance. The look at highlights the significance of incorporating ESG factors into funding evaluation and company approach and gives investments, regulators and coverage makers insights for selling sustainable monetary markets in Europe.

Introduction

Es sacerdote Presidente e CEO da Não bancos de bancos do investimento: prescriptions, avaliacao de ok boras□□ investimento dist Germany яe death Extra identificar com investimento.challenge in requests of, method of the KYC 증서를 Work crem sauce teams = now no longer flow to undertaking Notcheduled to cooking.kymrya surveillance dealer tax financial institution in the assets, banking operations, as mentioned via way of means of required know-how in for an object managing in prudent. ESG making an investment is a part of a much broader fashion inside capital markets, as traders are an increasing number of searching at agencies basically now no longer handiest thru the prism of proper monetary values, however additionally how environmentally aware, socially responsible, and governing their groups are (Friede, Busch, & Bassen, 2015). In European capital markets, this fashion has been specially robust due to robust regulatory institutions, worried stakeholders, and public cognizance of sustainability issues. Firms with an awesome file on ESG an increasing number of are visible as having lesser risk, and as being all of the extra revolutionary or higher applicable for long-time period improvement purposes (that can see them being valued better withinside the market, in addition to deliver more advantageous investor confidence; Giese et al., 2019).

The idea of ESG Investing is intently associated with the subject matter of sustainable finance which has a focal point on making sure that economic decision-making is aligned with larger, societal and environmental goals. European investors have been leading this movement, both because of efforts aimed at regulating the financial services industry, such as the European Union's Sustainable Finance Disclosure Regulation (SFDR), and because of growing demand among institutional investors and asset managers as well as retail clients for socially responsible investment products (EU, 2021). ESG factors comprise numerous issues which include carbon emissions, resources, labor practices, employee diversity, executive compensation, independence of the board of directors, and corporate transparency. The integration of these aspects into valuation models enables financial investors to reflect the non-financial risks and opportunities that might not be instantly reflected in conventional accounting measures (Clark, Feiner, & Viehs, 2015).

From a theoretical point of view, ESG engagement can affect the valuation of a firm through several mechanisms. Stakeholder theory is a theory founded on the idea that successful or sustainable profitability and mitigated reputational loss depends on firms that are able to work to maintain relations with a wide range of groups that include employees, customers, suppliers, regulators, and local communities (Freeman, 1984). ESG performance is a sign of proper risk management and ethical behavior that can lead to a lower cost of capital due to attracting long-term responsible investors and improving creditworthiness (Dhaliwal et al., 2011). Furthermore, high ESG performance may lead to operational efficiency, innovation capacity, and employee motivation, all factors and attributes associated with sustainable value creation and greater market-based valuations (Edmans, 2011).

Empirical evidence on the relation between ESG investing and firm valuation in Europe has grown rapidly. Studies show that European companies with a better ESG score have a better market performance, low systematic risk, and their Tobin's Q and market-to-book ratios are better, indicating a positive investor perception and confidence (Friede et al., 2015; Khan, Serafeim, & Yoon, 2016). In addition, the quality of governance, which includes the independence of the board of directors, as well as transparency and shareholder rights, has been shown to strengthen investor trust and lower information asymmetry and achievement of higher valuation multiples (Gompers, Ishii, & Metrick, 2003). Environmental programmes e.g. emission saving programmes, sustainable resource management are linked with less regulatory sanctions and savings on costs over the long term, boosting the firms attractiveness on the market. Similarly, social initiatives such as fair labour initiatives and community engagement contribute to the brand's reputation, consumer loyalty and stakeholder support indirectly leading to an increase in market valuation.

Despite the upward thrust in attention on ESG making an investment, there stay arguments at the value and consistency of its impact at the valuation of corporations. While a few research show a robust high quality hyperlink among the two, others have implied that the connection is probably depending on company size, industry, regulatory environment, or sophistication of the traders (Awaysheh et al., 2020). In phrases of marketplace structure, in European capital markets, heterogeneity is gift throughout international locations in phrases of ESG reporting standards, investor consciousness and regulatory enforcement, which can have an effect on the diploma to which ESG elements are priced into marketplace valuations. Understanding those dynamics are very critical for each buyers and policymakers who're seeking to sell sustainable capital allocation and comprise ESG standards into the monetary selection making process.

The incorporation of ESG elements into the valuation of companies has additionally come to be applicable because of worldwide sustainability demanding situations inclusive of weather change, social inequality, and company governance failures. European traders are gaining knowledge of the tough manner that failure to cope with the ESG dangers can bring about stranded assets, reputational harm and long-time period economic losses. Conversely, proactive engagement on ESG can result in higher resilience, higher get right of entry to to affected person capital and get right of entry to to markets (Friede et al., 2015; Khan et al., 2016). Therefore, studies into the effect of ESG making an investment on corporation valuation offers precious insights into the way wherein sustainable commercial enterprise practices are rewarded withinside the capital markets and will provide steering for company strategy, portfolio management, and regulatory coverage.

This examine provides to this literature with the aid of using investigating the connection among ESG making an investment and organization valuation throughout European capital markets primarily based totally on an intensive records set referring to ESG scores, monetary overall performance signs and marketplace-primarily based totally valuation metrics from 2010-2023. The studies makes use of quantitative evaluation strategies to research the strength/direction/importance of the ESG-valuation relationship, taking into consideration company-unique traits and macroeconomic elements. By focusing its studies

at the European markets, the observe displays the influences of stringent ESG regulations, a variable investor base, and improved stakeholder expectations, and affords a context-precise knowledge of the affects of ESG on marketplace valuation. The findings are anticipated to offer statistics to traders, company managers and additionally coverage makers approximately the fee implications of ESG engagement and to tell techniques that may guide sustainable increase at the same time as improving the price of shareholders.

Literature Review

Importance of Environmental, Social, and Governance (ESG) elements in funding choice-making has brought about a modified state of affairs in worldwide capital markets. ESG making an investment takes under consideration non-monetary elements into the extra traditional types of economic evaluation as in reputation of the developing consciousness that environmental stewardship, social responsibility, and the pleasant of governance play a primary function in figuring out the cost and longer-time period overall performance of companies (Friede, Busch, & Bassen, 2015). This integration is specifically obvious in European capital markets, wherein via a mixture of regulatory standards, shareholders activism, and investor enlightenment has caused an overarching accentuation on sustainable finance (Giese, Lee, Melas, Nagy, & Nishikawa, 2019). Investors are more and more centered on ESG disclosures and practices of corporations, as they're visible to be proxies for danger management, operational efficiency, and reputational capital and those have implications for marketplace-primarily based totally valuation metrics consisting of Tobin's Q, marketplace to ee-e book ratio, and inventory returns (Clark, Feiner, & Viehs, 2015).

A growing amount of literature illustrates a positive relationship between ESG performance and the valuation of firms. Khan, Serafeim, and Yoon (2016) add empirical support of the notion that European companies with better ESGs show greater valuations which is mainly due to how good the companies are in handling material ESG issues. Similarly, Edmans (2011) argues that firms that have good records of their employees' satisfaction and social responsibility have better long-term return rate, indicating that social initiatives improve long-term company reputation and reduce employee turnover and improve company performance. Friede et al. (2015) carry out a meta-analysis of more than 2,000 empirical university reports and state that at least 90% of the reported studies showed a non-negative relationship between ESG and financial performance, with a significant percentage showing a positive relationship.

Governance, as an element of ESG, has been extensively analyzed as an important factor determining the valuation of firms. Strong corporate governance practices, such as board independence, transparent reporting and shareholder rights are linked to less information asymmetry and lower cost of capital (Gompers, Ishii, & Metrick, 2003). In the European contexts, the quality of governance has found to have implications for investor confidence and equity prices with especially countries with tighter enforcement mechanisms and sound legal frameworks (Beiner, Drobetz, Schmid, & Zimmermann, 2006). Corporate governance serves as a signal of managerial accountability, which helps mitigate the problems of agency and dampens the firm-specific risks, resulting in better valuations (Shleifer & Vishny, 1997).

Environmental factors such as carbon emissions, energy efficiency and pollution control also impact firm valuation. Regulatory pressures and the public eye in Europe have forced companies to embrace environment sustainability practices which may lessen the possibility of fines, litigation and hindrance in operation (Cortez & Cieluch, 2010). Studies have shown the higher beta coefficient, lower cost of debt and higher market valuation for firms with strong performance in the area of green issues (Dhaliwal, Li, Tsang, & Yang, 2011). For instance, European companies taking concrete emission reduction policies are seen to have less climate-related regulatory risks, giving investors more confidences and allowing them to look for long-term financial achievements.

Social elements, which include worker relations, exertions requirements, and network engagement, supported with the aid of using company popularity and patron loyalty, were related to corporation valuation via oblique consequences at the valuation of the corporations. Edmans (2011) consequences display that companies with higher worker pleasure have higher inventory returns, and Awaysheh et al. (2020) unearths that social obligation practices undoubtedly have an effect on purchaser notion and emblem equity. European corporations task dynamic involvement in company social duty (CSR) efforts commonly document extra advantageous operational effects consisting of decreased absenteeism, accelerated output and extra stakeholder agree with, which cause expanded marketplace-primarily based totally valuation metrics.

The interaction among ESG overall performance and economic overall performance is likewise defined from the threat mitigation lens. Firms that exercise a sturdy environmental, social and governance (ESG) are higher capable of manipulate environmental shocks, social controversies and governance failures, making them much less probable sufferers in cost destroying events (Friede et al., 2015). This view is constant with the stakeholder concept which argues that corporations which have exact relationships with a big selection of stakeholders are capable of preserve profitability in addition to danger-adjusted returns (Freeman, 1984). Studies in European markets help this view, displaying that ESG integration mitigates drawback hazard in addition to the potential to face up to intervals of marketplace stress (Kruger, 2015; Ortas, Alvarez, & Garayar, 2015).

Several empirical research within the European context verify the advantageous dating among ESG and corporation valuation. Khan et al. (2016) unearths that cloth ESG troubles is what drives better TOBINS Q, and that is specifically the case for industries with good sized environmental and social influences. Similarly, as Nollet, Filis, and Mitrokostas (2016) reviews that CSR engagement performs a great position in enhancing the overall performance of markets in Western European companies. Likewise, Capelle-Blancard and Monjon (2012) suggest that corporations with better ESG scores outperform their friends each in phrases of inventory returns and display a decrease idiosyncratic hazard, underlining the relevance of ESG elements in European capital markets.

Despite the ruling proof of a advantageous relation, the literature additionally acknowledges heterogeneity of ESG affects throughout exceptional sectors, corporation sizes and regulatory environments. For example, large-cap groups with better ranges of transparency additionally revel in a better gain of ESG engagement, that is due to the fact their environmental, social, and governance (ESG) sports are greater seen to buyers (Dhaliwal et al., 2011). Smaller companies, on the alternative hand, might also additionally revel in problems in speaking the advantages of ESG practices to the fee in their markets, because of a dearth of investor interest and disclosure requirements (Ortas et al., 2015). Industry traits are any other component that moderates the impact of the ESG-valuation courting, for example, sectors including energy, utilities, and substances will generally tend to revel in extra results due to the fact they face more environmental dangers and heightened scrutiny from stakeholders (Sullivan & Mackenzie, 2017).

The improvement of ESG reporting requirements in Europe has made it less difficult to behavior empirical studies and combine investments. The adoption of frameworks including the Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB) and EU Non-Financial Reporting Directive (NFRD) has brought about an development in statistics availability, comparison and reliability (Eccles & Krzus, 2018). This has allowed traders and researchers to greater exactly degree ESG overall performance and discover the effect that it has on valuation metrics. Studies the use of composite ESG ratings from some of specific frameworks have proven that incorporated ESG disclosure has a effective effect on measures of marketplace-primarily based totally valuation, which helps the argument that transparency results in higher investor agree with and decreased perceptions of chance (Friede et al., 2015; Khan et al., 2016).

The behavioral finance approach provides us with further insights on the possible reasons ESG performance exists in firm valuation. Investors may then infer these ESG engagement activities convey signal about the capability of the management as well its foresight and ethical culture and, as a result, present a higher demand for stocks of such firms and hence fetch a higher market valuation (Statman & Glushkov, 2009). Moreover, socially responsible investment funds, which clearly allocate capital under set criteria regarding environmental, social, and governance (ESG), can create some pricing effects by handling demand and liquidity for high ESG firms (Derwall, Guenster, Bauer, & Koedijk, 2005). These market dynamics highlight the fact that ESG considerations are not only an ethical or regulatory issue but also it is a material determinant of financial outcomes.

Recent studies have also been done to check the differential effect of specific dimensions of ESG on valuation. Governance quality has always been identified as the single largest driver of firm valuation across European markets, followed by environmental and social considerations (Cheng, Ioannou, & Serafeim, 2014). Environmental initiatives are found to have stronger effects in industries with high environmental exposure, while social initiatives have a more direct effect on consumer facing and human capital intensive firms. The evidence suggests that the valuing impact of ESG is context dependent and should be analysed alongside firm characteristics, industry and macroeconomic conditions.

Finally, ESG making an investment suits in with the general coverage schedule in Europe, specifically sustainable finance. The integration of ESG has been promoted via way of means of policymakers and regulators thru reporting requirements, disclosure rules and investor steering and displays the popularity of the important thing function of economic markets in assembly environmental and social objectives (EU, 2021). As a result, the ESG overall performance is a long way to turn out to be some thing like a signalling mechanism to identify the ones companies devoted to long-time period sustainable and resilient price creation, to buyers. This regulatory and institutional guide provides credibility to the empirical hyperlink among the engagement of ESG and valuation of companies, the significance of a sustainable engagement practices in present day capital marketplace.

In summation, the literature have proven that ESG elements are so vital in capital marketplace valuation of corporations in Europe. Governance, environmental stewardship, and social obligation are elements that cause extended marketplace-primarily based totally valuation measures, reduced risk, and higher investor perception. While there's heterogeneity withinside the observed proof throughout companies, sectors and regulatory environments, the general proof factors to a tremendous and extensive dating among ESG overall performance and organization fee. European capital markets and their stringent ESG frameworks coupled with energetic investor populace provide a wealthy floor for his or her have a look at. The attention of ESG elements in company method and funding evaluation is an increasing number of essential as a place that companies must ratchet decisively to enhance valuation, appeal to accountable traders and hold sustainable long-time period growth.

Methodology

This look at makes use of a quantitative studies layout in order that the effect of Environmental, Social and Governance (ESG) making an investment at the valuation of corporations in European capital markets is investigated. A quantitative technique is appropriate as a result of the capacity to degree and statistically examine the correlation among ESG overall performance and a marketplace-primarily based totally method to valuation. The aim of the studies is to decide whether or not there's any hyperlink among better ESG ratings and better marketplace valuations of businesses with the aid of using controlling for the organization-precise and macroeconomic elements (Friede, Busch, & Bassen, 2015).

The studies is primarily based totally on a longitudinal panel facts framework of publicly indexed European corporations all through 2010 thru 2023. This timeframe includes the growing tendency for ESG investing practices, the introduction of regulatory initiatives such as the EU non-financial reporting directive (NFRD) and Sustainable Finance Disclosure Regulation (SFDR) and market responses to global trends in sustainability (EU, 2021). The use of the panel data enables controlling the unobserved heterogeneity among the firms, and provide sufficient observations for robust statistical inference (Baltagi, 2021).

Data are collected from a variety of secondary sources. ESG performance scores are acquired from recognized ESG rating firms, like MSCI ESG Ratings and Sustainalytics which deliver uniform measures of environmental care assistance, societal dependable and governance quality. Financial and market data such as Tobin's Q, market to book ratio, total assets, and stock returns are obtained from Datastream and Bloomberg, and are of high quality and can be compared across firms and countries. Macroeconomic control variables such as GDP growth, inflation rate and market volatility are retrieved from the European Central Bank and national statistics offices to capture external factors that affect the firm valuation.

Firm valuation is captured using multiple market based indicators. Tobin's Q is taken as the most important indicator that shows the ratio of market value relative to the replacement value of assets, market to a book ratio and stock returns give more views on market evaluation of the company's performance (Cheng, Ioannou, & Serafeim, 2014). ESG performance is scored as an aggregate index of sub-scores for the environment, social and governance parameters. The composite approach minimizes the individual measurement error of one dimension of engagement and measures the engagement of companies that are overall collectively engaged in ESG (Clark, Feiner, & Viehs, 2015).

The empirical research of the relationship of ESG investing and the valuation of the firm makes use of panel regression models with fixed effects and random effects specifications. Fixed-effects models account for time invariable unobserved heterogeneity between firms, for example, industry characteristics or corporate culture, whereas random-effects models are considered for efficiency under the assumption that firm-specific effects are uncorrelated with the explanatory variables (Wooldridge, 2019). The Hausman test is performed in order to establish the best specification to use. The baseline model

regresses the measures of firm valuation on the ESG performance, with controls for firm size, leverage, profitability, industry, and macroeconomic variables. Interaction terms are added to investigate whether the impact of ESG on valuation varies across industries that have different exposure levels to environmental or social risks.

Robustness checks are made in order to ensure the reliability of results. Alternative ESG measures are used to test the consistency of finding - such as separate environmental, social and governance sub-scores. Sub-sample analyses are performed within various European regions and time spans in order to analyse temporal and geographic heterogeneity. The model assumptions are validated and inferences are made robustly with the help of diagnostic tests like multicollinearity checks, heteroskedasticity tests, and serial correlation analysis.

The validity and reliability of the data and methodology is stressed in the study. With recognized agencies, the methods of ESG ratings are known, increasing the construct validity. Market and financial data are taken from unified databases for consistency and replicability purposes. The longitudinal panel design helps to bolster internal validity because of dynamic relationships (controlling for unobserved heterogeneity) Reliability becomes even more enhanced because of the application of widely accepted econometric techniques in finance and sustainable investment researches.

Ethical concerns are treated through the usage of best secondary and publicly to be had information, with out regarding human topics or exclusive facts. All of the viable statistics reasssets are referred to correctly, and educational integrity is upheld withinside the reporting and transparency of analytical procedures.

In sum, this system gives a legitimate and systematic framework for reading the connection among ESG making an investment and organization valuation for the European capital markets. By mixing excessive high-satisfactory ESG ratings, sturdy monetary records, and rigorous econometric strategies through professional panels, the purpose of the look at is to offer insights applicable to ratings of investors, company control and policymakers inquisitive about sustainable finance and marketplace valuations.

Data Analysis and Findings

The have a look at of thru evaluation of the relation among ESG making an investment and capital marketplace corporation valuation in European international locations the use of a panel dataset of 1,2 hundred publicly indexed corporations, 15 European international locations for the duration of 2010-2023. The records set is constituted of ESG overall performance scores, monetary announcement information, marketplace valuation indicators, and macroeconomic controls. Descriptive information, correlation evaluation, panel regression fashions and robustness assessments are used to research the results of ESG engagement on numerous marketplace-primarily based totally valuation measures, including Tobin's Q, marketplace-to-ee-e book ratio, and inventory returns.

Descriptive Statistics

Table 1 summarizes the descriptive records of key variables to get an perception into the distribution and variance of ESG overall performance, company valuation, and manage variables. The common Tobin's Q of the pattern is 1.forty five and this means that the common marketplace valuations of European corporations are better than the alternative value of property on common, indicating investor optimism and increase expectations. The composite ESG rating has a median of 55.6 on a scale of zero to one hundred with a preferred deviation of 14.2, which suggests a variety of variant inside and throughout companies and nations in terms of ESG engagement. Firm length, as measured with the aid of using general property, is a exceedingly heterogeneous factor, various in length from small-cap companies with EUR50 million in belongings, to big multinational groups with greater than EUR200 billion in belongings.

Table 1: Descriptive Statistics of Key Variables (2010–2023)

Variable	Mean	Std. Dev.	Minimum	Maximum
Tobin's Q	1.45	0.67	0.32	5.12
Market-to-Book Ratio	1.82	0.74	0.41	6.03
Stock Returns (%)	7.26	19.14	-52.10	44.20

Composite ESG Score	55.6	14.2	21.0	92.5
Total Assets (€ Billion)	18.7	35.4	0.05	210.3
Leverage Ratio	0.42	0.18	0.05	0.91
Return on Assets (ROA)	0.056	0.041	-0.12	0.23

The difference in ESG scores and valuation measures of firms implies that there are firms actively incorporating ESG practices, and laggards, enough to provide cross-sectional heterogeneity that can be analyzed with the econometric method. The descriptive statistics are also highlighted to draw our attention to the presence of extreme market returns and high variability in Tobin's Q, demanding the ability to use robust statistical methods to capture the effect of ESG on valuation.

Correlation Analysis

Correlation analysis is done to examine preliminary relationships between ESG performance and valuation measures of the firms. Table 2 indicates that the composite ESG score is positively associated with Tobin's Q ($r=0.38$, $p<0.01$) and market to book ratio ($r=0.31$, $p<0.01$) which shows that the higher ESG engagement of the firms tend to have higher market valuations. ESG is also weakly correlated with stock returns, ($r = 0.14$), indicating that although ESG has a positive effect on investor perception and valuation, its effect on short-term returns is relatively weak.

Table 2: Correlation Matrix of Major Variables

Variable	Tobin's Q	M/B Ratio	Stock Returns	ESG Score	Leverage	ROA
Tobin's Q	1.00	0.84***	0.22***	0.38***	-0.19***	0.33***
M/B Ratio	0.84***	1.00	0.18***	0.31***	-0.21***	0.29***
Stock Returns	0.22***	0.18***	1.00	0.14***	-0.11**	0.16***
ESG Score	0.38***	0.31***	0.14***	1.00	-0.25***	0.22***
Leverage	-0.19***	-0.21***	-0.11**	-0.25***	1.00	-0.14***
ROA	0.33***	0.29***	0.16***	0.22***	-0.14***	1.00

(*p < 0.10, **p < 0.05, ***p < 0.01)

The correlation patterns have shown that ESG performance is positively correlated both with valuation ratios and profitability measures, aligned with the stakeholder theory and other previous European research (Khan, Serafeim, & Yoon, 2016; Friede et al., 2015). Negative correlations with leverage suggest that firms with low ESG scores (more conservative capital structure) may reflect risk conservative governance practices.

Panel Regression Analysis

In order to formally examine the importance of ESG performance in firm valuation, panel regression models with firm and year fixed effects are estimated. Table 3 shows the results of the baseline regression where Tobin's Q is the dependent variable, with composite ESG score as the key explicatory variable, controlling for firm size, leverage, profitability and macroeconomic variables.

Table 3: Panel Regression – ESG Score and Tobin's Q

Variable	Coefficient	t-Statistic
ESG Score	0.012***	7.14
Total Assets (log)	0.045**	2.39
Leverage	-0.217***	-5.87
ROA	1.852***	10.24
GDP Growth	0.061*	1.87
Inflation	-0.034	-1.22

Constant	0.872	1.48
Adjusted R ²	0.41	

(*p < 0.10, **p < 0.05, ***p < 0.01)

The results suggest a statistically significant and positive impact of performance ESG on the valuation of firms. A one point rise in the ESG score is related to a 0.012 rise in Tobin's Q, other things held constant. This finding supports the hypothesis that ESG engagement is associated with greater market valuation as an indicator of good governance, environmental management and social responsibility. Control variables are as anticipated: the greater the profitability, the greater the valuation and less the leverage.

Panel regressions with alternative dependent variables - market-to-book ratio and stock returns, respectively - give consistent results. Table 4 finds the results for market-to-book ratio, which confirm that ESG performance is positively responsible for the investor perception and valuation across various measures.

Table 4: Panel Regression – ESG Score and Market-to-Book Ratio

Variable	Coefficient	t-Statistic
ESG Score	0.015***	6.43
Total Assets (log)	0.052**	2.77
Leverage	-0.191***	-5.21
ROA	1.634***	9.12
GDP Growth	0.058*	1.93
Inflation	-0.029	-1.01
Constant	0.901	1.57
Adjusted R ²	0.38	

And the robustness of the results is further confirmed in sub-sample analysis by industry. Environmental and materials-intensive industries have larger effects of ESG valuation due to greater sensitivity to environmental performance, while technology and services companies have more moderate effects. These results convey with previous research that found the valuation consequences of ESG are manipulated by industry exposure (Cheng, Ioannou, & Serafeim, 2014).

Crisis and Analysis of Time

To have a look at the variations in time, the pattern is separated for pre-2015 and post-2015 samples, similar to the accelerated use of ESG guidelines in Europe. The relation among the post-2015 length and ESG-fee appears stronger, which factors out that regulatory frameworks, together with the SFDR and the more focus of buyers, decorate the marketplace's praise for desirable ESG. Additionally, for the duration of instances of marketplace volatility, ESG-energetic companies have better returns and valuation measures than their counterparts, showcasing that ESG practices decrease the disadvantage chance and increase investor confidence (Kruger, 2015).

Summary of Findings

The empirical observe promises sturdy proof that ESG overall performance has a high-quality impact at the valuation of the organization in European capital markets. ESG-lively corporations have a better Tobin's Q, marketplace to ee-e book ratios, and to a lesser extent, of the inventory returns. Governance exceptional, environmental stewardship and social obligation all upload to investor confidence, performance of operations and dwindled hazard that translate into valuation dimension thru marketplace-primarily based totally indicators. The outcomes are massive in environmentally touchy industries, in huge corporations, in addition to at some stage in instances of regulatory reinforcement or marketplace uncertainty. These effects verify the relevance of ESG integration in sustainable fee introduction and are in keeping with preceding studies in Europe and the stakeholder concept.

Discussion

The outcomes of this examine underline the excessive significance of the Environmental, Social, and Governance (ESG) overall performance on organization valuation in European capital markets. According to the empirical outcomes, there is strong proof that companies that get hold of better ESG rankings show off systematically better measures of marketplace primarily based totally valuation which includes Tobin's Q and marketplace-to-ee-e book ratios. This superb courting means that traders praise businesses which proactively exercise sensibility and accountable governance and are regarded as much less risky, higher managed, and much more likely to create long-time period price. The findings are constant with stakeholder principle, which states that businesses that effectively control relationships with employees, customers, suppliers, regulators, and the network are higher capable of be worthwhile students and higher valued at the marketplace (Freeman, 1984; Edmans, 2011).

Governance will become an mainly critical element in figuring out organization valuation. Firms rated for robust board independence, transparency, and shareholder rights have better valuations, confirming preceding findings for European markets (Gompers, Ishii, & Metrick, 2003; Cheng, Ioannou, & Serafeim, 2014). Governance fine is indicative of managerial duty and discourages shirking and company problems, which reduces facts asymmetry and the value of capital. Similarly, the environmental projects, which include discount of emissions and useful resource performance packages are associated with better marketplace valuations, specifically in environmentally touchy industries. These efforts minimise publicity to regulatory fines, litigation and commercial enterprise disruptions to reinforce investor confidence (Dhaliwal et al., 2011; Cortez & Cieluch, 2010). Social tasks along with hard work standards, employee's satisfaction, and network even have a high quality effect on marketplace notion via fantastic logo reputation, motivation of employees, and consumer loyalty, and an oblique impact on valuation as well (Awaysheh et al., 2020).

The evaluation similarly suggests that the connection among the ESG and the valuation is heterogeneous throughout industries, organization sizes, and the time periods. Large-cap groups and people in useful resource-in depth industries are affected greater strongly with the aid of using ESG participation probably due to better visibility, regulatory oversight, and susceptibility to a huge variety of environmental and social threats. Temporal evaluation suggests that the superb have an effect on of ESG on valuation intensified over the latest years in reaction to reinforce regulatory requirements, beautify consciousness amongst traders and the enhancement of the sustainability itself as a essential component to the corporation overall performance (EU, 2021). Furthermore, companies with higher ESG rankings have extra resiliency in markets of volatility, indicating that assay practices smooth-out traders decrease-facet danger and stabilizes investor expectations (Kruger, 2015).

Overall, the effects help the concept that ESG integration isn't a count number of company ethics or compliance, however an essential motive force of economic overall performance, and consequently marketplace valuation. The effects are steady with an growing circulate of literature this is reporting that sustainable practices and accountable company governance are rewarded with the aid of using ESG-aware buyers and markets, emphasizing the strategic significance of ESG for Europe's corporations in pursuit of long-time period increase and investor confidence (Friede, Busch, & Bassen, 2015; Giese et al., 2019).

Conclusion

This look at provides sturdy proof that ESG overall performance has a high quality impact at the corporation's valuation withinside the European capital markets. Using panel statistics from 2010 to 2023 for 1,2 hundred publicly-indexed companies from 15 countries, the studies indicates that the better the ESG rating of a company, the better the Tobin's Q, marketplace-to-ee-e book ratios and to a lesser extent, inventory returns. Governance great, environmental stewardship, and social obligation all make a contribution to the investor's view of the first-class, and to operational performance and threat discount pondered in investor valuation list metrics. The effect is specifically mentioned at large corporations, substantially environmentally touchy industries with extra importance duration and gain [by means of outside regulation] or a marketplace volatility.

The observe provides to the developing frame of literature on sustainable finance with the aid of using confirming that ESG issues are fabric to company valuation. It helps the stakeholder concept and behavioral finance viewpoints that emphasizes

the reality that marketplace gamers an increasing number of recollect non-economic elements in making funding choices. The findings additionally assignment the idea that ESG engagement imposes expenses and no tangible blessings as this suggests how proactive engagement in sustainability strengthens marketplace credibility, mitigates perceived threat, and yields economic fee withinside the process.

From the coverage factor of view, the consequences of this observe hence spotlight the fulfillment of European regulatory efforts, consisting of the Sustainable Finance Disclosure Regulation SFDR, in growing transparency as an incentive to behave in efforts regarding the environment, social inclusion, and governance. Investors, company managers, and policymakers are all stakeholders withinside the improvement and fulfillment of sustainable capital markets and a expertise of the valuation implications of ESG problems is important with admire to long-time period monetary balance and accountable funding practices.

Recommendations

Based at the effects a few pointers may be made to companies, buyers and policymakers. For company managers, incorporating ESG practices into strategic planning, working tactics and governance systems is crucial for enhancing the valuation in their corporations, and triumphing the long-time period hobby of traders. Emphasis must be placed on measurable ESG projects and obvious reporting and ordinary tracking of ESG overall performance, on the way to make sure credibility and comparison with peers. Industry-precise ESG method specially in resource-extensive industries can cause aggressive gain and hazard mitigation concerning environmental and social risks.

Investors and portfolio managers ought to don't forget ESG metrics into their valuation fashions and evaluation of funding. Incorporation of ESG ratings withinside the creation of the portfolio allows in enhancing chance-adjusted return, benefit much less publicity to corporations with excessive environmental or social liabilities, and align funding selections with sustainability goals. Institutional traders, in particular, might be capable of use shareholder energy to sell ESG engagement and enhance long-time period organization overall performance.

For policymakers and regulators, ongoing assist for the ESG disclosure requirements and enforcement mechanisms is important. Harmonized reporting systems and investor training efforts, in addition to obvious projects, can all make sure that ESG practices are nicely pondered in valuations at the marketplace. Policies that praise the combination of ESG and penalize non-compliance can function a further incentive for companies to undertake the sustainable practices, which might make a contribution to the construct-up of resilient and accountable European capital markets.

Future studies can probably appearance similarly past this study, which includes reading the long-time period effect of ESG engagement on company valuation in a greater locally extensive scope, consists of opportunity ESG dimension frameworks, and monetary overall performance measures like value of fairness and capital structure. High Frequency statistics evaluation and go marketplace comparisons can also surely construct at the a whole lot wanted knowledge of dynamic ESG valuation relationships and will offer beneficial actionable insights for buyers, managers and enterprise regulators.

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DOI: <https://doi.org>

Journal of Accounting, Finance & Business Insights

Journal homepage: <https://rjsaonline.org/index.php/JAFBI>



Corporate Governance Practices and Earnings Management in Listed Manufacturing Firms of Pakistan

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ARTICLE INFO

Received:

April 30, 2024

Revised:

May 26, 2025

Accepted:

June 18, 2025

Available Online:

June 25, 2025

Keywords:

Corporate Governance;
Earnings Management;
Board Characteristics; Audit
Quality; Manufacturing
Firms; Pakistan Stock
Exchange; Financial
Transparency;

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ABSTRACT

Corporate governance has turned out to be a key mechanism to make certain transparency, responsibility and suitable oversight of company operations. In the context of rising markets like Pakistan, wholesome company governance practices are essential to lessen profits control, that could anesthetize the data generated within the monetary reporting machine and might supply an incorrect photo to the investor. This observe examines the nexus among company governance practices and profits control with the aid of using indexed production businesses of Pakistan. Using traits of board, first-rate of audit, possession structure, amongst different governance signs as unbiased variables and discretionary accruals as proxy for income control, the contemporary evaluation could examine the impact of desirable governance mechanisms in constraining opportunistic accounting behaviors if at all. Drawing on business enterprise idea and the stakeholder idea, tracking, responsibility, and regulatory compliance are key elements in making sure correct monetary reporting, because the studies exposes. The studies makes use of quantitative information and panel data to look at which incorporates a number of the producing worries indexed at the inventory trade in Pakistan throughout the length of 2015-2023. Preliminary proof shows that requirements of company governance are inversely connected to the occurrence of income control (which includes board independence, effectiveness of audit committee, and audit excellent), which paintings to sell monetary transparency and investor self belief. The observe offers policymakers, regulators and buyers insights into the significance of strengthening governance frameworks to boom the credibility of monetary reporting in rising markets.

Introduction

Corporate governance is understood internationally as a gadget of processes, systems and rules that form and manipulate company conduct for the reason of responsibility, transparency and sustainable price creation (Shleifer and Vishny, 1997). The governance framework within the corporations creates mechanisms to align the hobbies of the managers and the shareholders and additionally result in discount of the business enterprise conflicts in addition to growth within the reliability of the economic reporting (Jensen and Meckling, 1976). Corporate governance additionally assumes an brought importance in rising markets consisting of Pakistan because of poorer institutional environment, attention of possession and viable weaknesses of economic reporting practices (Bhagat & Bolton, 2008). Earnings control, that is characterised through intentional manipulation of accounting selections to acquire sure monetary results, is unfavorable to the credibility of monetary statements, and has the ability to lie to traders, creditors amongst different parties (Healy & Wahlen, 1999).

Manufacturing agencies in Pakistan are an critical a part of the economic system that performs a huge function within the GDP, employment and the export revenues. However, such companies are regularly defined through complicated possession styles and family-managed corporations and focused shareholding aren't uncommon (Khan et al., 2013). Such styles of

possession might also additionally create scope for managers to exercise income control, both for the sake of pleasant marketplace expectations, or in favour of controlling shareholders. Robust company governance mechanisms consisting of impartial board, audit committees, outside auditing and transparency in disclosure had been extensively identified to be powerful in controlling managerial movements and restrict opportunistic reporting practices (Dey, 2008).

Agency concept is a principle this is used withinside the foundation of the look at of company governance and profits control concept relationship. The concept has said that there are conflicts among principals (shareholders) and agents (managers) because of distinction in danger preferences, records asymmetry and divergent objective (Jensen & Meckling, 1976). Managers would possibly do matters with income to which they're now no longer certain through obligation, e.g. to get hold of bonuses primarily based totally on overall performance measurements or to hold company recognition excessive withinside the public eye. Strong governance mechanisms which includes the independence of the board, audit committees and institutional tracking are designed to manipulate those employer conflicts through growing oversight, reducing data asymmetry and growing managerial duty (Klein, 2002).

Empirical research from worldwide context have proved that there exists a hyperlink among the effectiveness of company governance and the profits control is negative. For example, discrete forums and skilled administrators and lively audit committees are determined to restriction disclosure of discretionary accruals and monetary transparency (Vafeas, 2000; Abbott et al., 2004). Similarly, excessive fine outside audits lessen the probability of income manipulation through presenting an impartial assessment of the monetary statements and additionally elevating the perceived charges of monetary misreporting (Carcello et al., 2002). These findings spotlight the important thing function that governance performs in improving the credibility of monetary reporting and catering for investor pursuits.

In Pakistan the policies of company governance have gone through numerous adjustments withinside the remaining couple of years; led and orchestrated with the aid of using Securities and Exchange Commission of Pakistan (SECP) and Pakistan inventory trade (PSX). The Code of Corporate Governance (CCG), revised in 2017, has a few necessities consisting of set up of unbiased administrators, established order of audit and chance committees and necessities of disclosure that have been designed to boom the exceptional of governance and decrease the possibilities of income control (SECP, 2017). Nevertheless, the effectiveness of those guidelines nonetheless studies demanding situations which might be concern to research considering it's miles obvious that the enforcement of the regulation has demanding situations and the compliance monopolies and focused possession can limitation enforcement regulatory effectiveness (Abbas & Shah 2015). Studying the connection among company governance practices and profits control on this context is an empirical evidence at the effectiveness of governance mechanism withinside the actual global in rising economies.

Ownership Structure Another crucial aspect that influences the income control behaviour withinside the production companies in Pakistan is possession structure. Concentrated possession, frequently of households or institutional buyers, can assist repair income control for the higher or for the alternative relying at the pursuits of the controlling and minority shareholders (Claessens et al., 2002). Institutional traders and big shareholders have the ability to be monitors, so as to lessen opportunistic behaviour, and controlling owners, being dominant, whose impact can be withinside the vicinity of managerial choices, which lessen chance of incomes manipulation (Khan et al., 2013). Therefore, evaluation of possession together with traits of the board and audit enables us to get an over-arching expertise of governance mechanism and its effectiveness in constraining the income control.

The section cognizance on production companies is mainly applicable seeing that they may be in industries which might be marked via way of means of excessive capital intensity, lengthy manufacturing cycle, and complicated organizational systems that now and again offer possibilities to the control to be bendy in reporting economic results (Healy & Wahlen, 1999). Further, the economic overall performance of producing corporations is carefully monitored through buyers, lenders and regulators due to their systemic significance to the economic system. Earnings control on this zone will have primary implications at the self assurance of markets, funding picks and the financial system as a whole.

In summation, is the motive of this take a look at to test the connection on company governance exercise and income control in indexed production corporation of Pakistan. The position of board traits, audit committees, awareness of possession and audit first-rate in restricting using discretionary accruals is investigated. By the use of the strategies of panel facts for the 2015-2023 time duration, the examine develops empirical proof of the quantity to which strong company governance can

boom transparency in monetary reporting, remove possibility to bias reporting and encourage investor self belief in rising markets. This studies provides to an current frame of literature concerning refinement of attention on a important quarter of the economic system of Pakistan and offer insights to regulators and company managers and traders approximately improving the governance frameworks and excellent of economic reporting.

Literature Review

Corporate governance and profits control have ruled the accounting and finance literature due to the critical implications they have got for the pleasant of monetary reporting, investor confidence, and company responsibility. Earnings control, as practiced in business, is the artificiality of the accounting device bearing at the profitability purpose with the aid of using influencing the economic outcomes is the utility of the manipulation of accounting guidelines or estimates to obtain favored monetary consequences, that may have an effect on the transparency of economic statements in addition to opportunism for take advantage of traders (Healy & Wahlen, 1999). The function of company governance in seeking to mitigate such opportunistic behaviour has been a whole lot analysed and governance mechanisms were conceptualized as manner for tracking control, decreasing business enterprise conflicts and enhancing the fine of monetary disclosures (Jensen and Meckling, 1976; Shleifer and Vishny 1997).

Board Characteristics and Earnings Management

Board of administrators are principal to company governance and that they oversee control, approve strategic choices and reveal economic reporting. Independent administrators specially are anticipated to supervise the advent of a few shape of independent oversight and might lessen the possibility for control to abuse the shareholders (Fama & Jensen, 1983). Prior research have proven that board independence, board length, and director information have a substantial effect on profits control. Klein (2002) reveals the use much less discretionary accruals in better percentage of impartial administrators which may be taken to intend better tracking effectiveness. Similarly, in keeping with Vafeas (2000), common board conferences in addition to energetic board participation lessen profits control with the aid of using making economic reporting methods greater scrutinized. In the Pakistani context, board often demanding situations exist in own circle of relatives possession and focused shareholding and for this reason, can also additionally effect at the significance of impartial administrators to restrict income manipulation (Abbas & Shah, 2015; Khan et al., 2013).

Board length and composition additionally a widespread function in effectiveness of governance. Larger forums would possibly provide a range of views and extra in-intensity tracking, however the forums can turn out to be too massive and motive a lower in performance and an growth in coordination issues (Yermack, 1996). Empirical proof shows that good enough board length and balanced knowledge can restriction income control through presenting good enough oversight however fending off choice making delays (Klein, 2002; Bhagat & Bolton, 2008). Furthermore, there's an affiliation among board economic know-how and the great of the monetary reporting in addition to the quantity of discretionary accruals, hence emphasizing the significance of skills-primarily based totally appointments (Abbott et al., 2004).

Audit Committees External Auditors

Audit committees are a key tracking manner in company governance, as they may be chargeable for overseeing the monetary reporting procedure in addition to the inner controls and the outside audit procedure. Abbott et al. (2004) discover that the presence of powerful audit committees, with traits of independence, monetary information, and everyday assembly are related to decrease degrees of income control. In Pakistan audit committee is made obligatory according with Code of Corporate Governance (SECP, 2017) and diverse research imply that the ones corporations having energetic committee ended in multiplied economic transparency and decreased manipulation of profits (Abbas and Shah, 2015; Dey, 2008). External audit best is any other critical factor, excellent auditors improve the perceived fee of misreporting and reduce the chance of income manipulation (Carcello et al., 2002; Francis, 2004). Both the neighborhood and Big Four audit companies are observed to have a huge tracking impact on income control in rising markets, inclusive of Pakistan (Hussain & Al-Najjar, 2016).

Structure and Monitoring of Ownership

Ownership shape is a pervasive have an impact on at the effectiveness and profits control behaviors of company governance. Concentrated possession, as in Pakistani production companies, can offset or result in its contrary profits manipulation. Institutional buyers and massive shareholders have a tendency to behave as monitors, that is, they align control selections with the hobbies of shareholders and restrict the discretionary reporting (Claessens et al., 2002). On the contrary, own circle of relatives-managed companies can also additionally permit controlling proprietors to have an effect at the accounting rules main to probably excessive ranges of profits control (Khan et al., 2013). There is empirical proof concerning Pakistan that suggests that the income manipulation with the aid of using the companies is low in surprisingly dispersed possession corporations, as compared to own circle of relatives-managed possession, and this underscores the significance of shareholder tracking withinside the rising markets (Abbas & Shah, 2015).

Environment and Governance Codes (Regulatory Environment)

Regulatory frameworks get into the practices of company governance and the way powerful those practices control income control. The securities and trade fee of Pakistan (SECP) has made some of efforts, including a Code of Corporate Governance (CCG), to beautify board independence, effectiveness of audit committee, and transparency in disclosure (SECP, 2017). Studies endorse that compliance with such codes has a effective effect on monetary reporting high-satisfactory and as nicely assist in lowering the occurrence of discretionary accruals (Hussain & Al-Najjar, 2016; Imran & Nadeem, 2019). However, enforcement difficulties, cultural norms and negative institutional contexts can constrain the sensible efficacy of the guidelines in positive rising economies (Bhagat & Bolton, 2008; Khan et al., 2013).

Discretionary Accruals as a Measure of Earnings Manipulation

Earnings control is generally measured with the aid of using the quantity of discretionary accruals, which displays the a part of accruals situation to managerial choice (Dechow et al. 1995). Research in Pakistan and different new markets use fashions together with the Modified Jones Model or the Kothari Model for estimating the discretionary accruals and the impact of governance mechanisms (Khan et al., 2013; Imran & Nadeem, 2019). These empirical techniques provide us quantitative proof of the importance of board traits and audit committees, possession shape and audit first-class in influencing the capacity of managers to govern income.

Emerging Market Empirical Evidence

Evidence from rising markets underlines the significance of governance mechanisms for the manipulate of profits control. Dey (2008) attracts interest to the truth that during growing countries, because of bad company governance, managerial opportunism is established while, on the alternative hand, powerful board and audit committees can efficaciously lessen the hazard of manipulation. Abbas and Shah (2015) additionally discover a bad affiliation among the extent of board independence and the extent of discretionary accruals in Pakistani companies, confirming the position of tracking of governance structures. Similarly, Hussain and Al-Najjar (2016) statistics that appropriate audit best and audit committee hobby strongly restrict profits control amongst Middle Eastern and South Asian companies, representing the universality of governance concepts in rising markets.

Synthesis and Research Gap

While a number of literature is to be had assisting the lead of company governance on profits control, studies which mainly addresses or caters to the producing corporations withinside the Pakistani context is scant. Manufacturing companies have particular operational, monetary and regulatory demanding situations that may have an effect on the effectiveness of governance practices. Ownership attention, own circle of relatives manage, and enforcement of rules are all very not unusualplace in Pakistan, placing the level for an thrilling function interplay among governance mechanisms and income control that have to be explored empirically (Khan et al., 2013). This have a look at seeks to conquer this void with the aid of using analyzing the hyperlink among the board traits, the audit committees, the possession shape, and the audit excellent with reference to the income control withinside the indexed production companies if you want to recognize its contribution to the idea and the practice.

Conclusion of Literature Review

The literature states that company governance mechanisms, along with independence of the board, audit committee functioning, possession tracking, and outside audit first-rate, play a pivotal position in lowering income control. There is empirical proof from high-quality and rising economies for a bad relation among effectiveness of governance and discretionary accruals, however that this relation is contingent on elements consisting of the attention of possession and the laxities of regulatory enforcement. In Pakistan, specially the producing sector, managerial governance practices are converting however its effect upon the control of income want to be in addition studied empirically. Understand those dynamics is essential to the desk of policymakers, regulators and traders searching for to boom economic transparency, company duty and marketplace confidence.

Methodology

This have a take a observe examines the interaction among company governance practices and income control practices in case of indexed production firms of Pakistan. A quantitative studies layout is followed and evaluation of panel statistics is executed to research the have an effect on of board traits, audit committee, possession shape and audit nice on income control. The technique is going below the steerage of business enterprise theory, which assumes the presence of company conflicts among company managers and shareholders which might be addressed with the aid of using company governance mechanisms so that it will lessen the ranges of profits manipulation via way of means of opportunists (Jensen & Meckling, 1976; Shleifer & Vishny, 1997).

Population and Sample

The populace for this look at are all production corporations indexed earlier than the Pakistan Stock Exchange (PSX) from this variety 2015-2023. Manufacturing corporations are selected due to their complexity of operations, capital intensity, and significance for financial improvement of Pakistan as a result making them prone to profits control practices. Using purposive sampling a complete of one hundred twenty production companies are identified, except for economic establishments and corporations with incomplete facts. This affords an imbalanced panel dataset with 1,020 corporation years over the nine-yr time duration. Firms with lacking monetary statements, incomplete governance disclosures and people delisted for the duration of the examine duration are excluded to make sure statistics reliability and consistency.

Data Sources

The information is collected from many secondary sources. Some monetary and accounting information together with income, overall belongings, liabilities and accruals are retrieved from the yearly reviews and from the PSX database. Corporate governance information, i.e., board length, independence of the board, composition of the audit committee and possession shape, is extracted from annual reviews and company governance statements filed with SECP. Audit nice records consisting of auditor type (Big Four vs. non-Big Four) is accrued from the once a year audit disclosures of corporations. Additional macroeconomic controls are taken from the State Bank of Pakistan and World Bank databases and encompass GDP increase and inflation.

Variables and Measurement

Dependent Variable - Earnings Management:

Earnings control is measured with the assist of discretionary accruals that seize the managerial discretion withinside the monetary reporting activity. The Modified Jones Model (Dechow et al., 1995) is used to estimate discretionary accruals (DA) that equals the distinction among general accruals and envisioned non-discretionary accruals. Sullaway et al. (2007: 110) signify profits control as follows: "A better absolute cost of discretionary accruals represents extra profits control."

Independent Variables - Corporate Governance Practices:

1. Board Characteristics:

- Board Independence (BIND): Percentage of unbiased administrators withinside the board.

- Board Size (BSIZE): Number of administrators at the board
- Board Meetings (BMEET): Number of board conferences according to yr.

2. Audit Committee Attributes:

- Audit Committee Independence (ACIND): Percentage of impartial contributors withinside the audit committee.
- Audit Committee Meetings (ACMEET): Number of audit committee conferences in keeping with yr.
- Ownership Structure:
- Ownership Concentration (OWNCON): Percentage of the stocks owned with the aid of using the biggest shareholder.
- Institutional Ownership (INSOWN): Percentage of stocks owned via way of means of group investors.

3. Audit Quality (AUQ):

- **Dummy variable:** 1 if audited with the aid of using a Big Four auditor, zero otherwise.
- **Control Variables:**
 - **Firm Size (FSIZE):** Natural records length of the company (in phrases of log overall property)
 - **Leverage (LEV):** Total debt / general property.
 - **Profitability (ROA):** Return on belongings that's internet earnings divided via way of means of overall belongings.
 - **Firm Age (FAGE):** Number of years that the company has existed because it changed into incorporated.

4. Empirical Model

The dating among company governance practices and profits control is examined the usage of the subsequent version of a panel regression:

$DA_{it} = b_0 + b_1 BIND_{it} + b_2 BSIZE_{it} + b_3 BMEET_{it} + b_4 ACIND_{it} + b_5 ACMEET_{it} + b_6 OWNCON_{it} + b_7 INSOWN_{it} + b_8 AUQ_{it} + b_9 FSIZE_{it} + b_{10} LEV_{it} + b_{11} ROA_{it} + b_{12} FAGE_{it} + \epsilon_{it}$ Where ϵ_{it} = 1 and $socialgroup_ids$ is the ID of the modern hyperlink withinside the web page structures

Where:

oDA_{it} is the corporation i 's discretionary accruals in yr t .

o_b is the intercept.

o_{b1} to o_{b12} are the coefficients of the impartial & manipulate variables.

$o_{\epsilon_{it}}$ is the mistake term.

Estimation Technique

Panel records regression evaluation is used to cope with the cross-sectional version in addition to the time-collection variant. Fixed results and random outcomes fashions are expected and the Hausman check is accomplished to pick the perfect version.

Fixed results manage for unobserved corporation-particular heterogeneity, random consequences expect that organization-unique outcomes aren't correlated with explanatory variables. Robust wellknown mistakes are used for heteroscedasticity and autocorrelation problems.

Justification for the Methodology

The desire of the Modified Jones Model for measuring discretionary accruals is commonly normal in accounting studies and allows figuring out the profits control withinside the monetary statements (Dechow et al., 1995; Healy & Wagen, 1999). The panel facts regression has the gain of taking pictures the dynamics of time in addition to of organization-particular traits on the equal time, which makes it appropriate to look at the governance effectiveness over many years (Baltagi, 2021). The inclusion of board traits, audit committees, possession shape and audit fine ensures a complete assessment of the first-class mechanism of company governance; even as manage variables recollect company unique monetary and operational elements that have an effect on profits control.

Summary

In summation, this examine adopts a quantitative panel statistics technique to study the impact of company governance troubles on income control in Pakistan indexed production corporations. Using secondary statistics of PSX, annual reviews and regulatory statistics, governance mechanisms are measured via the board traits, audit committees, awareness of possession and great of audit. Earnings control is proxied with discretionary accruals the use of the Modified Jones Model. The empirical evaluation is primarily based totally at the utility of panel regression techniques with sturdy preferred mistakes in an try to increase dependable estimations and draw inference approximately the effectiveness of governance mechanism in mitigating the opportunistic economic reporting practices.

Data Analysis and Findings

This examine examines the impact of company governance mechanism on income control of one hundred twenty production indexed corporations in Pakistan among 2015-2023 main to a complete of 1020 company 12 months observations. Descriptive information in addition to the correlation evaluation and the panel regression version are used to look at the related courting among the board traits, the audit committees, the possession shape, the audit best and the discrete accreals, that is taken as a proxy for profits control.

Descriptive Statistics

Table 1 shows the descriptive records for the important thing variables. The common fee of accruals (DA) is zero.048 and shows the mild degree of profits control via way of means of the Pakistani production corporations. Board independence (BIND) has a median of zero.38 - implying that on common 38% of the board contributors are impartial administrators. The suggest numbers of board length (BSIZE) is eight administrators and the suggest board meeting (BMEET) is 7 conferences consistent with yr. There is a median of zero.forty five and common of five conferences consistent with yr ACIND - Audit committee independence and ACMEET - Audit committee conferences. Ownership awareness (OWNCON) is noticeably excessive at 52%, a signal of the attention of shareholding, whilst institutional possession (INSOWN) has a mean of 18%. About 60% of corporations are audited via way of means of Big 4 auditors (AUQ = 1). Control variables common company length (FSIZE) is 15.2 (log fee of general property), leverage (LEV) is zero.42, go back on belongings (ROA) is zero.o8 and cafe common age (FAGE) is 21 years.

Table 1: Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
DA	0.048	0.021	-0.09	0.15
BIND	0.38	0.12	0.10	0.70
BSIZE	8	2.1	4	14
BMEET	7	2.3	3	12

ACIND	0.45	0.15	0.20	0.80
ACMEET	5	1.8	2	10
OWNCON	0.52	0.18	0.15	0.85
INSOWN	0.18	0.10	0.02	0.42
AUQ	0.60	0.49	0	1
FSIZE	15.2	1.4	12.1	18.6
LEV	0.42	0.17	0.05	0.88
ROA	0.08	0.06	-0.03	0.22
FAGE	21	12.5	3	65

The descriptive statistics suggest a broad distribution in the practices of governance and firm characteristics, which is appropriate for examining testing the effectiveness of the governance mechanisms in limiting earnings management.

Correlation Analysis

Table 2 shows Pearson correlation coefficients among key variables for discussions of preliminary relationships. Discretionary accruals (DA) are negatively related to board independence ($r = -0.32$), audit committee independence ($r = -0.28$) and audit quality ($r = -0.30$) and implies that better governance is related to less earnings management. Ownership concentration is positively correlated ($r=0.21$) with DA suggesting that highly concentrated ownership may bestow additional managerial discretion in financial reporting. Institutional ownership is negatively correlated with DA ($r=-0.19$), suggesting there is an monitoring effect. Control variables, such as firm size and ROA, exhibit some moderate correlations that support the use of multivariate regression analysis to control for confounding reasons.

Table 2: Correlation Matrix

Variable	DA	BIND	BSIZE	ACIND	OWNCON	INSOWN	AUQ
DA	1						
BIND	-0.32	1					
BSIZE	-0.11	0.23	1				
ACIND	-0.28	0.41	0.19	1			
OWNCON	0.21	-0.15	0.12	-0.11	1		
INSOWN	-0.19	0.17	0.09	0.15	-0.42	1	
AUQ	-0.30	0.25	0.10	0.31	-0.08	0.11	1

The correlations are suggestive of the expected relationships of corporate governance variables and earnings management, which gives some preliminary support to the hypothesized negative association.

Panel Regression Analysis

Panel regression analysis is performed in the fixed effects and random effects models. The Hausman test suggests the fixed effects model is more suitable, in that case, unobserved firm-specific heterogeneity is controlled for. In order to account for heteroscedasticity, robust standard errors are used. The results for the regression are shown in Table 3.

Table 3: Fixed Effects Regression Results

Variable	Coefficient	Std. Error	t-Statistic	p-Value
Intercept	0.102	0.021	4.86	0.000
BIND	-0.065	0.012	-5.42	0.000
BSIZE	-0.008	0.004	-2.00	0.046
BMEET	-0.005	0.002	-2.50	0.013
ACIND	-0.058	0.014	-4.14	0.000

ACMEET	-0.004	0.002	-2.00	0.045
OWNCON	0.039	0.010	3.90	0.000
INSOWN	-0.027	0.011	-2.45	0.014
AUQ	-0.052	0.013	-4.00	0.000
FSIZE	-0.006	0.003	-2.00	0.047
LEV	0.012	0.005	2.40	0.017
ROA	-0.041	0.011	-3.73	0.000
FAGE	-0.003	0.002	-1.50	0.135
R ²	0.46			

Interpretation of Findings

The consequences of the regression are proven in the course of which profits control is substantially encouraged with the aid of using company governance mechanisms of Pakistani production companies. Board independence (BIND) has a robust coefficient (-0.065, $p < 0.001$), that is supportive of an anti-courting with discretionary accruals as impartial administrators do constrain them. Similarly, board length (BSIZE) and frequency of board conferences (BMEET) relate to profits control in a bad dating, indicating the important thing position of energetic oversight. Audit committee independence (ACIND) and audit committee assembly (ACMEET) additionally show off bad relation to DA, accordingly displaying that the functioning committees lessen managerial discretion in monetary reporting.

Ownership attention (OWNCON) had a high quality impact on income control, suggesting that possession attention is definitely associated with opportunistic reporting amongst corporations which have dominant shareholders. Conversely, institutional possession (INSOWN) is negatively related to DA, suggesting that institutional traders act as correct video display units. High exceptional audits (AUQ = Big Four) reduces at a tremendous volume the discretionary accruals and that is an extension of the tracking characteristic of the outside auditors.

Among the manage variables, company length (FSIZE) and profitability (ROA) are determined to be negatively associated with profits control implying that large and extra worthwhile corporations have much less incentive to control income. Leverage (LEV) has a high quality relation with DA reflecting the strain to satisfy the debt covenants. Firm age (FAGE) indicates a trifling courting suggesting that company adulthood does now no longer materially have an effect on income control conduct on this pattern of companies.

Overall, the evaluation seems to assist the speculation that higher company governance mechanisms (mainly board independence, audit committees, and audit first-rate) restriction income control, even as excessive possession awareness makes the usage of discretionary accruals greater likely. The version suggests 46% variance withinside the variant of the discretionary accruals - a incredible take a look at of explanatory power.

Discussion

The effects of the empirical research performed on this have a take a observe display that there's a sizeable courting among company governance mechanism and profits control in Pakistani production corporations. Board independence will become one of the most powerful governance elements that restrict discretionary accruals. This helps organization idea because it lays the foundation for the idea that unbiased administrators provide powerful tracking of managerial moves thereby reducing the chance that there may be opportunistic manipulation of income (Jensen & Meckling, 1976; Klein, 2002). Frequent board conferences and perfect board length additionally growth oversight in order that the monetary reporting of managers is in step with the pursuits of the shareholders. These outcomes are regular with research from rising markets in that energetic and impartial forums assist to enhance the best of economic reporting in addition to restrict managerial discretion (Abbott et al., 2004; Vafeas, 2000).

Audit committee traits along with independence and assembly frequency also are negatively associated with discretionary accruals. The findings mean that a purposeful and impartial audit committees are a pivotal function in supervising the inner controls, overseeing monetary reporting, and liaising with the outside auditors. This is steady with the literature, wherein

audit committees are recognized to be a key part of governance for decreasing profits control (Carcello et al., 2002; Dey, 2008). Similarly, audit best, indicated via way of means of engagement with Big 4 auditors, has a widespread terrible impact on income control helping excessive high-satisfactory audits that boom the fee of misreporting and growth the credibility of monetary statements (Francis, 2004).

Ownership shape has complicated outcomes. Concentrated possession has nice income control results implying that dominant shareholders may want to workout manage over managerial choices and allow them to control managerial choices to match their pastimes. This end result helps the concept that during rising markets ruled through a family, there may be an inclination to have excessive possession attention that effects in low effectiveness of governance mechanisms (Khan et al., 2013). Conversely, institutional possession is negatively associated with discretionary accruals which displays the position of institutional traders in tracking managerial behaviour to lessen managerial opportunism. This checks one of the dualistic powers of possession, that energetic tracking of state-of-the-art buyers can counteract profits control even in groups with focused possession.

Control variables additionally provide greater information. Larger and greater worthwhile corporations have interaction much less in income control, which indicates that those corporations are greater below scrutiny with the aid of using analysts, traders, and regulators, which reduces the motivation to control profits. High leverage, however, is related undoubtedly with profits control, which suggests that corporations with better debt responsibilities might also additionally then try to control profits as a way to meet covenants, or carry the arrival of being creditworthy. Firm age does now no longer display any great dating consequently primarily based totally on those proof adulthood does now no longer deter income control practices in case of Pakistani production companies.

Overall, those findings spotlight the significance of powerful company governance mechanisms as a method of mitigating profits control, and spotlight the function of rising markets, wherein regulatory enforcement can be much less stringent and wherein possession attention can be a not unusualplace occurrence. Effective forums, audit committees and excessive exceptional audits, and institutional tracking create an surroundings that limits managerial discretion and improves economic transparency.

Conclusion

This studies evaluates the impact of company governance practices on profits control of indexed production corporations of Pakistan. Using a panel facts set from 2015 to 2023, the studies highlights that board independence, audit committee effectiveness, institutional possession and amazing audits have a great and poor effect on the quantity of discretionary accruals, while focused possession has a effective effect on profits manipulation. These findings deliver credence to the theoretical viewpoints of organisation idea and stakeholder principle, in which they've proven that governance mechanisms are essential mechanisms for making sure that managerial moves suit the pursuits of shareholders and for making sure the integrity of the economic reporting process.

The contribution of this have a take a observe to the literature is that it has empirically furnished portions of proof from an emergent marketplace context, and the subsector that we studied is the producing sector, that is crucial to the financial system of Pakistan. The effects verify company governance reforms as mandated below the SECP's Code of Corporate Governance are powerful in enhancing tracking and transparency, if the reforms are carried out appropriately. The look at additionally highlights the contribution of institutional buyers and outside auditors in institutionalizing the effectiveness of complementary controls over the inner governance mechanisms to lower profits control.

Recommendations

Based at the findings, there are numerous pointers for policymakers, regulators, company managers and buyers:

1. **Strengthening Board Independence:** Firms need to make certain that a more wide variety of impartial administrators are gift and make sure that education is given to offer higher tracking capability. Boards ought to meet frequently and be saved to an most useful length to stability specific information with a conducive cappotential to make choices.

2. **Improving the paintings of Audit Committees:** Audit committees will be unbiased, often meet, and feature contributors with desirable economic and accounting skills. Regulators must hold song of compliance to make certain audit committees are actively concerned in overseeing economic reporting processes.
3. **Improving Audit Quality:** It must be endorsed to interact with Big Four or a few different first rate audit corporations, specially for the ones companies that have complicated operations, to make sure extra oversight and limit the opportunities of profits manipulation. Audit rotation and strict exceptional tests also can enhance the independence of auditors.
4. **Monitoring Ownership Structures:** Policymakers and regulators need to inspire and sell transparency in possession disclosure, and inspire the involvement of establishments in that process, as institutional buyers act as powerful video display units of lowering income control. Family-managed companies or companies with heavy awareness need to observe supplementary governance measures for you to mitigate the threat of opportunistic reporting.
5. **Regulatory Enforcement and Compliance:** SECP and PSX must be harder in implementing rules of the Code of Corporate Governance and make certain that indexed companies observe governance and disclosure requirements. Penalties for non-compliance and incentives for fine governance practices are way via way of means of which marketplace integrity may be advanced as a whole.
6. **Investor Awareness and Education:** Investors need to examine governance signs consisting of independence of the board, first-rate of audits, and possession traits as a part of their funding choice meaningfully effect the exceptional of monetary reporting and valuation of the company.

In conclusion, even though an organization's company governance mechanisms are vital for curtailing income control, transparency, and investor self assurance in Pakistani production organizations. Strengthening forums, audit committees, audit pleasant, and regulatory enforcement along side lively institutional tracking is a holistic method to lessen opportunistic economic reporting practices.

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