

Impact Of The Board Characteristics On Investmееfficiency: Mediating Role Offinancial Reporting Quality

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Abstract

The current study aimed to evaluate the function of financial reporting quality (FRQ) as a moderator of the effects of board characteristics on investment efficiency. This study considered board independence, board meetings, and board size as the determinants of board characteristics. Fifty-six non-financial firms on the Pakistan stock exchange (PSX) were taken as the sample from 2011 to 2021. The generalized method of moment (GMM) was utilized to handle the endogeneity problems. According to this method, board independence, board size, and board¹ meetings statistically significantly impacted investment efficiency. Similarly, the results of the second section suggest that a board characteristic has a statistically significant positive impact on financial reporting quality. According to the mediation analysis's findings, FRQ is not found to be a mediator between board size and investment efficiency, but it is a significant mediator between board independence and investment efficiency and a partial mediator between board meetings and investment efficiency. The findings may be valuable to the Pakistani business community and investors, practitioners, administrators, and scholars who want to learn more about the quality of financial reporting and board characteristics procedures.

Keywords: Financial reporting, Investment efficiency, board size, board independence, board meeting, GMM.

Introduction

After the 1997-1998 Asian financial crisis, which affected several Asian nations, CG, including Pakistan, became more critical (Norwani, 2011). The financial crisis exposed poor capital structure, uncontrollable leveraging, lack of accountability, and transparency. Stakeholders would benefit significantly from solid and effective corporate governance, such as clear financial statements and higher FRQ (Choi & Suh, 2019; Lazonick & Shin, 2020). Thus, more innovative investment selections will be made, increasing the value of the portfolio in the long run (Chen et al., 2011) because efficient governance reduces information asymmetry and lowers the cost of monitoring and managing management. Investment is the primary driver of every company's development. Acquisitions lead to new employment, which in turn boosts the

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stock market. As a result, company investment choices significantly impact the economy as a whole. As a result, firms must pay attention not just to the amount of money invested, but also to the efficiency of that money. Investment efficiency in terms of efficiency is prioritized above the amount invested in order to set priorities (Siregar, & Nuryanah, 2019).

Much research has shown that corporate governance and board characteristics impact both investor-accessible information preferences and investment choices (Chemmanur et al., 2009). Board characteristics include board independence and meetings, which can influence investment efficiency. In addition, CEOs' performance improves when they have a more significant stake in the firm (Dalton et al., 1999). The evidence shows that a board will oversee a firm's operations and financial details meticulously. This, in turn, will improve financial reporting quality, financial performance, firm value, and the company's investment efficiency (Elsila, 2013). The company's management is responsible for preparing high-quality financial and accounting information. As a result, Financial Reporting Quality (FRQ) is recognized as the most essential part of a company's financial system. It is observed that numerous things influence the company's FRQ. Following the financial scandals, investors have questioned the stock market, policymakers, and professional accountants and auditors (Houcine et al., 2021). These high-profile financial scandals sparked a discussion about the efficacy of CG as a tool for improving financial reporting and protecting investors (Hashed, Almaqtari, 2021).

Research in Pakistan on the relationship between board characteristics and investment efficiency is scarce, making this study particularly novel and important (Humera, 2018). Several studies have been done to investigate corporate governance reforms and to determine the factors that influence corporate governance disclosure and compliance with corporate governance standards (Ashraf & Ghani, 2015; Hermes, Hooghiemstra, Van Der Laan, Postma, & Van Witteloostuijn, 2017). The available empirical data shows that poor financial reporting quality may also raise compliance costs and cause regulatory responsibilities to be ambiguous and complicated, limiting the government's ability to accomplish its goals (OECD, 2008). Thus, there is a need to investigate the role of financial reporting quality as a mediator between the impacts of board characteristics on investment efficiency in Pakistan's non-financial firms. The current study considered board independence, board meetings, and board size as the determinants of board characteristics.

Research Objectives

- To investigate the impact of board characteristics on investment efficiency.
- To investigate the impact of board characteristics on financial reporting quality.
- To examine the impact of financial reporting quality on investment efficiency.
- To investigate the mediating effect of financial reporting quality on the impact of board characteristics on investment efficiency.

Literature Review

Board characteristics and Investment efficiency

One of the most essential characteristics of an independent non-executive director is that they do not hold any executive positions and have no links to the organization, either directly or indirectly. An increase in non-executive directors may impact how well management is monitored and how reliable financial reporting is (Niu, 2006). According to Beasley (1996), independent board members are responsible for establishing and maintaining effective mechanisms for monitoring the company's operations. As a result, an increase in the percentage of non-executive directors might motivate the board to exercise more control over its corporate governance processes (Khanchel, 2007).

In order to increase investment efficiency, it is critical to figure out how board structures and reforms can keep tabs on potential agency issues. According to Lu and Wang (2015), board independence hurts capital investments and has a positive impact on R&D investments. According to their findings, board independence is related to lesser deviations from optimum investment levels in businesses that tend toward over or under-investment, but they need to examine how these investment levels serve the interests of the firms themselves.

Acting and representing the interests of shareholders is one of the responsibilities of the board of directors (Phan & Yoshikawa, 2000). Since a more giant board provides a more diverse range of skills, knowledge, competency, and experience for monitoring management effectiveness (Abidin et al., 2009), and the workload can be distributed amongst a more significant number of board members, most previous studies have found a positive relationship between and company performance (Alzoubi, 2012). As shown by Peasnell et al. (2001), the board's size impacts both the quality of the accounting and the degree of investment. According to Gois (2009), the greater the board's size, the better the board's capacity to oversee management is. This may reduce the amount of accounting discretion, resulting in better quality accounting information and reducing the risk of excessive or inadequate investment. Similarly, the value of a company improves when it has a giant board of directors, a high degree of board independence, and no CEO duality (Allam, 2018). (Carter et al., 2003). Low block holder ownership (Maury & Pajuste, 2005), high management ownership (Carter et al., 2003), and high institutional ownership (Carter et al., 2003) all boost firm value (Jafarinejad et al., 2015).

For a board meeting to be effective, it must bring together the company's directors in an organized setting where they can debate and handle current and future problems that are vital to the company's existence (going concern). Every decision made throughout this process is legally binding and may be implemented in the firm. The frequency of board meetings may be determined by the number of meetings senior management conducts each year. Exercises like this one are essential to getting everyone on board with a company's long-term goals (goals).

Board meetings and investment efficiency have long been the subject of heated debate in the literature. This has led to two distinct viewpoints. Some feel that regular board meetings are necessary for board members to properly carry out their responsibilities of strategy formulation and management oversight (Vafeas, 1999).

H1a: There is a significant impact of board independence on investment efficiency.

H1b: There is a significant impact of board meeting on investment efficiency.

H1c: There is a significant impact of board size on investment efficiency.

Board Characteristics and Financial Reporting Quality

Prior research has shown that independent boards benefit the FRQ if the majority of directors are independent (Peasnell et al., 2005). Independent boards are linked to lower levels of earnings management and, hence, a higher FRQ (Al Matari & Mgamal, 2019). A study by Peasnell et al. (2005) explored the influence of outside board members in lowering the prevalence of earnings management in British companies (Al Okaily, Dixon, & Salama, 2019). As a surrogate for earnings management, this research employed anomalous accrual (Chen et al., 2017; Shin et al., 2020). They discovered that the number of outsiders on a board directly correlates to the chance of earnings management occurring. This was explored in research by Turegun (2018), which looked at the impact of board independence on limiting profits management in Turkish companies. The results of the OLS hypothesis testing show that independent non-executive board members significantly decrease earnings management, demonstrating that such members contribute favorably to FRQ. A study by Chalaki et al. (2012)

revealed no correlation between the size of the board and the quality of financial reporting. There was a favorable correlation between board size and the quality of financial reporting, according to Onuarah and Imeme (2016). Adebisi (2017) investigated the degree to which the size of the board of directors of Nigerian banks affected the quality of their financial reporting. From 2005 to 2016, researchers collected data on 15 Nigerian stock exchange-listed deposit money institutions as a sample. Board size positively correlates with discretionary accrual as a proxy for financial reporting quality. H2a: There is a significant impact of board independence on financial reporting quality.

H2b: There is a significant impact of board meeting on financial reporting quality.

H2c: There is a significant impact of board size on financial reporting quality.

H3: There is a significant impact of financial reporting quality on investment efficiency.

Financial reporting quality and investment efficiency

The neo-classical theory states that enterprises invest until their marginal earnings and costs are equal. This notion states that companies should use the finest investment possibilities to improve their reputations (Houcine, Zitouni, & Srairi, 2021). Growth desire and financial stability are the primary considerations in Pakistani companies when considering whether or not to invest. The issue of underinvestment or overinvestment arises because of the agency problem, which causes organizations to depart from their stated investment goals (Almaqtari, & Hashed, 2021). When it under invests, it puts in less money than planned; when it overinvests, it puts in more money than planned. Investments should be made in all initiatives with a positive net present value (Al'Alam, & Firmansyah, 2019).

However, the prior study uncovers evidence that contradicts this notion (Bertrand and Mullainathan, 2003). Negative NPV projects may also occur when the market is unclear and trustworthy and accurate information is hard to come by. One significant factor contributing to the selection of negative NPV projects is agency costs. Over-investment and under-investment may occur if there is a lack of information exchange among the stakeholders, according to the agency theory. Using a paradigm devised by Michael and William (1976), the link between asymmetric knowledge and investment viability was clarified. A conflict of interest exists between stakeholders and managers because of these two factors, which leads to management choosing initiatives that benefit the firm's managers solely and clash with the interests of stakeholders. A neoclassical framework based on market perfection can not exist in real life because of market unpredictability, according to several academic studies. Researchers have also found that managers sometimes invest in projects that are less profitable and more costly, such as inefficient projects that could harm the firms (Gomariz and Ballesta, 2014). (Gomariz and Ballesta, 2014). Potential investors are hesitant to put money into these initiatives because of the ambiguity and uncertainty that surrounds them (Walker, 2013).

H3: There is a significant impact of financial reporting quality on investment efficiency.

Mediating Role of Financial Reporting Quality

The projected process interference is being evaluated as a mediator by examining the quality of financial reporting about board characteristics and investment efficiency. According to a previous study, the quality of financial reporting may be improved by board qualities (Iqbal & Khan, 2020). Sariman, Ali, and Nor (2013) reveal that board features negatively correlate with profit management (Al Okaily, Dixon, & Salama, 2019). Companies with excellent and respected board qualities are less likely to manipulate their financial reports, according to Garca-Meca and Garca-Sánchez's (2018) research. This has also been documented by V. K. Gupta (2020) and his colleagues in their study of financial reporting. For example, Bunderson

and Sutcliffe (2002) and (Cannella Jr et al., 2008) discovered a positive association between financial reporting quality and board qualities and that the same relationship exists between the two. Results show that regular financial reporting reduces the cost of debt, enhancing a business' debt financing options (Sariman et al., 2013). The financial reporting quality between board characteristics and investment efficiency has been proven to be a superior mediator in light of the prior study

.H4a: Board size significantly mediates the impact of board characteristics on investment efficiency.

H4b: Board meeting significantly mediates the impact of board characteristics on investment efficiency.

H4c: Board independence significantly mediates the impact of board characteristics on investment efficiency.

Methodology

Research Design, Research Population and Sample and Data Collection.

Quantitative and descriptive research design was chosen to achieve the objectives of the current study. Non-financial firms listed on Pakistan stock exchange (PXS) were taken as the population in the current study. A total of 56 non-financial firms were chosen as a sample. Data was collected from the financial statements, annual report of the firms form the year 2011 to 2021.

Variables Measurement

The below proxies were used to measure, independent, dependent and mediating variables.

Table 1:

S.n	Variable	Type	Proxy
1	Investment efficiency(IEN)	Dependent	The proxy for investment used is the Sales Growth The model is described below: $Investment_{i,t+1} = \beta_0 + \beta_1 * Sales\ Growth_{i,t} + \epsilon_{i,t}$.
2	Board independence(BIP)	Independent	Proportion of the independent NON Executive director.
3	Board size (BZ)	Independent	A number of members on the board were used to measure board size.
4	Board meeting. (BDM)	Independent	The numbers of board directors meeting during the financial year t for the firm i.
5	FRQ	Mediating	Accrual quality is the key of FRQ. Dechow et al. (2010) developed the following criteria for measuring accrual quality: $\Delta WCAP_{i,t} / T ASSETS_{i,t-1} = \beta_0 + \beta_1 CFO_{i,t-1} / T ASSETS_{i,t-1} + \beta_2 CFO_{i,t} / T ASSETS_{i,t-1} + \beta_3 CFO_{i,t+1} / T ASSETS_{i,t-1} + \epsilon_{i,t}$.

Descriptive analysis

Below are results of descriptive analysis

Table 2:

S.no	Variables	Type	Mean	SD
1	Board size(BZ)	Independent	5.409888	2.115536
2	Board meeting(BDM)	Independent	8.173844	1.893343
3	Board independence(BIP)	Independent	.5862355	.1480154
4	Financial Reporting Quality(FRQ)	Mediating	.002627	1.767569
5	Investment efficiency(IEN)	Dependent	.0281096	.9782571

The above table is showing that mean value of Board independence is .5862355 having a standard deviation of .1480154. Similarly, the mean value of Board Size is 5.409888 having a standard deviation of 2.115536. Also, the mean value of the Board Meeting is 8.173844 having a standard deviation of 1.893343. While Mean value of investment efficiency is .0281096 having a standard deviation of .9782571; lastly, mean value of financial reporting quality is .002627 having a standard deviation of 1.767569.

Correlation analysis

Below table shows results of correlation analysis

Table 3:

Variables	IE	BS	BDM	BIP	FRQ
Investment efficiency	1				
Board size(MZ)	0.1381	1			
Board meeting(BDM)	-0.1683		1		
Board independence(BIP)	0.1381	0.331		1	
Financial Reporting Quality	-0.0087	0.3431	0.33	0.1231	1

The above table is showing that board size has a weak positive (0.138), board meeting has a weak negative (-0.168), board independence has a weak positive (0.138) and FRQ has a weak negative (-0.008) relationship with investment efficiency.

Multicollinearity

Variance inflation factor method was used to determine the Multicollinearity in the independent variable.

Table 4:

Independent variables	VIF	1/VIF
Board Size(BZ)	1.133	.883
Board independence(BIP)	1.068	.936
Board meeting(BDM)	1.179	.848

As shown, the value of VIF was higher than standard value of 10, showing that no Multicollinearity exists between the explanatory variables.

Generalized Method of Moments (GMM)

To mitigate the impact of endogeneity, GMM was used in this research. Analysis of the causal relationship between BIP, BZ, BDM, and FRQ was performed. The data tables below show the outcomes of such direct effects.

Table 5:

Variable/N	IEN		FRQ		IEN	
	t-value	P-value	t-value	P-value	t-value	P-value
Investment efficiency (IEN)	266.01	0.000**			2007.3	0.000
Financial Reporting Quality (FRQ)				0.000***	17.50	0.000
Board Independence	9.19	0.000	0.000	-2.440		
Board Meeting	-5.20	0.000	0.000	-.0149		
Board Size	-14.87	0.000	0.000	.9067		
Total Obs	713		713		713	
No. of Groups	65		65		65	
No. Instruments	59		59		59	
Hansen test (P_value)	0.59		0.43		0.521	
Arl-Bond AR(2) (P_value)	0.71		0.32		0.69	

The value of the regression coefficient of board independence is .2332 (t=9.19, p=0.000), meaning that board independence significantly contributes more toward the dependent variable investment efficiency. Similarly, the regression coefficient values for Board Meeting and Board Size are (t=-5.20, p=0.000), (t=-14.87, p=0.000) respectively. Thus, these significant values are showing that board independence board meeting and board size have a significant impact on investment efficiency. Thus H1a, H1b, and H1c of the study are accepted. The value of regression coefficient of board independent is (t=-87.70, p=0.000), meaning that board independence significantly contributes more towards the dependent variable FRQ. Similarly, the regression coefficient values for Board Meeting and Board Size are (t=18.75, p=0.000) and (t=-27.07, p=0.000) showing that Board Meeting and Board Size have a significant impact on financial reporting quality. Thus, H2a, H2b, and H2c of the study are accepted. We cannot reject the null hypothesis since all of the variables are statistically significant, as evidenced by the second-order serial correlation AR(2) test and the Hansen test, both of which have p-values (0.71 and 0.69) larger than 10% . It demonstrates that there is no association between the error term and the instrument, indicating that the instrument is legitimate. (Roodman, 2009).

Mediation Analysis

Mediating role of Board Independent

The Sobel test findings regarding FRQ's mediating function between BIP and IEV are shown in table below. Table displays the results of the Sobel test for the mediating effect of FRQ between BIP and IEV.

Table 6

Model/Dependent Variable		IEV		
Estimates	Delta	Sobel	Monte Carlo *	
Indirect effect	0.027	0.027	0.026	
Std. Err.	0.008	0.008	0.009	
z-value	3.237	3.237	3.038	
p-value	0.001	0.001	0.002	
Conf. Interval	0.011 , 0.043	0.011 , 0.043	0.012 , 0.046	
(Indirect effect/Total effect)		(0.027 / 0.044) = 0.604		
(Indirect effect/Direct effect)		(0.027 / 0.018) = 1.524		
Baron and Kenny Approach		mediation is complete		
Zhao, Lynch, and Chen's Approach		full mediation		

The impact of board independence, mediated through financial reporting quality is 0.604 i.e., 60.4 percent, and the indirect impact through the mediator i.e., financial reporting quality is 1.52 times larger than the direct effect, meaning that FRQ is a significant mediator between board independence and investment efficiency.

Mediating role of board meeting

Below table presents the results of the Sobel test for the mediating role of financial reporting quality between board meeting and investment efficiency.

Table 7:

Model/Dependent Variable		IEV		
Estimates	Delta	Sobel	Monte Carlo *	
Indirect effect	-0.022	-0.022	-0.023	
Std. Err.		0.006	0.006	
z-value		-3.703	-3.707	
p-value		0.000	0.000	
0.000				
Conf. Interval		-0.034 , -0.011	-0.034 , -0.011	
(Indirect effect/Total effect)		(0.022 / 0.087) = 0.258		

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(Indirect effect/Direct effect)	$(0.022 / 0.065) = 0.347$
Baron and Kenny Approach	mediation is partial
Zhao, Lynch, and Chen's Approach	partial mediation

The above table is showing statistically significant value ($p=0.000$) for Sobel test of the mediator. The table is furthermore showing the size of the direct and indirect impact of board size on investment efficiency. The impact of board meeting, mediated through financial reporting quality is 0.258 i.e., 25.8 percent, however the indirect impact through the mediator i.e., financial reporting quality is 0.34times larger than the direct effect which shows that FRQ is a partially significant mediator between board meeting and investment efficiency.

Mediating role of board size

Table 8:

Model/Dependent Variable	IEV		
	Delta	Sobel	
Estimates Monte Carlo *			
Indirect effect	0.004	0.004	
0.003			
Std. Err.	0.004	0.004	
0.004			
z-value	0.914	0.914	
0.810			
p-value	0.361	0.361	
0.418			
Conf. Interval	-0.004 , 0.011	-0.004 , 0.011	-0.005 , 0.012
(Indirect effect/Total effect)	$(0.004 / 0.064) = 0.057$		
(Indirect effect/Direct effect)	$(0.004 / 0.060) = 0.060$		
Baron and Kenny Approach	no mediation		
Zhao, Lynch, and Chen's Approach	direct-only non mediation		

The above table is showing statistically insignificant value ($p=0.361$) for Sobel test of the mediator. The table is furthermore showing the size of the direct and indirect impact of board size on investment efficiency. The impact of board size, mediated through financial reporting quality is 0.057i.e., 5.7 percent, while the indirect impact through the mediator i.e., FRQ is 0.060 times larger than the direct effect, however the insignificant value ($p=0.361$) shows that financial reporting quality is not a significant mediator between board size and investment efficiency.

Conclusion and Recommendations

The study investigated the role of financial reporting quality as a mediator between the impacts of board characteristics on investment efficiency in Pakistan's non-financial firms. Board independence, board size, and board meetings were taken as the determinants of corporate governance. A quantitative research type and descriptive research design were chosen in the current study. The population chosen for the current study was the non-financial firms listed on the PSX. The results indicated that board independence, board size, and board meetings significantly impact investment efficiency. At the same time, financial reporting quality mediates the impact of board characteristics on investment efficiency. The above results are also consistent with the previous studies. Some researchers, including Góis (2009), have shown a correlation between board size and investment level. Large boards need the inclusion of a diverse range of perspectives and viewpoints. As a result, every decision must be scrutinized by all of these directors before it is made. The poor investment choices (either over or under) made by management will also be prevented, and resources will be diverted to attractive investment possibilities.

Investors will benefit significantly from the findings of this investigation. Investing in companies that make efficient investment choices appeals to rational investors since doing so increases their own net worth. Accordingly, the conclusions of this article might be used by investors to gauge companies' investment efficiency. The investment choices of Pakistani enterprises may be explained by the investment efficiency measuring methods utilized in the research. Corporate decision-makers may use this experimental scheme to develop educated judgments and policies for the top management team to improve reporting standards that can help improve investment efficiency.

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