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The Interplay of Ownership, Governance, and Capital structures with Firm Performance: Insights from the Manufacturing Sector in Pakistan

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ABSTRACT

Purpose: This study investigates the effect of ownership control size and corporate governance mechanisms on the performance of the Pakistani manufacturing sector.

Design and Methodology: The study uses input and output characteristics as predictors to evaluate efficiency performance through the use of Data Envelopment Analysis (DEA). It uses Ordinary Least Squares regressions to look at the impact of ownership control size, corporate governance characteristics on efficiency performance using a panel dataset that spans from 2001 to 2022.

Findings: The results imply that the differences in cash flow, seat control, and voting rights have no effect on how efficiently businesses operate in Pakistan. However, there is a strong positive link between performance efficiency and organisational size and corporate governance characteristics.

Implications: The results suggest that investors, especially those who are minority stakeholders, should proceed with prudence when making investments in companies whose control and ownership are not aligned. In theory, this research adds to the body of knowledge by validating results from past studies on the success of businesses in a neglected area like Pakistan. We also take into account effect variables that go beyond the data that is currently available. All things considered, this study contributes to increased trust about the importance of ownership structure, size, and corporate governance factors in companies that are subject to market supervision.

Keywords: Ownership, Governance, Capital, Manufacturing Sector, Firm Performance, Pakistan Stock Exchange.

1. Introduction

The goal of the study is to examine how capital structure, business governance, and ownership of businesses affect how effectively inputs are turned into yields in Pakistan's industrial sector. It has been widely studied and acknowledged that organisational effectiveness affects the manufacturing sector's contribution to economic growth, development, and stock market stability

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(Hussain et al., 2022; Rasheed et al., 2022). Even now, academics are still paying close attention to this avenue. Financial ratios have been widely employed in previous research to evaluate productivity success. Rather than depending on a one-dimensional efficiency metric, Feroz et al. (2005) and Feroz and Hobson (2008) proposed that using DEA to evaluate firms provides a useful and unbiased assessment of overall performance among organisations. Evaluating a business's performance is a complicated matter that requires a more comprehensive method than the traditional one-dimensional metric that is usually used to describe it (Khan et al., 2022; Khan et al., 2021). A single efficiency metric is unlikely to be sufficient in the complicated business environment of today to assess performance (Zhu, 2014). In an environment where competition is fierce, manufacturing businesses must aim for excellence and cannot accept mediocrity. When converting inputs into final products, manufacturing organisations should strive to increase productivity across several performance measures by optimising all processes. Morita and Avkiran (2009) contended that DEA is the most illustrative method of assessing efficiency.

Corporate governance (CG) is the process by which organisations that finance businesses make sure their capital is returned appropriately (Shleifer & Vishny; 1997). The study demonstrates the critical role corporate governance plays in survival of a corporation. Firm theory suggests that stockholders with vested interests may put their own interests ahead of those of others. According to Kuan et al. (2011), controlling shareholders can have broad control powers and possibly utilise the company's assets for personal gain due to the ownership structure. According to La Porta et al. (2000) and Shleifer and Vishny (1997), dominant owners who have established control over a company can limit the rights of minority shareholders by making choices that are not subject to challenge from subpar corporate governance processes (Fan & Wong, 2002). Significant ownership and control gaps can lead to major problems for Pakistani manufacturing enterprises. The efficient performance implies that financial earnings can be raised by streamlining operations, such as making efficient use of labour, raw resources, and fixed assets. It is thought that controlling shareholders use cross-holdings and pyramid structures to maintain control over multiple enterprises (Claessens et al., 2002; Faccio & Lang, 2002; La Porta et al., 2000). A larger gap between cash flow and voting of shareholders makes it easier for controlling owners to pursue personal gains through improved operational performance. Therefore, the entrenched influence of controlling owners may make it more difficult to achieve improved financial performance. A lack of efficacy and efficiency may be the reason of meager fiscal performance. To increase the amount of resources available for their own profit, a shareholder pursuing personal gain may endeavour to increase efficiency. Controlling shareholders, however, might not always prioritise running the business or can have conflicting personal interests. According to research by Khan et al. (2022), this link is significantly impacted by the degree of financial leverage, or the structure of capital as defined by conventional theories. Lowering a company's cost of capital can improve its performance and get greater attention from lenders (De Angelo & Masulis, 1980). According to the study, a complex interplay between ownership, capital, and company strategies makes it easier to employ resources effectively, which boosts financial success.

The primary focus is on how ownership, governance, and capital attributes affect efficient performance. Pakistan is now not focusing much on this chance. It is among the Asia-Pacific region's industrialising nations that are struggling economically. Many industrial companies find it difficult to meet international standards in the post-pandemic business environment (Khan et al., 2023). Manufacturing companies are under increasing pressure to address the many commercial disadvantages brought on by information asymmetry as a result of rapid innovation. This emphasises how important it is to research the variables affecting Pakistani businesses' performance and efficiency. Using Data Envelopment Analysis (DEA) as a performance efficiency metric, this study attempts to explore ownership, capital, and governance structure affect on the efficiency of manufacturing sector in Pakistan. According to Kuan et al. (2011), the difference between cash flow, voting and seating rights are used to assess how serious the agency problems are for the company. The study try to find out if ownership structure, creditor scrutiny, and control division all contribute to less effective firm performance. The purpose of the study is to ascertain whether the ownership composition of businesses in Pakistan's professional environment affects how effectively inputs are converted into outputs. We found that the division of control rights and cash flow rights, as well as the variations in voting rights and income flow privileges, do not significantly affect efficiency effectiveness using the ordinary least squares (OLS) approach. Data spanning from 2011 to 2022 indicates that Pakistani industrial organisations are unaffected by the division of ownership and control. But in the Pakistani context, stringent corporate governance and creditor scrutiny are important. DEA ratings are used in this study as a stand-in for efficiency, which sets it apart from earlier research. This will add to our existing understanding on corporate governance by indicating that companies in Pakistan may not be significantly impacted by the division of ownership and control.

2. Literature Review

Influential publications like Berle and Means in 1932 are among the earliest examples of the research of how ownership structure influences corporate efficiency performance (Mizruchi, 2004). They contended that widely held US businesses frequently perform below averagely because ownership is distributed among small investors and centralised with managers (Morck et al., 1988). By balancing the interests of investors and managers, management ownership holdings might lessen managerial incentives for self-benefit, hence lowering agency costs and increasing firm value (Tayeh et al., 2023). According to the convergence of interest hypothesis, improved business performance should follow from increased managerial ownership levels. Demsetz (1983) and Fama and Jensen (1983) contend that executives' increased ownership of business stock might lead to issues as it strengthens their position and exacerbates conflicts of interest (Morck et al., 1988). According to McConnell and Servaes (1995), the relationship between ownership structure and business performance varies depending on how quickly or slowly the company is growing. Compared to high-growth companies, low-growth enterprises could be more affected by ownership. Due to less market liquidity or fewer chances for diversification, elevated proprietorship rights can have a detrimental effect on fiscal performance by raising the firm's weighted average cost of capital (WACC) (Fama & Jensen, 1983). According to Mahrt-Smith (2005), it is challenging to determine the precise impact of concentrated or dispersed proprietorship on company performance without

taking the firm's capital structure decisions into consideration. Increased ownership concentration can have detrimental consequences on business performance due to entrenchment effects akin to those observed in higher managerial posts (Khan et al., 2023; Morck et al., 1988).

H1: Ownership structure has a significant influence on performance efficiency.

According to Raheja (2005), the board of directors has two crucial responsibilities: monitoring and advice. According to Fama and Jensen (1983), the advising function include giving the CEO access to vital info and resources as well as professional support. Although Fama & Jensen (1983) emphasise the significance of outside directors, who give crucial skill and potentially significant relationships, both insiders and outsiders can carry out this task. More varied viewpoints and ideas are made possible by a wider board, which enhances performance (Gull et al., 2022; Dalton & Dalton, 2005; Dalton et al., 1999). In order to assure that executives act in the best welfares of shareholders, the board must supervise, censure, and, if necessary, remove incompetent management teams. According to Raheja (2005), insiders give the board important firm-specific advice, but they may have skewed objectives due to personal gain and the CEO's lack of independence. Outsiders provide better monitoring and are independent, although their knowledge of the company's operations may be limited. The availability of more collective input for the board is a benefit of a larger board with more non-executive members, which is important for the board's monitoring role (Lehn et al., 2007). According to both functions, when a board's size increases, board performance first improves. An increase in non-executives is anticipated to have a bigger beneficial influence than an increase in executive directors. Big boards have drawbacks like coordination costs and challenges with free riders. Coordination and communication problems first surface when it gets harder to schedule board meetings and come to a consensus, which makes decision-making take longer and be less efficient (Jensen, 1993). Additionally, a lack of desire among members to collaborate towards a mutual goal, interconnect clearly, and influence a consensus (Khan et al., 2022). When the cost to individual management of not working carefully about the size of the board falls, management freeriding grows (Lipton & Lorsch, 1992). Jensen (1993) proposes that the model board size should be roughly 7 or 8 directors, contrary to Lipton and Lorsch (1992) who recommend a board size of 8 or 9 directors and more (Jenter et al., 2023).

H2: Board size has a significant influence on performance efficiency.

The fact that there are additional costs associated with having separate CEO and chairman roles is one argument in favour of CEO duality. According to Brickley et al. (1997), cost monitoring occurs when the chairman and CEO have different responsibilities. However, in many cases, monitoring can out to be more beneficial than expensive. Nonetheless, the awareness that the CEO is under investigation typically prompts the desired responses (Twesigye, 2023). In other circumstances, increased monitoring might not significantly improve the CEO's positive behaviour, and the additional costs might not yield any benefits (Zajac & Westphal, 1994). Bonus payments based on the performance of the company, for example, can encourage the CEO to take less risks, which could have unfavourable effects. The costs associated with having a separate chairman and

CEO may outweigh the benefits. According to Brickley et al. (1997), businesses that have the same person in both the chairman and CEO positions outperform those that have different people in these positions. The results of the investigation showed that there are more costs associated with separating the roles of chairman and CEO than benefits. In addition to cutting expenses, CEO duality can enhance company performance by enabling a single leader to give clear guidance and be more adaptable to changes. A person who serves as both chairman and CEO may be more committed to the company and have a deeper awareness of its operations (Boyd, 1995). According to Pfeffer and Salancik (2015), leaders who have more discretion may carry out strategic decisions more successfully, which can help organisations overcome organisational stagnation. By extending the power base and solidifying authority, CEO duality promotes greater discretion. Additionally, CEO duality may lessen the power of other stakeholders, including as shareholders, who have less control over the CEO in the event that they simultaneously serve as chairman. According to Pfeffer & Salancik (2015), having a single leader raises the leader's degree of accountability and improves their ability to adapt to changes. CEO duality may make it more difficult for the board to effectively assess the CEO's influence (Mallette & Fowler, 1992). A compelling case for separating the duties of chairman and CEO could be made by the competing interests that come with CEO duality. Separating the CEO and chairman responsibilities can assist maintain checks and balances because the board is responsible for monitoring the performance of top management (Bolton & Thrower, 2021; Rechner & Dalton, 1991).

H3:CEO duality has a significant influence on performance efficiency.

Given the essential roles they perform, corporate boards of directors are seen as an essential part of corporate governance (Jensen, 1993; Lipton & Lorsch, 1992). To guarantee that managers act in the best interests of shareholders, corporate boards are advised to monitor, reprimand, and offer expert counsel. According to one hypothesis, a board's activity level and supervisory calibre can be determined by the frequency of its meetings. Regular meetings are also thought to give directors more chances to brainstorm, create ideas, and evaluate the efficacy of their management. This helps managers stay informed about significant developments inside the organisation and respond quickly to emerging challenges (Mangena & Tauringana, 2008). According to Sonnenfeld (2002), a constant attendance record at meetings is seen as an attribute of diligent directors. Directors' relationships can be strengthened and company performance can benefit from regular meetings and casual encounters (Dinh et al., 2021; Lipton & Lorsch, 1992).

A different theoretical perspective is that shareholders could not always benefit from board meetings. According to Vafeas (1999), directors typically fail to have significant conversations in the limited time they have together. Meeting time is largely occupied by routine activities like formalities and management report presentations. This has a detrimental influence on corporate performance (Lipton & Lorsch, 1992). Furthermore, board meetings incur expenses that might have a detrimental impact on the operation of the company, including managerial time, travel costs, refreshments, and director pay (Vafeas, 1999). According to Jensen (1993), boards of poorly run businesses should be less involved and have less conflicts. Rather of sticking to the traditional schedule of board meetings, he advises corporate boards to adopt a flexible approach tailored to

their specific challenges. In times of crisis or when the interests of shareholders are at stake, such as in situations involving hostile takeovers or CEO transitions, boards may decide to convene more frequently. Instead of concentrating only on meeting frequency, business boards can improve company performance by modifying meeting schedules to address pressing issues (Almashhadani & Almashhadani, 2022). Vafeas (1999) notes a significant improvement in operational performance following a year of unusual board involvement. This suggests that regular management consideration and constant oversight could lead to better decision-making; nevertheless, the benefits of this kind of in-depth examination are expected to show up in the upcoming years (Møller, 2021).

H4: Board meetings have a significant influence on performance efficiency.

Maintaining objectivity is a must for auditors in all of their duties. For the purpose of ensuring impartiality and fostering user confidence in financial statements, auditor independence is crucial (Akther & Xu, 2021). According to Chia-Ah & Karlsson (2010), mental and external presentation independence are two core independencies. To look independent, the auditor needs to stay out of circumstances where people could think they are biassed. According to DeAngelo (1981), auditor independence is the likelihood that the auditor will find any mistakes in financial statements, should they exist. According to Chia-Ah & Karlsson (2010), there are often significant dangers to an auditor's independence, which can make them less effective in providing auditing services. In order to mitigate the impact of losing a client and continue to provide higher-quality audits, he proposed that larger auditors with a larger clientele split their total costs among themselves. According to (Ebrahim, 2010), empirical research has provided further proof in favour of using auditor size as a measure of audit quality. Managers may be encouraged to modify reported profitability in order to conform to analyst projections, according to Davidson & Neu (1993). We predict that clients of larger auditing firms will face larger forecast errors than clients of smaller auditing firms if larger auditing firms offer superior audit quality in comparison to smaller ones. Based on information from Canadian businesses, the study concluded that auditor size is a reliable indication of auditor quality. When Lennox (1999) looked at the association between auditor size and quality, he found more evidence in support of the deep pockets theory. Building upon the analytical findings of DeAngelo (1981), Lidang (2004) notes that a number of studies compare the sizes of auditors in order to assess audit quality. Auditor size has been utilised as a criteria to assess audit quality by Alzeban (2020), Becker et al. (1998), Krishnan (2003), Li et al. (2010), and Vander Bauwhede and Willekens (2000).

H5:Audit quality has a significant influence on performance efficiency.

A thorough review of the literature carried out by Adams et al. (2010). They came to the conclusion that there was no discernible effect of the board's makeup on the company's success after analysing the data. They contend that previous research that shown a vigorous association amongst board configuration and business outcomes may have been faulty because it did not fully take into consideration the peculiarities of corporate board structures. Board independence is widely acknowledged by lawmakers and stock markets globally as a crucial component of good company governance. They often enact laws or rules mandating that there be more outside directors on the

boards of publicly traded corporations. Empirical evidence from numerous worldwide studies lends credence to the demand for more independent boards. In 22 non-U.S. countries, Dahya et al. (2008) found a significant and positive correlation between board independence and business success, particularly in areas with weak investor protections. Scholars have proposed multiple explanations for the discrepancies in findings regarding the influence of board freedom on business outcomes between US and non-US companies. External directors have typically made up the majority of business boards in the United States. According to numerous independent research carried out in a few different nations, board independence improves business performance (Farag et al., 2018; Jenter et al., 2023; Khan et al., 2022).

H6: Board independence has a significant influence on performance efficiency.

According to the definition of leverage given in the literature, there are numerous ways to calculate it. One method is to divide the long-term debt by the equity held by common shareholders to get the debt-to-equity ratio. Knowing what leverage means is crucial, especially in light of the objectives of the study (Rajan & Zingales, 1995). Organisations that have debt have obligations that are separate from sales, which is particularly problematic during recessions when sales typically decline. Companies that sell non-essential goods would find it difficult to turn a profit during these lean times, which could increase the danger of debt. In prosperous economic times, debt can be helpful for development and expansion, but in lean economic times, it can be challenging to manage (Myers, 2001). A company may find it more difficult to withstand drops in sales if it has more leverage (Opler & Titman, 1994). They assert that businesses with less leverage gain a larger portion of the market relative to their highly leveraged competitors. Investors are reluctant to associate themselves with businesses that are losing money or are in financial distress. Furthermore, financially sound companies usually use business downturns as an opportunity to increase their market share through aggressive pricing and increased promotion. They argue that companies are more susceptible to market downturns when they have large debt loads and significant R&D expenditures. Leverage, according to Opler and Titman (1994) and Khan et al. (2022), has a major impact on a company's ability to survive, particularly in highly competitive industries.

H7: Capital structure has a significant influence on performance efficiency.

3. Methodology

The aim of the article is to determine how capital structures, ownership, and governance impact the performance of manufacturing companies that are listed on the Pakistan Stock Exchange (PSX). The sample period runs from 2011 to 2022, a total of 12 years. The performance efficiency, ownership, corporate governance, capital structure, and control variables are the five areas into which the study's factors are divided. The next part will provide an explanation of the specifics.

3.1 Variable Measures

The dimensions of the variables included in the present investigation, as shown in Table 3.1, will be explained in this part.

Table 3.1: Operationalization of Variables

Variable	Measurement
Dependent Variable	
1. Efficiency Performance (DEA)	Property Plant & Equipment, Cost of Goods Sold, Total Salaries, and Operating Expenses are the input variables. Market Value and Total Sales are the output variables..
Independent Variables	
1. Divergence of voting and cash flow rights (VC).	Disparity between controlling owners' voting rights and cash flow %.
2. Divergence of seat control and cash flow rights (SC).	Disparity between controlling shareholder board seats and cash flow %.
1. Board Size (BSIZE)	The total number of directors.
2. CEO Duality (CEOD)	If the CEO also serves as the board chairman, then 1. Otherwise, 0.
3. Board Meetings (BM)	Number of Meetings in a financial year.
4. Audit Quality (AUDIT)	If the Audit firm is in the Top 4 then 1, Otherwise 0.
5. Board Independence (BI)	A measure of the proportion of independent directors to all directors.
1. Leverage (LEV)	Total Liabilities/Total Assets
Control Variables	
1. Firm Size (FSIZE)	Natural Log of Year-End Assets.
2. Firm Age (FAGE)	Natural Log of Age in Years.

3.2 Model Specification

The critique of traditional accounting metrics, such as return on equity (ROA), for being one-dimensional and having a limited use in assessing financial performance is the main topic of this study. DEA is offered as a realistic tool for analysing the relative efficiency of Pakistani manufacturing enterprises to solve these obstacles. The DEA offers a unique strategy that may be customised to varied systems by stressing performance criteria over mere averages. In Pakistan's industrial industry, input signal sums are significant decision variables. This study examines the performance of manufacturing entities by examining their ability to adjust input signals to reach target output amounts using a feedback signal-focused approach. An envelopment variation of the

linear programming model provides a targeted framework for evaluating the effectiveness of Decision Making Units (DMUs). Efficiency scores shown as θ, are calculated for each Decision Making Unit (DMU) using weights supplied by the DEA tool, designated as λ. An effective DMU is characterized by a value of 1 for θ, whilst slack variables are confined to 0. The study separates efficient Decision Units (DMUs) by their efficiency scores of 1. enterprises with efficiency ratings more than 0 but less than 1 are those that require much more weighted inputs to reach similar output levels compared to benchmark enterprises.

$$min\, \theta - \varepsilon \ (\sum_{k=1}^{m} S_k^- + \sum_{r=1}^{s} S_r^+); \sum_{j=1}^{n} x_{kj}\, \boldsymbol{\lambda}_j + s_k^- = \theta x_{ko}; \sum_{j=1}^{n} y_{rj}\, \boldsymbol{\lambda}_j - s_r^+ = y_{ro}; \sum_{j-1}^{n} \boldsymbol{\lambda}_j = 1; \boldsymbol{\lambda}_j, s_k^-, s_r^+ \geq 0 \quad \ldots(1)$$

In accordance with the approach of earlier research, we employed regression analysis to investigate the effects of ownership and control segregation on the effectiveness of production enterprises (Chang et al., 2004; Hoff, 2007; McDonald, 2009; Hsiao et al., 2010). Excel and EViews are two of the tools used to evaluate the model. The study's models are represented by the equations below.

$$DEA_{it} = \overline{\alpha_1} + \beta_1 VC_{it} + \beta_2 SC_{it} + \beta_3 BSIZE_{it} + \beta CEOD_{4_{it}} + \beta_5 BM_{it} + \beta_6 AUDIT_{it} + \beta_7 BI_{it} + \beta_8 LEV_{it} + \beta_9 FSIZE_{it} + \beta_{10} FAGE_{it} + \varepsilon_{it} \quad \ldots(2)$$

3.3 Statistical Techniques

The pooled regression method is one of the panel data analysis strategies used in this study to evaluate the relationship between the variables of interest. The Best Linear Unbiased Estimators (BLUE) that the Ordinary Least Squares (OLS) regression model generates ensure reliable and strong parameter estimations. Prior to performing regression analysis, the data is carefully examined to verify that the underlying hypotheses are true. Initially, diagnostic tests are conducted to validate fundamental assumptions in OLS regression.

4. Data Analysis and Discussion

We examine Pakistan's manufacturing sector using a two-stage DEA method developed by Simar & Wilson (2007). The final Ordinary Least Squares (OLS) regression analysis will employ the efficiency scores obtained as dependent variables. According to our analysis, five very successful textile companies account for roughly 6% of the industry. In addition, 42% of textile businesses are regarded as efficient, whereas 54% are categorised as semi-efficient to inefficient. Conversely, about 15% of textile industry businesses are regarded as extremely efficient, while the remaining businesses are regarded as efficient if their ratings are greater than 0.8 but less than 1. Six chemical companies, or more than 20% of the industry as a whole, have an efficiency score of zero. The remaining percentages fall into the semi-efficient and efficient categories, with 13% being deemed inefficient. However, 16% of the sugar industry's businesses are extremely productive.

There are 65%, 85%, and 60% of highly efficient businesses in the paper and board, cement, and fuel and energy sectors, respectively.

4.1 Descriptive Findings

The data's descriptive statistics are shown in Table No. 4.1. The mean, median, standard deviation, and range of each variable included in the study made up the descriptive statistics.

Table 4.1: Descriptive Statistics

Variables	Mean	Median	Maximum	Minimum	Standard Deviation
DEA	0.8891	0.9000	1.0000	0.2600	0.1064
VC	3.9888	4.0854	9.4727	-6.9078	1.8918
SC	7.5410	7.6752	13.8120	-2.5029	2.0140
BSIZE	7.3281	7.0000	10.0000	7.0000	0.6742
CEOD	0.2756	0.0000	1.0000	0.0000	0.4470
BM	5.2804	5.0000	19.0000	4.0000	2.3979
AUDIT	0.0633	0.0000	1.0000	0.0000	0.2436
BI	1.0117	1.0000	7.0000	0.0000	1.0485
LEV	-0.9619	-4.9519	9.4994	-11.5129	5.8681
FSIZE	3158.78	1318.70	63123.35	0.00	5594.64
FAGE	30.9309	26.0000	128.0000	3.0000	16.2608

4.2 Hypotheses Testing

Managerial ownership may lead to conflicts of interest since managers may put their own interests ahead of those of minority shareholders, according to the negative correlation and weak importance of management shareholding (VC) with Efficiency (Short et al., 1999). Adverse entrenchment effects are implied by the negligible influence of seat control rights (SC), as demonstrated by a very low coefficient. Particularly if they hold a sizable percentage of the shares, controlling shareholders may utilise their position to defraud other shareholders of their money (Jensen & Ruback, 1983).

Bigger boards may have less cohesiveness, which would lead to lower efficiency, according to the negative coefficient and significance of board size (BS) with efficiency (DEA) (Lipton and Lorsch). The consequence of CEO duality on organizational efficiency is minimal. This factor has little effect on business success in Pakistan's industrial sector. An rise in board meetings may have the unintended consequence of decreasing corporate efficiency, as indicated by the negative coefficient and significance of the number of meetings (BM). Remarkable results indicate that this industry requires excellent audits. According to Zehri and Shabou (2011), they have a greater tendency to uncover questionable accounting practices and reveal notable irregularities and misstatements, hence enhancing accountability. Increased ownership concentration might not have

a significant effect on efficiency, according to the board independence significance and coefficient. However, concerns exist that management interests might supersede those of minority owners (Short et al., 1999). Because leverage (LEV) and efficiency have a negative association, high financial leverage is associated with lower performance. This is in line with studies conducted in other Asian countries, which emphasise how important it is to manage leverage well for optimal results (Booth et al., 2001).

In this case, efficiency is not much influenced by firm size (FSIZE). The association between firm age (FAGE) and coefficient of determination is negative, suggesting that as businesses age, their performance may decline. The findings highlight the complex relationships between corporate governance elements and business effectiveness, offering suggestions for future study topics and areas for strategic decision-making in the industry.

Table 4.3: Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
VC	0.002	0.000	0.968	0.334
SC	0.001	0.000	-0.194	0.847
BSIZE	-0.019	0.011	-1.761	0.080
CEOD	0.002	0.001	-0.703	0.483
BM	-0.018	0.013	-1.760	0.080
AUDIT	0.069	0.018	3.863	0.000
BI	0.013	0.007	1.823	0.040
LEV	-0.001	0.000	-1.852	0.066
FSIZE	0.026	0.025	1.066	0.288
FAGE	-0.001	0.001	1.089	0.007
C	1.107	0.118	9.358	0.000
R-squared	0.216		Prob.	0.000
Durbin-Watson	1.827			

5. Conclusion

By investigating agency issues and entrenchment effects in Pakistani businesses with intricate proprietorship and control systems, this study adds to the body of existing work. It also improves our understanding of how commercial governance systems affect the outcomes and their efficiency in businesses by using a model that incorporated DEA and OLS regression to analyse the ownership and control separation on business efficiency in the manufacturing sector of Pakistan, taking corporate governance structures into account. Our results support the hypothesis by highlighting the critical role that capital structures and corporate governance play in Pakistan's

manufacturing sector. At standard confidence levels, insignificant findings were discovered regarding voting rights about cash flow and seat control. There is a difficult situation where creditors and other governance systems become more significant and majority stockholders do not have a significant influence. Minority investors believe that the interests of the majority shareholder are aligned with corporate goals, and that the majority shareholder effectively manages control and governance. In contrast, shareholders in Anglo-Saxon nations such as the US are more likely to withdraw from underperforming businesses. Asian nations like Pakistan frequently have listed companies with concentrated ownership structures, which are vital for monitoring management and improving performance via corporate governance's internal control framework.

It is significant to recognize contextualization of these findings because diverse countries and industries have different legal systems and economic conditions, these conclusions could not be applicable everywhere. Subsequent studies may examine comparisons across national borders and industries to ascertain the applicability and consequences of these findings. Moreover, applying different DEA models may improve our understanding of the dynamics of efficiency and performance in manufacturing firms and other industries.

5.1 Implications of the Study

The study has significant implications for all the stakeholder particularly for investors with significant inequalities in ownership and control should need to carefully consider and evaluate their alternatives before making an investment in a firm based on firms ownership, governance and capital structure, especially if they are minority shareholders. This study also offers helpful information to corporate governance policymakers by highlighting beyond the simplistic univariable view to incorporate the complex interplay between ownership, governance and capital structures for holistic and effective policy making.

5.2 Limitations and Recommendations

The findings draw attention to the intricate associations that occur among commercial governance elements and business performance, pointing to potential new study directions and directing industry strategic decision-making. Future researchers can focus to expand and include services and financial sectors to increase generizeability of the framework or can have indept analysis of a single sector to identify and distinguish any contextual aspects of ownership, governance and capital structure in Pakistan. Lastly researchers can focus on other economies, demographies and time span to increase the generizeability of these findings through and across time series in varying senerios.

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