Family Business Ownership, Corporate Governance and Firm Performance in Bangladesh

By

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Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Business Administration (Finance)

Department of Finance
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March 2026

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Summary

Corporate governance is a crucial issue in achieving the corporate wealth maximization objective of the corporation. With the changes in the business environment through globalization, stakeholders are more concerned and demanding more clearly and reliably accounts, neutral behaviors, safeguards, and a clear view of the company's progress. It is observed that as long as wealth maximization responsibilities are assigned mainly to investors holding stock companies, every country faces the challenge of how to minimize the cost of equity to a reasonable level. Besides, the ownership structures around the world reflect differences in several countries based on the theoretical development and financial environments.

Available literature suggests that the ownership control mechanism is one of the most debated issues in corporate governance activities. However, different procedures have been used to categorize firms by control type. Furthermore, as the stock possession has become more delicate over time and with the size of the company, the amount of stock required for active control may decrease. The available literature documented that the extent to which family members continue to exercise control in the boardroom varies widely as their ownership of the firm decreases (Mace, 1971). However, there is an overall consensus that the concept of control envisions the ability to choose the board of directors for the corporations, either by voting power inherent in stock ownership or by position control attained by the organization when there is extensive diffusion of stock ownership. Different decision criteria for categorizing firms have resulted from changes in the amount of ownership required for control, shifts in ownership structures and board configurations among firms, and changes in the perceived control advantage over time. The fractions of the board of directors who perform and the extent to which ownerships are dispersed to

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different clusters have also been examined as elements of corporate control and governance devices.

With the above background in mind, this thesis examines the relationship among family ownership, corporate governance practices, and firm performance within publicly listed companies in Bangladesh from 2015 to 2024. With structural changes in guidelines and principles in both domestic and international arenas, there have been numerous aspects to be addressed for CG practices and firm performance. This study, entrenched in CG theories such as agency theory, stewardship theory, stakeholder theory, institutional theory, and resource dependency theory, investigates the impact of family business characteristics and governance mechanisms on financial performance, assessed through return on assets (ROA), return on equity (ROE), and net worth (NW).

Chapter two of this thesis provides an extensive literature review on family ownership, corporate governance practices, and firm performance across various international and domestic contexts, illustrating the diversity of methodologies and findings. Existing literature suggests that an in-depth examination of both earlier and recent studies focusing on the concentration of family ownership, the role of corporate governance, and how these factors are linked to a firm's financial performance is needed. Family-owned businesses make-up a significant portion of the global economy, as revealed in different studies and research. For example, Anderson and Reeb (2003) noted that over one-third of S&P 500 firms are family-owned. In 2018, a Global survey on Family Business by PwC (Price Waterhouse Coopers), London, UK, highlighted that the concentration of family ownership has a strong presence, with 64% of Indonesian businesses falling into this category. The way family firms are governed plays a crucial role in their success, often differing considerably from non-family enterprises. Globally, over two-thirds of

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businesses are family-owned, and their importance is increasingly acknowledged (London Economics, 2002).

Jensen and Meckling's (1976) ownership structure theory suggests that there is a positive association between managerial rights and firm worth. Supporting this view, studies by McConaughey et al. (1998) and Barontini and Caprio (2004) also find that control of the family firm is positively associated with firm efficiency, suggesting that higher levels of family ownership can enhance business outcomes. Anderson and Reeb (2003) and Miller et al. (2007) showed that family ownership may have a significant effect on business success. McConaughey et al. (1998) and Barontini and Caprio (2004) also find that control of the family firm is positively associated with firm efficiency, suggesting that higher levels of family ownership can enhance business outcomes. The earlier studies on Japanese family businesses (Yoshikawa, T. et al., 2010; Morikawa, M., 2013; Arikawa et al., 2019; Koji et al., 2020) have found consistent results with the parameters indicated above. The literature presents mixed findings: Pindado and Requejo (2015) identify a positive link, other studies—such as those by Fauzi and Locke (2012) and Wang and Shailer (2015)—report adverse outcomes in developing countries. Similarly, some scholars (Young et al., 2008; Miah, M.S., et al., 2023) argue that listed family firms do not outperform non-family counterparts, while others (Chahal & Sharma, 2020; Koji, K. et al., 2020) suggest that family involvement enhances firm value. Alves and Gama (2020) further contend that family influence on firm success is complex and cannot be labeled as positive or negative.

Chapter Three of this thesis provides the concept regarding the institutional environment of corporate governance with its systems and practices, nature and style of the family firm that exists around the world and in Bangladesh. It also provides a detailed sketch of the

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financial ecosystem and the pattern of market governance, along with its performance in Bangladesh. Financial market structure includes the formal, informal, and semi-informal financial sectors of Bangladesh. It also encompasses the money market, capital market, forex market, and the regulators-Bangladesh Bank (BB), Bangladesh Securities and Exchange Commission (BSEC), Micro-Credit Regulatory Authority (MRA), and Insurance Development Regulatory Authority (IDRA) of the financial market of Bangladesh. Under the money market infrastructure, bank- like- State-owned Commercial Banks (SCBs), Private Commercial Banks (PCBs), Specialized Banks (SBs), Foreign Commercial Banks (FCBs), etc., non-bank financial institutions (NBFIs)-like- House Building Finance Corporation (HBFC), Bangladesh Development Bank Limited (BDBL), Palli Karma-Sahayak Foundation (PKSF), Grameen Bank (GB), etc., micro-financial institutions (MFIs), and leasing companies are noted. Similarly, under the capital market, stock exchanges – like; Dhaka Stock Exchange PLC (DSE) and Chittagong Stock Exchange PLC (CSE), the depository- Central Depository Bangladesh Limited (CDBL), merchant banks (MBs), asset management companies (AMCs), stock- brokers, stock-dealers, venture capital, etc., are also discussed broadly.

It is observed that as of fiscal year 2024, 61 scheduled banks and 5 non-scheduled banks were operating in the country. The aggregate ROA & ROE showed significant variability over the years, with ROA remaining slightly above 0%. Generally, below 1% in most years from 2012 to 2024, and the aggregate ROE rate began at approximately 8% in 2012, reached a peak of about 11–12% 2013, 2015, and 2017. The Amount of Non-performing Loans (NPLs) by major types of banks rose from 501.6 billion to 2113.91 billion from 2014 to the end of June 2024. The highest DSE index was 7329.00 in 2021, and the lowest was 4898.52in 2024. The highest-ranking aggregate market cap of DSE was 45.20 billion

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in 2023, and the lowest was 2.54 billion in 2008. The market capitalization (Market cap)-to-Gross Domestic Product (GDP) ratio peaked at 50% in 2010, before the crash, and dropped to its lowest point at 4.2% in June 2006.

Chapter four of the thesis has focused on the adopted research methods for this study and the reasons behind such selection. This chapter has also shed light on the conceptual framework employed to understand the relationship between family ownership and firm-level profitability.

Positivism was the guiding philosophy of the study. Secondary data collected from the books of account and the equity market could be taken at face value, and the insights stemming from these data points can perfectly represent the research area of interest. Choosing 'positivism' as the guiding philosophy is considered a mainstream paradigm in corporate finance research. While conducting the research, a deductive research approach was followed, whereby null hypotheses were constructed and tested. Determinants of firm-level performance have already been well-identified in the empirical papers. So, as per the established literature, this research phenomenon is well-documented. It was empirical research; the established theory was tested in the context of Bangladesh. This study employed a gamut of quantitative research tools, which is consistent with the positivist philosophy. It is a multi-method quantitative study that encompassed correlation analysis, regression analysis, and other statistical methods.

This research is based on archival research. The data collection is based on an in-house constructed Excel template. Secondary data was used for this research. The data was collected from annual reports of the listed firms of the Dhaka Stock Exchange PLC. As per the current regulations, annual reports are available in the public domain; there is no need to seek prior permission. Likewise, macroeconomic data were downloaded from the

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Bangladesh Bank and the Bangladesh Statistical Bureau websites. Again, this information is also available in the public domain and freely downloadable. One hundred four (104) firms representing both the financial and manufacturing sectors were included in the final sample. These firms were chosen based on convenience sampling. In order to manage 'survivorship bias', newly listed and relatively young enterprises were eliminated from the sample. Companies that had been listed before 2015 and had been in continuous operation during the whole research period were taken into account.

'Financial performance', 'Family ownership' and 'Corporate governance' were used as dependent variables, key independent variables and key moderating variables, respectively. Firms were classified as family businesses if the founder is in charge, or if family members hold important executive positions, or if family members are among the top ten shareholders, or if at least 50% of the board is made up of family members, or if a privately held family business retains ownership. The dependent variable - financial performance was measured using three primary metrics: net worth (NW), return on equity (ROE), and return on assets (ROA). The level of 'corporate governance' was measured through standard parameters such as board size, board independence, and board committees.

The study has employed a multiple linear regression model in order to understand the relationship between family ownership and financial performance. Regression parameters can be estimated using different frameworks – the OLS (Ordinary Least Squares) framework, the MLE (Maximum Likelihood Estimation) framework, and the GMM (Generalized Method of Moments) framework. In this study, the researcher used the ordinary least squares technique to estimate the regression parameters. Since the research time frame covered a period of 10 years [2015-2024], in order to understand the nature of

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causality, panel regression was used. The baseline model was a fixed effects one, as suggested by the Hausman test. The researcher has reported the pooled OLS, Random-effects, and panel corrected standard error model results, as well as the baseline research. Endogeneity concerns in the estimated effects were mitigated through the omitted variable channel. A gamut of tests for robustness was also run to assess the validity of the estimated effects in different contexts.

Chapter -5 deals with the empirical analysis of the dissertation. It at first presented the descriptive statistics of the research variables, followed by a correlation matrix. For most of the research variables, the range is substantial, indicating a wide cross-sectional variation. The correlation between 'Ownership Concentration' and 'ROA' is weakly positive; on a similar line, the correlation between 'Ownership Concentration' and 'ROE' is also positive.

By employing statistical tools like the Condition index and VIF, probable multicollinearity concerns were identified. It was revealed through these tests that multicollinearity did not pose any significant concern in this database. Likewise, probable outlier concerns were identified through standard tests like Cook's distance, COV ratio, and hat matrix. It was found that the outlier did not pose any significant concern in this database. By employing statistical tools like the White test, B-P test, and graphical technique, probable heterogeneity concerns were identified. It was revealed through these tests that the error variance is not constant. This problem was later mitigated by using robust standard errors while estimating coefficients. By summarizing the key conclusions of the A-D test and J-B tests, and by graphically plotting the errors, it was concluded that the errors are not normally distributed. So, the researcher tried to estimate consistently by using a bigger sample size. Pesaran CD test indicated that there exists significant cross-sectional

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dependence in the data. Likewise, it was evident from the Lagrange multiplier test that there is statistically significant heteroskedasticity in the panel data model.

There was robust statistical evidence to suggest that the random effects model is inconsistent. Therefore, the fixed effects model was the preferred specification for the panel regression model. The positive coefficient suggests that family firms tend to have superior performance compared to non-family firms. However, the effect is not statistically different from zero. As per the panel corrected standard error model, the beta coefficient concerning family ownership is positive and statistically significant. This suggests that family firms tend to have higher return on assets compared to non-family firms, holding other variables constant. The coefficients for Ownership Concentration, Age, Total Assets, and Board Committee are statistically significant. On a similar note, the beta coefficient concerning family ownership is positive and statistically significant as per the pooled OLS model. Before running the regression models, the preconditions were met. Moreover, the pre-conditions were as follows: the anticipated association between the factor and the independent variable was linear; data were gathered by random sampling; covariance between independent variables and the error term was zero; and there was no perfect multicollinearity among the pairs of independent variables.

Endogeneity is a key statistical concern in regression analysis, which can lead to biased and inconsistent estimates. Three models were run to check whether the inclusion of initially omitted variables in the regression changed the results. In the 1st model, the GDP growth rate variable was added with the pre-specified set of control variables. Model 2 included all the standard firm-level controls along with the inflation variable. The baseline effects remained unperturbed when omitted variables were introduced in the model. Robustness of the model was evaluated by using winsorized data and alternative

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definitions of the dependent variable. The baseline effects remained unperturbed in these tests of robustness.

Finally, the existence of cross-sectional heterogeneity was checked out. The hypothesized positive relationship between firm performance and family ownership concentration is supported in the cross-sectional regression, but the magnitude of the regression coefficient changes in the small-in-large firm case and the mature-in-young firm case. In a nutshell, the estimated effects demonstrated cross-sectional heterogeneity.

In conclusion, this thesis documents the understanding of how family ownership, agency conflicts, and corporate governance interact to influence firm performance in Bangladeshi firms, using the model employed in the study. Moreover, the findings of the study indicate diverse results for family business ownership and corporate governance issues. It is argued that greater board independence, better regulatory execution, and increased transparency are critical for addressing agency problems and enhancing corporate performance.

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Acknowledgement

At the very beginning, I want to express my sincere gratitude to Allah SWT for giving me the health, strength, and chance to finish my D.B.A. thesis. I express my gratitude to the University of Dhaka for the opportunity to pursue the D.B.A. program and for the support received during my academic journey. This research results from prolonged dedication and has been influenced by numerous individuals and institutions. I express gratitude to many individuals, but I wish to specifically acknowledge a select few, while also recognizing the significant contributions of those unnamed individuals.

I express my sincere gratitude to my esteemed teacher and supervisor, Dr. A. A. Mahboob Uddin Chowdhury, Professor and former Chairman of the Department of Finance, University of Dhaka. The confidence he placed in me, along with his consistent encouragement, timely feedback, insightful guidance, and mentorship, has been crucial to the successful completion of this thesis. His role as a supervisor, educator, and mentor has significantly influenced my academic and professional development.

I express my sincere gratitude to my family for their exceptional patience and understanding during my D.B.A. studies. I regret my inability to allocate additional time to them during this challenging period. I express my gratefulness to my wife for her unwavering sustenance, patience, and inspiration, which enabled me to navigate challenges and sustain emotional equilibrium. Her sustained motivation was essential for the completion of this four-year academic endeavor.

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I extend my gratitude to the faculty members of the Department of Finance for their unwavering support and encouragement, as well as to the department staff for their assistance during my research. I express my gratitude to my colleagues and fellow faculty members in the Department of Finance, whose support and confidence in my capabilities facilitated my overcoming of challenges and attainment of this significant academic milestone.

Finally, I express my sincere gratitude to all who have provided support throughout this journey. Their support and involvement have significantly impacted my academic trajectory. I wish to acknowledge the essential guidance of my supervisor and the steadfast support of my wife, both of which were crucial to the completion of this thesis.

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Declaration

I solemnly declare that the research entitled “Family Business Ownership, Corporate Governance, and Firm Performance in Bangladesh”, submitted to the Department of Finance, University of Dhaka, as part of the requirements for the Doctor of Business Administration (D.B.A.) degree, is the result of my work conducted under the supervision of Dr. A. A. Mahboob Uddin Chowdhury, Professor and former Chairman of the Department of Finance, University of Dhaka, Dhaka-1000, Bangladesh.

I affirm that this thesis is entirely original and has not been submitted to any other institution for the award of a degree or any similar academic purpose. All sources and references used have been duly acknowledged within the thesis.

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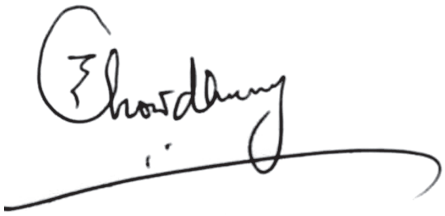
Certification

This is to certify that Md. Saiful Islam, Doctor of Business Administration (D.B.A.) student in the Department of Finance, University of Dhaka, has completed his thesis entitled “Family Business Ownership, Corporate Governance, and Firm Performance in Bangladesh” under my supervision.

I certify that this thesis is his original research work and has not been submitted for the award of any degree in any other university or other purposes.



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List of Acronyms

Acronym	Full Form
ADB	Asian Development Bank
BSEC	Bangladesh Securities and Exchange Commission
BB	Bangladesh Bank
BC	Board Committee
BEI	Bangladesh Enterprise Institute
BI	Board Independence
BLS	Bank Led System
BoD	Board of Directors
BS	Board Size
CG	Corporate Governance
CAG	Comptroller and Auditor General
CMIs	Capital Market Intermediaries
Cov.r	Coefficient Variance Ratio
Cook.d	Cook's Distance
DSEX	Dhaka Stock Exchange Broad Index
EMS	Equity Market-Based System
FB & FF	Family Business and Family Firm
FBS	Family Based Systems
FCGS	Family-Based Corporate Governance System
FRC	Financial Reporting Council
FEM	Fixed Effect Model
GDP	Gross Domestic Product
GMM	Generalized Methods of Moment's
GLS	Generalized Least Squares
ID	Independent Director
IDRA	Insurance Development and Regulatory Authority
IMF	International Monetary Fund
LDC	Least Developed Country

MFIs	Micro-Finance Institutions
MRA	Microcredit Regulatory Authority
NBFIs	Non-Bank Financial Institution
NNPL	Net Non-Performing Loan
NDE	Normal Distribution of Errors
OLS	Ordinary Least Squares
OC	Ownership Concentration
Pesaran CD	Pesaran Cross-Sectional Dependence
PCSEs	Panel-Corrected Standard Errors
ROA	Return on Assets
ROE	Return on Equity
REM	Random effects model
SDGs	Sustainable Development Goals
UN CDP	United Nations Committee for Development Policy
VIF	Variance Inflation Factors

Chapter – One
Introduction

Now-a-days, corporate governance is extremely important in corporate planning globally. With the development of globalization, the stakeholders around the world are gradually demanding about more clear and dependable accounts, impartial behaviors, safeguards, and a clear view of the company's advancement. It is observed that as long as wealth maximization responsibilities are assigned mainly to investors held stock companies, every country faces the challenge of how to minimize the cost of equity to a rational level. Moreover, the ownership structures around the world reflect differences in different countries based on the theoretical development and financial environments.

It is argued that the ownership control mechanism is one of the most discussed issues in corporate governance arrangements. However, several different procedures have been used to categorize firms by control type. Moreover, as stock possession has become more subtle with the time and size of the company, the amount of stock required for active control may drop. The available literature advocates that the extent to which family members continue to exercise control in the boardroom varies widely as their ownership of the firm decreases (Mace, M.L. 1971). However, there is an overall consensus that the concept of control envisions the ability to choose the board of directors for the corporations, either by voting power inherent in stock ownership or by position control attained by the organization when there is extensive diffusion of stock ownership. Different decision criteria for categorizing firms have resulted from differences over how much ownership is mandatory for control, from changing shapes of ownership and board composition amongst firms, and differences in the perceived control edge with the passage of time. The fractions of the board of directors who perform and the extent to which

ownerships are dispersed to different clusters have also been examined as elements of corporate control and governance devices.

Furthermore, the shared use of liability and ownership yields a control procedure that substitutes between shared and tiered execution. Different managers screen everyone through this mechanism. This plan could be observed as midway between the jobs of decision rights for contracting parties (control privileges) and assigning them to a third party (negotiation). By substituting regulator privileges between themselves, executives successfully run themselves over as captives to the alliance, and form a communal result applying cooperation (Williamson, 1985). Thus, agency costs associated with debt should also be lessened as a result of the corporate ownership structure. As argued by Jensen, M.C. & Meckling, W.H. (1976) and Myers, S. C (1977), debt may create adverse investment inducements if opportunities exist to transfer value from creditors to equity owners. The conflict can be relieved by the extent to which ownership and credit extension are alive within the same unit.

Activities that improve the reliability of shareholder commitments, by lessening the risk of immoral behavior, are likely to be the value to shareholders. Shareholders will have to pay for their inability to commit and will likely do so through financial reward to managers for the bigger risks that they look. The greater the risk of being subject to 'shareholder opportunism', the greater the upfront contractible element of income of that manager will need. Where the risks of opportunism are maximum, one would imagine observing the greatest efforts to recognize on the prices of speculation through the design of suitable security construction to limit the scope for such behavior.

The entire framework that determines how a business is set up, run, and held accountable is known as corporate governance. It places a high priority on moral conduct, openness,

and the interests of all parties involved. This framework serves to guide a company's long-term success by delineating decision-making processes, authority distribution, and goal alignment. Accepted principles encompass transparency, fairness, accountability, responsibility, and effective risk management. Effective governance practices enhance confidence, fostering trust, stimulate investment, and mitigate conflicts by reducing information asymmetry and promoting ethical behavior. This trust is crucial for developing robust relationships with shareholders, employees, clients, and the wider public. Corporate governance should be regarded not only as a regulatory obligation but also as a strategic asset that fosters trust, an essential intangible resource.

A company's success is shaped by both its internal strengths and the external market environment. Theories suggest that strong corporate governance can boost value and financial performance in both advanced and emerging countries. While an organization's financial results are the main gauge of its economic outcome, a multitude of elements contribute to the complex interplay of economic efficiency and market value, such as asset quality, capital sufficiency, proceeds on capital, and price of the share (Rambo, C. M., 2012). However, it's not just corporate governance that impacts market valuation and financial performance. Other factors influencing a business's performance include technological advancements, environmental concerns, legal and social issues, macroeconomic conditions, liquidity, business size, leverage, managerial skill, sales growth, and the availability of skilled top management personnel (Bona-Sánchez, C.al, 2011). To assess the accounting profitability, Return on Assets (ROA) and the market-to-book ratio of assets are identified as the key performance metrics (McConaughy et al., 1998; Filatotchev et al., 2005; Pérez-González, F., 2006).

An in-depth examination of both earlier and recent studies focusing on the concentration of family ownership, the role of corporate governance, and how these factors are linked to a firm's financial performance. Family-owned businesses make-up a significant portion of the global economy, as revealed in different studies and research. For example, Anderson, R. C., & Reeb, D. M. (2003) noted that over one-third of S&P 500 firms are family-owned. In 2018, a Global survey on Family Business by PwC (Price Waterhouse Coopers), London, UK, highlighted that the concentration of family ownership has a strong presence, with 64% of Indonesian businesses falling into this category. The way family firms are governed plays a crucial role in their success, often differing considerably from non-family enterprises. Globally, over two-thirds of businesses are family-owned, and their importance is increasingly acknowledged (London Economics, 2002).

According to Jensen M.C. & Meckling, W.H. (1976), ownership structure theory suggests that there is a positive association between managerial rights and firm worth. Supporting this view, studies by McConaughey et al. (1998), Barontini and Caprio (2004) also find that control of the family firm is positively associated with firm efficiency, suggesting that higher levels of family ownership can enhance business outcomes.

Scholars in CG indicate that family rights offer both paybacks and tests. Multiple studies have revealed mixed results, indicating both positive and negative associations between family involvement and firm outcome (Miller et al., 2013; Martin et al., 2017). Although some studies indicate beneficial outcomes of family ownership in European countries like France, Belgium, Spain, and Germany (Maury. B., 2006; Kuan et al., 2011), the overall results are still inconclusive. This suggests that the association between control of family and firm efficiency may exhibit a nonlinear nature, incorporating both positive and negative aspects (Villalonga, B., & Amit, R., 2006; Sener, 2014; Feldman et al., 2019).

Several scholars, including Abels, P., & Martelli, J. (2011), Chahine, S., & Safieddine, A. (2011), Nicolaescu. E., (2012), and Chahal H. and Sharma A. K., (2020), have reported a positive association between CG and FP. However, other studies present conflicting evidence, showing weak, negative, or mixed results (Pandya H., 2011; Ahmed, H., & Gábor, A., 2012; Peni, E., & Vähämaa, S., 2012; Gharbi, S., & Othmani, H., 2022). emphasized the ongoing debate over the relationship between CG and FP, highlighting discrepancies between developed and developing economies.

Gharbi, S., & Othmani, H (2022) proposed that the link between family involvement and firm efficiency is non-linear in France, meaning that excessive family control might hurt performance. Muntahanah et al. (2021) also found that CG factors influence this relationship in Indonesia. Laporšek et al. (2021) found no substantial relationship between ownership concentration and firm outcomes, noting that Slovenian state-owned firms underperformed compared to private firms. Minh Ha et al. (2022) observed a negative association between family ownership and firm success in Vietnamese companies.

In the Malaysian context, Elvin, P., & Hamid, N. I. N. B. A. (2016) highlighted that ownership structures and governance practices have a notable impact on firm outcomes. Muntahanah et al. (2021) reported that family ownership in India tends to weaken firm performance. Aligning with Fama, E., & Jensen, M. (1985), suggested that family interests may conflict with those of other shareholders, Juanda, K., & Jalaludin, M. (2018) argued that family ownership can introduce specific vulnerabilities within a business.

In another study, Dharmadasa. P. (2014), observed a positive correlation between family ownership and corporate success in Japan, but an adverse relationship in Sri Lanka. Chung, H. M., & Chan, S. T. (2012) showed that managerial leadership benefits short-term profitability, particularly in family firms. Jaskiewicz et al. (2017) explored how

family ownership affects the link between CEO compensation and corporate performance. Masset, P., et al. (2019) contend that the presence of both family and non-family block holders negatively impacts firm performance, and Saidat et al. (2020) found that non-family-owned enterprises outperformed their family-owned counterparts.

From the above discussion, it is observed that CG serves as a crucial mechanism for managing the agency conflict between owners and managers and enhances corporate performance and it ensures transparency, accountability, and control, facilitating value creation and market confidence (Shleifer, et.al.1997; Chowdhury, A. A. M. U., and Uddin, M., 2002, 2006). In another study, it was documented that good governance practices help protect firms during crises and promote sustainable development by enhancing performance, improving market access, lowering capital costs, boosting company reputation, and strengthening the financial sector (Neves, E. D. S. et.al, 2011).

Available literature suggests that family business form is considered one of the most integral parts of business and significantly contributes to the growth of any country's economy. Different dimensions have emerged with the development of family business based on regional considerations. This sort of enterprise is generally defined by concentrated ownership, intergenerational participation, and governance frameworks influenced by familial connections. According to Anderson, R. C., & Reeb, D. M. (2003), a family business is generally characterized by family dominance in ownership or board representation. These entities represent the most common form of business structure and are often the engine of job creation. These characteristics can promote long-term vision and commitment; however, they may also lead to specific governance challenges, including conflicts of interest, nepotism, and reduced agency costs. The structure of firm ownership and its influence on performance have gained considerable attention from

policymakers and stakeholders, particularly in the context of sustainable business, industrial, and economic development.

The participation of family adherents in executive and policymaking roles indicates the level of control they hold in a family-owned business. Their participation in management and governance directly affects firm outcome (Howorth, C. et al., 2010). In addition to acting as shareholders, family members often hold positions on boards or executive teams, thus influencing strategic decisions (Aguilera, R. V., and Crespi-Cladera, R., 2012). While some studies emphasize the benefits of family involvement, others have highlighted potential conflicts between family and non-family stakeholders (Sakawa, H., & Watanabel, N., 2019; Caputo et al., 2018).

According to La Porta, R. et al. (1999), two major factors justify the need for focused research on family business models and governance. First, family businesses are the dominant form of ownership in most economies. Second, family control is not limited to Small and Medium-sized Enterprises (SMEs) but extends to large listed companies. The literature presents mixed findings: while some scholars (Young, C. S., & Tsai, L. C., 2008; Miah, M. S., et.al, 2023) argue that listed family firms do not outperform non-family counterparts, others (Chahal H. and Sharma A. K., 2020; Koji, K. et.al, 2020) suggest that family involvement enhances firm value. Alves, C. A., and Gama, A. P. M. (2020) further contend that family influence on firm success is complex and cannot be simply labeled as positive or negative.

Moreover, Family-owned firms are widespread and have considerable influence worldwide (La Porta, R. et al., 1999). They range from small ventures to large multinational corporations, many of which are publicly traded (Andersson, F.W. et al., 2018). Researchers have examined family firms from different perspectives, such as firm

performance, succession planning, financing methods, professionalization, and wealth preservation. As a result, the study of family business performance has grown substantially (Mazzi, C, 2011). Understanding how these businesses perform is vital for advancing theoretical and practical knowledge (Astrachan, J. H., 2010; Wright, M., & Kellermanns, F. W., 2011). It is believed that family businesses represent over two-thirds of enterprises globally, with their influence steadily increasing (London Economics, 2002). The study by Faccio, M., & Lang, L. H. (2002) found that the family-controlled firms hold significant shares in listed companies across Western Europe, while Lee. K (2004) notes that a third of Fortune 500 companies are family-run. In India, family businesses contribute 79 % to GDP and play a crucial role in employment (Angle One, Daily Financial News of India, 30th July, 2025).

Different researchers have begun to focus on family businesses due to their widespread presence and substantial impact on the global economy (Colli, A., 2003; Caputo et al., 2018). Over the past few decades, family-owned firms have emerged as a key topic in academic discourse, largely because of their vital economic significance (Zahra, S. A., & Sharma, P., 2004; Debicki. B.J. et al., 2009). It is estimated that these enterprises account for approximately 70% to 90% of the world's GDP (Elstrodt, H. P., Poullet, J. M., 2020), which underscores the growing scholarly attention they receive.

In Bangladesh diverse range of businesses are operating with their unique nature characteristics. The major elements are proprietorship, partnership, domestic corporations, and Multinational Corporations (MNCs). It is observed that numerous family-owned businesses are operating in Bangladesh and play an important role in the development of the economy.

With regard to governance issues in our country, CG practices comprises of several pillars: size of the Board of Directors (BS), independent directors (IDs), Audit and Remuneration Committees (AC & NRC), role of Chief Executive Officer (CEO) and Managing Director (MD), Chief Financial Officer (CFO) and Head of Internal Audit and Control (HIAC) roles, statutory auditors on regulatory governance and reporting. Effective governance reflects organizational culture and is vital for economic growth and trust among all stakeholders.

Firm performance is one of the important areas suggested by researchers, a main outcome of business operations, which is typically evaluated through financial indicators like profitability, return on equity, market value, and customer satisfaction (Almajali et al., 2012; Delen, D., et al., 2013). Different studies confirmed that financial analysis is the standard approach for assessing a firm's overall performance.

Research Gap and Contribution

Keeping in view of the above issues, this study is an attempt to analyze the present knowledge gap by offering a detailed examination of the association between family business ownership, CG practices, and firm outcome, particularly in the context of Bangladesh. This study will explore the defining characteristics of family businesses, the foundational principles of corporate governance, and the metrics of firm efficiency, followed by an in-depth examination of the interactions and influences among these elements within the unique context of the Bangladeshi business environment. The research work will subsequently examine the principles of corporate governance and their specific significance for family businesses. It focuses on understanding how governance tools—such as ownership concentration, board structure, and independence—affect firm outcomes like ROA, ROE, and Net Worth. This study analysis empirical evidence from

publicly listed family firms from 2015 to 2024 to elucidate how governance structures can be optimized for the long-term achievement of family enterprises in the changing corporate landscape of Bangladesh. The thesis will try to identify significant research gaps and propose future directions for investigation, concluding with essential implications for stakeholders.

Current empirical research regarding the intersection of family ownership, governance, and firm performance remains fragmented, with a notable lack of consistent data from emerging markets. Studies situated in Bangladesh have historically been constrained by narrow sectoral focuses, brief longitudinal windows, or outdated regulatory contexts. Furthermore, many prior analyses fail to account for the interactive effects of governance and ownership or neglect rigorous econometric challenges such as endogeneity and heteroskedasticity.

To address these scholarly gaps, this thesis provides a methodologically rigorous analysis of publicly listed firms in Bangladesh between 2015 and 2024. Utilizing a balanced panel dataset and sophisticated data techniques, the study examines corporate governance as a moderating factor while accounting for variables like firm age and size. This research contributes fresh, context-specific evidence to the literature, offering valuable insights for regulatory bodies and practitioners operating within evolving institutional landscapes.

The study is compassed of six chapters. Chapter-One, gives an introduction containing an overview and background of the study. In this chapter the researcher provides the conceptual framework of the thesis and demonstrates the relevance of the study.

Chapter-Two outlines the theoretical background, literature review, and historical analysis of research in family businesses and corporate governance. Moreover, it includes a large-scale review of key empirical research conducted both globally and domestically,

summarizing fifty-seven significant studies on family business and corporate governance in tabular form. This review aims to identify research gaps and offers an inclusive summary of the existing works.

Chapter-Three is an attempt to shed light on the institutional environments of financial market, practices of corporate governance, firm ownership, and the related issues. Moreover, it also focuses on the pertinent issues of the above-mentioned areas that are crucial for the study. The efficiency of the financial environment of market, governance issues, and ownership structure pattern are also highlighted in this chapter.

Chapter-Four focuses on the adopted research methods for this study and the reasons behind making such selection. This chapter also sheds lights on the operational definition of the key research variables, and conceptual framework employed to understand the relationship between family ownership and firm-level profitability.

Chapter- Five presents the empirical analysis and interpretation of results based on the research design and model developed for this study. At first, it gives an overview of descriptive statistics and correlation matrix. Then it provides a snapshot of various indicative tests along with the regression results. Finally, chapter five focuses on the tests related to endogeneity management and robustness of estimated effects.

Chapter-Six gives a summary and conclusion of the study. The conclusion is based on the research model and methodology developed for the study and the relevant empirical results and findings obtained from the study. It also includes a snapshot of the total study outcome obtained from this research.

Chapter -Two
Theoretical Development and Previous Studies

Over the years, numerous theories have been developed in the area of corporate governance, addressing the various issues that are crucial in this area. Keeping in mind the above issues, this chapter attempts to present the introductory elements of corporate governance, control mechanisms of family firms, and firm performance. This part of the study encompasses theories, a comprehensive literature review, alongside an examination of prior research undertaken in Bangladesh as well as internationally. The study of the family business (FB) and corporate governance (CG) is significant to explore as they have an influence on firm performance (FP). The terminology employed to denote family enterprises in this study will be used interchangeably and encompass "family business," "family firm," "family company," "family-owned business," "family-owned company," and "family-controlled company." Recently, extensive attention has been focused on exploring the interrelationship between FB, CG, and FP. According to Harms, H. (2014), the current body of literature reveals a lack of consensus regarding the meaning of a family company, thereby highlighting the need for a thorough investigation.

Since the 1980s, family-owned businesses have been recognized as vital and dynamic players in the global economy. It shoulders a pivotal role in the economic frameworks of both advanced and emerging nations by promoting economic development and affluence, generating job opportunities, and facilitating adaptability through entrepreneurial competencies. As reported by the U.S. Census Bureau, approximately 90% of businesses in the United States are either owned or controlled by families. This broad category

encompasses companies ranging from small family-run partnerships to major corporations on the Fortune 500 list (Inc. Newsletters, January 5, 2021)

On the basis of agency theory and resource-based views, researchers argue that family involvement may bring profits and outlays to the firms. Jensen, M.C. & Meckling, W.H. (1976) and Dalton, D. R., et al. (1998) argued that executives are not interested in the firm's long-term performance and tend to make decisions based on their preferences. As identified by Fahlenbrach, R. (2009) that the company is designated as an FB where the individual serving as Chief Executive Officer (CEO) is concurrently acknowledged as the founder or co-founder of the organization. Researchers also argued that a family business represents a distinctive organizational structure wherein the formulation of policies and administrative decisions is shaped by the contribution of multiple generations of family adherents, linked through biological ties, marriage, or adoption (De Massis, A., et. al.2014).

Anderson, R. C., & Reeb, D. M. (2003) noted that a family firm validates active control when a family member holds a prominent managerial position inside the organization or serves as chief executive officer (CEO). In another study, Villalonga, B., & Amit, R. (2006) highlight that a family business is defined by three key components: (1) ownership, which signifies that a family member started the company; (2) control, which represents the family's power by holding a majority of voting rights; and (3) management, which indicates that a family member takes part in the day-to-day operations of the concern. Family control can emerge in either a quiet or an assertive manner. Milosevic, D. (2015) contends that families are driven to monitor managerial decisions related to the successful operation of firms and to mitigate agency problems when they assume the position of shareholders. Shleifer et al. (1997) stated that corporate governance is the framework that

enables the provision of financial resources to corporations by suppliers, while also protecting the returns on their investments. In 1999, the World Bank conducted a thorough analysis of this definition, differentiating between two fundamental mechanisms of CG: internal and external. Internal CG involves safeguarding shareholder interests and the operational functions enabled by the board of directors, which supervises the actions of senior management. External corporate governance aims to oversee and control managerial conduct by implementing external regulations and enforcement mechanisms. This encompasses various stakeholders, including suppliers, creditors, auditors, legal professionals, credit rating agencies, and investment banking firms.

According to Syriopoulos.T, and Tsatsaronis, M (2012), corporate governance constitutes a clearly defined framework for managing and overseeing organizations. This framework encompasses the rules, regulations, and devices established by a company's management to address the interests and potential conflicts of external stakeholders, including customers, suppliers, shareholders, society, the state, and competitors, as well as internal stakeholders, which consist of employees, managers, and executive directors.

Most of the organizations are implementing various tactics to enhance their firm performance. FP has emerged as a prominent idea in business studies and is frequently used as a study parameter in contemporary debates. In the 1980s, a company's efficiency was largely based on its ability to provide value to its customers (Porter, 1985). Early in the twenty-first century, the concept of organizational performance primarily centered on an organization's capacity and aptitude for allocating its resources in a way that yields outcomes consistent with its stated objectives, taking into account the significance of these results to its stakeholders (Peterson et al., 2003).

2.1 Theories of Corporate Governance and Family Business

This study's understanding of corporate governance, especially in family businesses, is built on a few key theories. Generally, it leans on Agency Theory and Institutional Theory. Pindado, J. et.al (2014) identified four important theories for family business research: agency theory, resource-based view, institutional theory, and stewardship theory. However, this study delves into six crucial theories that significantly impact how family firms and other business entities are governed. Theories are agency theory, stakeholder theory, stewardship theory, institutional theory, and resource dependency theory. By integrating these various theories, the study aims to provide a robust and full-bodied framework for analyzing the complex corporate governance structures of family and other business firms.

2.1.1 Agency Theory

In the year 1776, Adam Smith incisively recognized the agency problem in his inspiring book, "The Wealth of Nations." He theorized that company directors were unlikely to demonstrate an equivalent degree of diligence regarding the financial resources of others as they would with their own. This theory notably highlights the intensifying conflict between the two entities, specifically the Principal and the Agent, which may arise from asymmetric information and/or a divergence of interests (Jensen and Meckling, 1976; Le Breton-Miller and Miller, 2009).

Family enterprises frequently demonstrate a tendency to designate relatives for executive positions, thus strengthening their internal governance frameworks, while potentially neglecting the chance to involve the most competent external candidates. Berle and Means (Charkham, 1994) argued that the distinction between ownership and control provides a fundamental understanding of corporate behavior and the challenges encountered by

owners (fragmented and dispersed shareholders) who seek to exercise their rights regarding managerial decisions. This study outlines five primary categories of organizational control.

i. Control is attained through near-total ownership;

ii. Control is established via majority ownership;

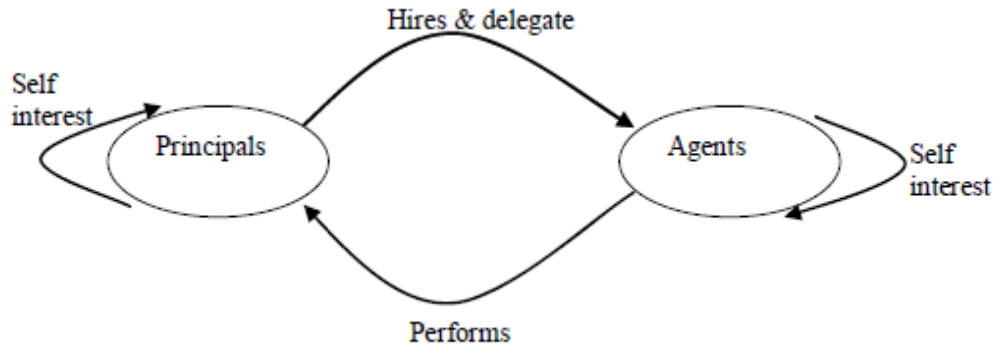
iii. Control is facilitated by a legal mechanism that does not require majority ownership;

iv. Control is exercised through minority ownership.

v. Control is derived from management authority.

Family ownership has the potential to reduce conflicts between owners and managers, as suggested by Anderson and Reeb (2003), because the family's economic well-being is closely tied to the firm's performance. This aligns with agency theory, which focuses on minimizing tensions between those who own the firm and those who manage its operations (Habbash, 2015). The importance of corporate governance procedures intended to resolve these conflicts is emphasized by proponents of agency theory. These systems often include executive incentives, which are designed to maximize the firm's long-term worth and offer cash rewards for improving shareholders' interests. Bonuses, stock options, and other rewards are often used incentive models that aim to increase shareholder value (Syriopoulos and Tsatsaronis, 2012). The figure -2.1 illustrates the significant link between the Principals and Agents:

Figure -2.1
Principal-Agent Relationship



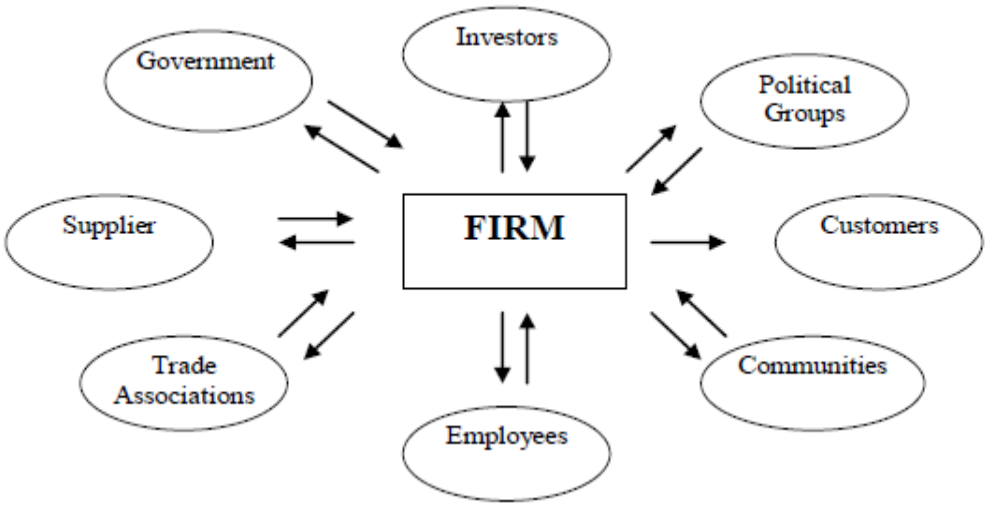
Source: www.ejbmr.org, Afshan Younas, and the author's review.

2.1.2 Stakeholder Theory

This idea aims to promote the collective happiness of many stakeholders within an organization by balancing their interests. A wide range of organizations are considered stakeholders, such as shareholders, suppliers, consumers, workers, lenders, local nonprofits, government agencies, and other interest groups. According to Al Mamun et al. (2013), a stakeholder is any person or organization that is affected by or can affect the achievement of the company's goals.

The notion emphasizes how important it is for managers to make decisions that consider the interests of all parties involved and recognize their inherent worth in the operations and strategic direction of the company. In Figure -2.2 shows how the stakeholders relate to one another:

Figure - 2.2
Firm-Stakeholder Relationship

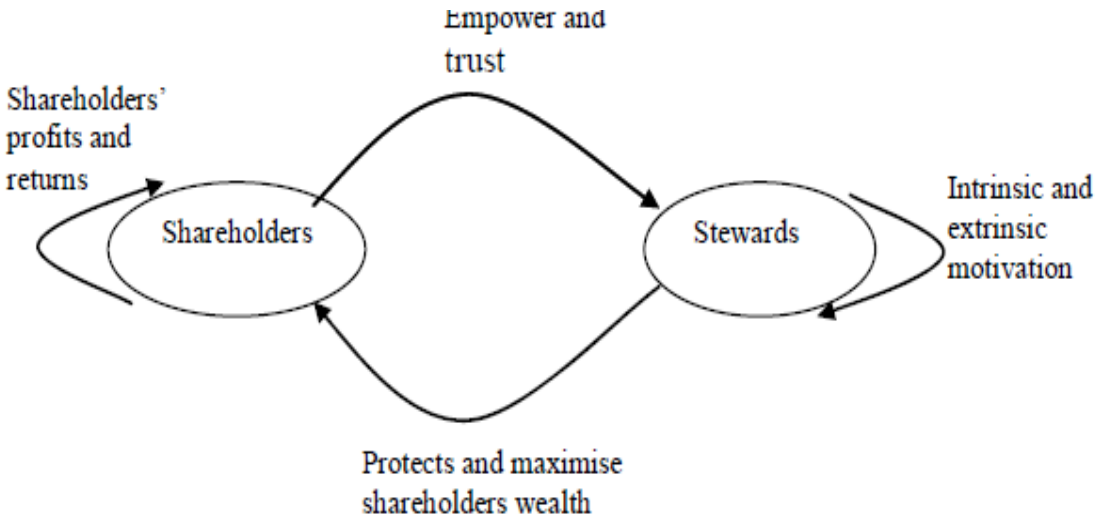


Source: www.ejbmr.org, Afshan Younas, and the author's review.

2.1.3 Stewardship Theory

This theory is grounded in the disciplines of psychology and sociology, suggesting that individuals are influenced by motivations that extend beyond mere self-interest, demonstrating a willingness to contribute to the welfare of others (Le Breton-Miller and Miller, 2009). Proponents of this theory assert that managers strive to attain elevated objectives by assuming increased responsibilities, pursuing personal fulfillment, and exhibiting intrinsic motivation. In this perspective, managers engage in selfless behavior, placing the welfare of the firm and its stakeholders above their own interests. The employees demonstrate a profound sense of ownership regarding their roles and approach their responsibilities with both diligence and perseverance. The concept is depicted in Figure- 2.3:

Figure - 2.3
Shareholder-Firm Performance



Source: www.ejbmr.org, Afshan Younas, and the author's review.

2.1.4 Institutional Theory

Institutional theory explores the underlying beliefs, actions, and regulations that grant a company its legitimacy (Su et al., 2017). This perspective views the institutional environment as a collection of legal, social, economic, and political standards that dictate how goods and services are produced, exchanged, and delivered (Yi et al., 2012). The main aim of this framework is to curb undesirable conduct. Institutions play a vital role in cutting down on information and transaction costs by reducing uncertainty and fostering an environment where businesses can interact more productively.

The U-shaped link between ownership concentration and business efficiency suggests that the largest shareholder may participate in tunneling operations (Su and He, 2012). Firm efficiency greatly increases as the major shareholder shifts from a government or government-controlled legal entity to another form of legal entity. These findings offer compelling proof that political meddling has decreased business productivity.

2.1.5 Systems Theory

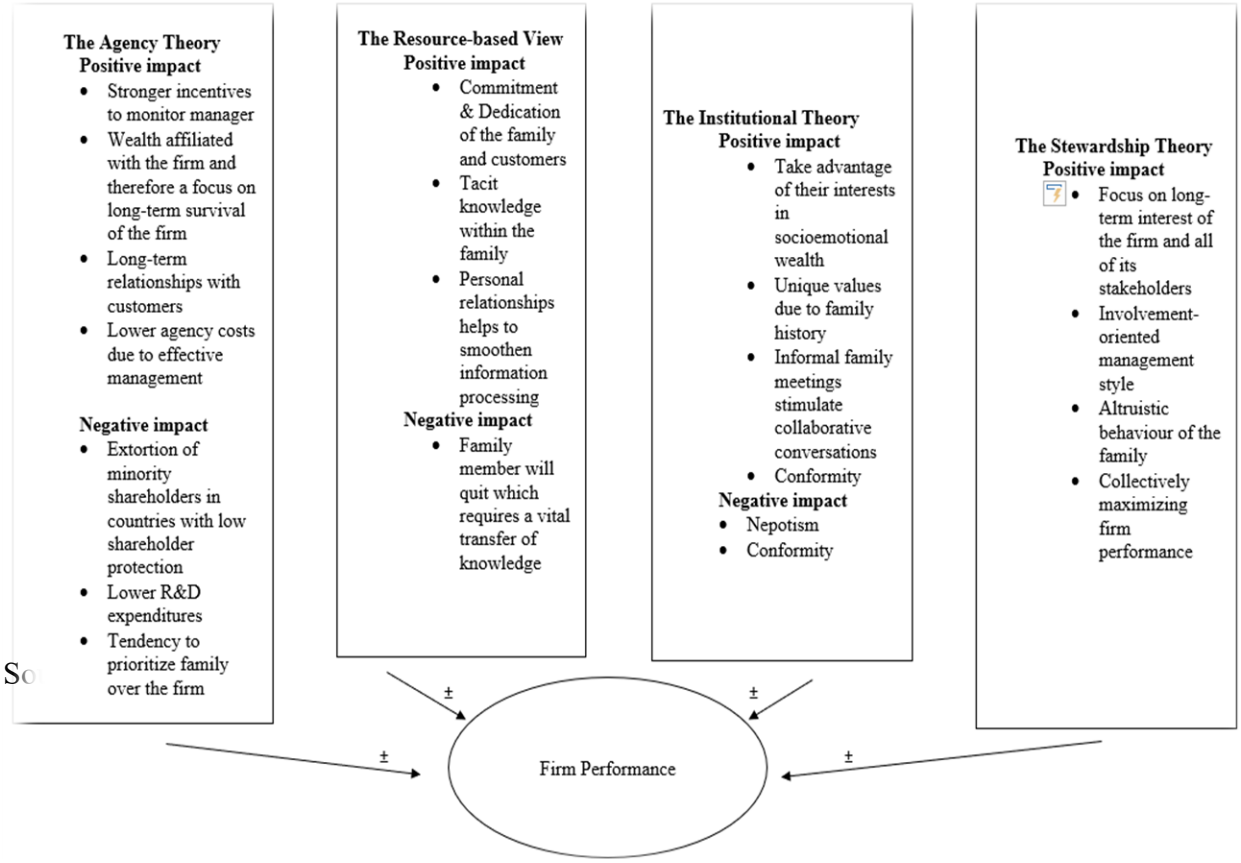
Systems theory views a family business as an interconnected system where multiple subsystems—family, business, and ownership—interact and influence each other. The theory emphasizes the complex, dynamic relationships within and between these subsystems. This perspective helps understand how changes in one area affect the whole organization. It underscores the reciprocal relationship between the family and the entity, identifying that changes in one component will invariably influence the other. This theory encourages sustainable governance by balancing family and business needs.

In the view of CG, this theory is an interdisciplinary framework that views a corporation as a complex, dynamic system made up of interdependent parts—such as shareholders, management, employees, regulators, and the broader socio-economic environment.

2.1.6 Resource Dependency Theory

Pfeffer, J. (1972) introduced the Resource Dependency Theory, which posits that organizations depend on one another to acquire essential resources, thereby establishing interconnections. Habbershon and Williams (1999) elucidated that resources can be classified into distinct categories, namely, tangible or intangible, as well as individual or organizational, and social. Research by Vo and Nguyen (2014) suggests that a company's board, when well-connected to the outside world, can improve its access to vital resources, such as financial capital, thereby strengthening its corporate governance practices. The integration of proficient management, substantial experience, and board expertise is poised to augment strategic decision-making, thereby contributing to enhanced organizational performance. Figure-2.4 presents a thorough examination of the previously articulated viewpoints concerning the influence of family ownership.

Figure -2.4
An Overview of the Theories of CG



Source: Beene (2021) and the Authors' Review

In summary, a range of CG theories has significantly influenced the development of effective practices and mechanisms within the domain of corporate governance (Htay et.al, 2013). Agency theory examines management practices aimed at safeguarding stakeholder interests, whereas institutional theory highlights the regulatory frameworks that oversee and enforce firm governance. Stewardship theory suggests that managers (or family members in management roles) are inherently motivated to act in the organization's best interest, often seeing their success tied to the firm's well-being, and Stakeholder theory focuses on considering the interests of all parties affected by the business, not just shareholders—this is often very important in family firms. No singular CG theory can be

deemed universally applicable across diverse contexts and temporal frameworks. Combining several theories may better meet business goals, guaranteeing operational and financial outcomes while striking a balance between management's interests and principles (Al Mamun et al., 2013).

2.2 An overview of Corporate Governance Issues

The scope and potential of the thought are expanded by a range of CG theories, models, philosophies, and underpinnings, ranging from a purely economic perspective ("shareholder" approach) to a more comprehensive one ("stakeholder" approach) (Aguilera and Crespi-Cladera, 2012) This concept is broadly recognized by economists and corporate leaders that the principles of corporate governance may vary considerably based on the unique characteristics and cultural context of a particular nation. The primary objective is to enhance the organization's financial position while minimizing agency conflicts.

The Federal Register, the official journal of the federal government, USA, first published the concept of "corporate governance" in 1976. In the same year, the U.S. SEC proposed a requirement for the New York Stock Exchange (NYSE) to mandate that listed corporations establish audit committees composed exclusively of independent board members, a recommendation that was subsequently enacted. On the other hand, in 1992, Sir Adrian Cadbury, chair of the Committee on the Financial Aspects of Corporate Governance in the U.K., defined corporate governance as "the system by which companies are directed and controlled."

Available literature suggests that the key principles of CG encompass accountability, transparency, fairness, responsibility, and effective risk management within the organization. Table-2.1 summarizes the theoretical history and developmental phases of

corporate governance, as outlined in the CG manual for Macedonian Joint Stock Companies (Nikoloski et al., 2016).

Table - 2.1
Overview of Corporate Governance Issues

Timeline	Corporate Event
1600s:	The East India Company introduces a Court of Directors, separating ownership and control (the U.K., the Netherlands)
1776:	Father of economics, Adam Smith in The Wealth of Nations warns of weak controls over and incentives for management (U.K.)
1931:	Berle and Means published their seminal work "The Modern Corporation and Private Property" (U.S.)
1933/34:	The Securities Act of 1933 is the first act to regulate the Securities markets, notably registration disclosure. The 1934 Act delegated responsibility for enforcement to the SEC (U.S.)
1968:	The EU adopts the first company law directive (EU)
1987:	The Treadway Commission reports on fraudulent financial reporting, confirming the role and status of audit committees, and develops a framework for internal control, or COSO, published in 1992 (U.S.).
Early 1990s:	Polly Peck (£1.3bn. in losses), BCCI and Maxwell (£480mn) business empires collapse, calling for improved corporate governance practices to protect investors (U.K.)
1991:	Maxwell Organization scandal
1992:	The Cadbury Committee publishes the first code on corporate governance; and in 1993, companies listed on U.K.'s Stock Exchanges are required to disclose governance on a "comply or explain" basis (U.K.)
1994:	Publication of the King Report (S. Africa)
1994:	Rutteman (on Internal Control and Financial Reporting), Greenbury (on Executive Remuneration), and Hampel (on Corporate Governance) reports are published (U.K.)
1995:	The Russian Law on Joint Stock Companies is adopted (Russia) Publication of the Vienot Report (France)
1995:	Barings Bank collapsed
1996:	Publication of the Peters Report (the Netherlands)
1998:	Publication of the Combined Code (U.K.)

2001:	Enron Corporation, then the seventh largest listed company in the U.S., declares bankruptcy (U.S.)
2001:	The Lamfalussy report on the Regulation of European Securities Markets (EU) is published
2002:	Publication of the German Corporate Governance Code (Germany)
2002:	Publication of the FCSM Russian Code of Corporate Conduct (Russia)
2002:	The Enron collapse and other corporate scandals lead to the Sarbanes-Oxley Act (U.S.); the Winter report on company law reform in Europe is published (EU)
2003:	The Higgs report on non-executive directors is published (U.K.)
2003:	Parmalat share price scam, January 2002 to December 2003
2004:	Eurotunnel share price scam, January 1988 to June 2004
2004:	The Parmalat scandal shakes Italy, with possible EU-wide repercussions (EU).
2004	Shell share price scam, July 2003 to June 2004
2007:	US banks had been taking excessive risks and there was growing concern about a possible collapse of the world financial system.
2010:	Congress passed the Dodd-Frank Wall Street Reform and Consumer Act in 2010 to promote financial stability in the United States.
2012	Destiny was a Bangladeshi "Multi-Level Marketing (MLM)" business that eventually laundered over BDT 51.13 billion.
2024	According to the Centre for Policy Dialogue (CPO), more than Tk 920 billion have been embezzled from the banking sector of Bangladesh through 24 major loan scams during the period of 2008-2024.

Source: Olga Mihajlova Tikvarovska, et al., (2007) and Authors' reviews in World and Financial scams of Bangladesh

2.3. Models of Corporate Governance (CG)

Previously, the Anglo-American, German, Social Control, and Japanese models have played prominent roles as key frameworks in the study and practice of CG. The structure and implementation of corporate governance systems vary significantly across countries due to differences in cultural norms, regional characteristics, and managerial approaches.

2.3.1 The Anglo-American Model

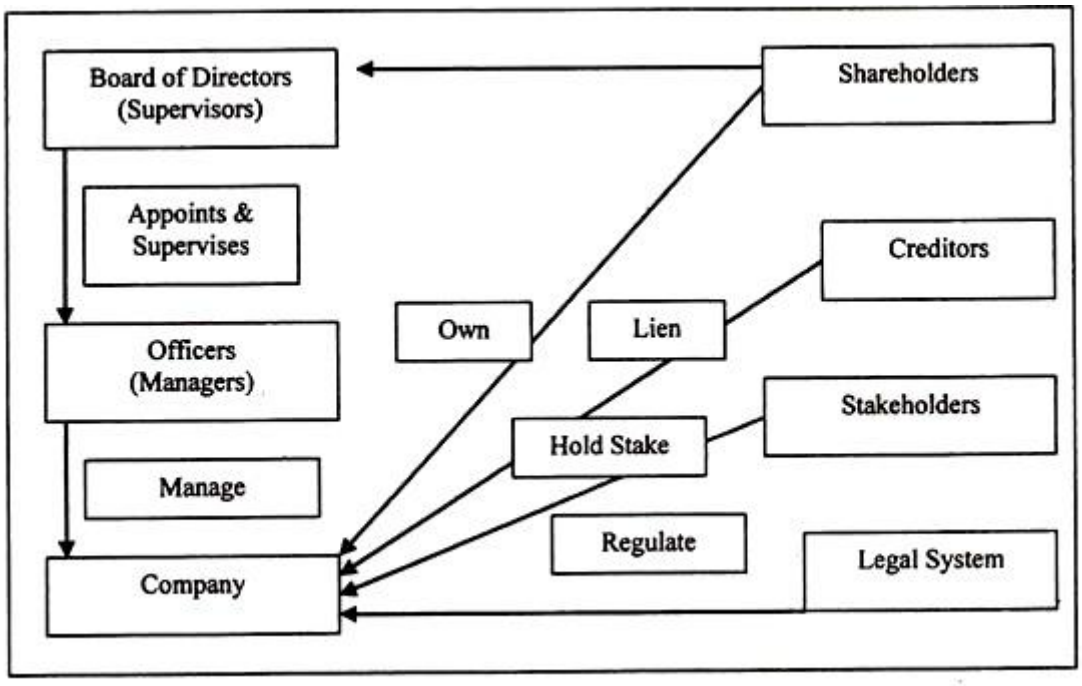
The Anglo-American model of CG places a strong emphasis on protecting and encouraging the interests of shareholders. Shareholders hold the power to elect all members of the Board of Directors (BoD), who are then responsible for supervising the company's management. This model is identified as the Anglo-Saxon framework of CG,

underpinning practices in Britain, Canada, the United States, Australia, and Commonwealth nations, including India. This approach is defined by several notable features, such as;

a) The model emphasizes shareholder interests
b) Single-tier board system combining executive and non-executive directors.;
c) Companies rely heavily on equity financing through public markets.;
d) A clear distinction is maintained between ownership and management
e) Rooted in common law, offering strong legal protection for investors.;
f) Moreover, the regulations regarding disclosure are comprehensive, and strict measures have been implemented to address insider trading.
g) Executive compensation is often linked to company performance (e.g., stock options, bonuses).

Figure - 2.5 provides a comprehensive depiction of the Anglo-American Model as it pertains to industry.

Figure - 2.5
Anglo-American Model of Industry Structure and Corporate Governance



Source: www.yourarticlelibrary.com/Kiran.N

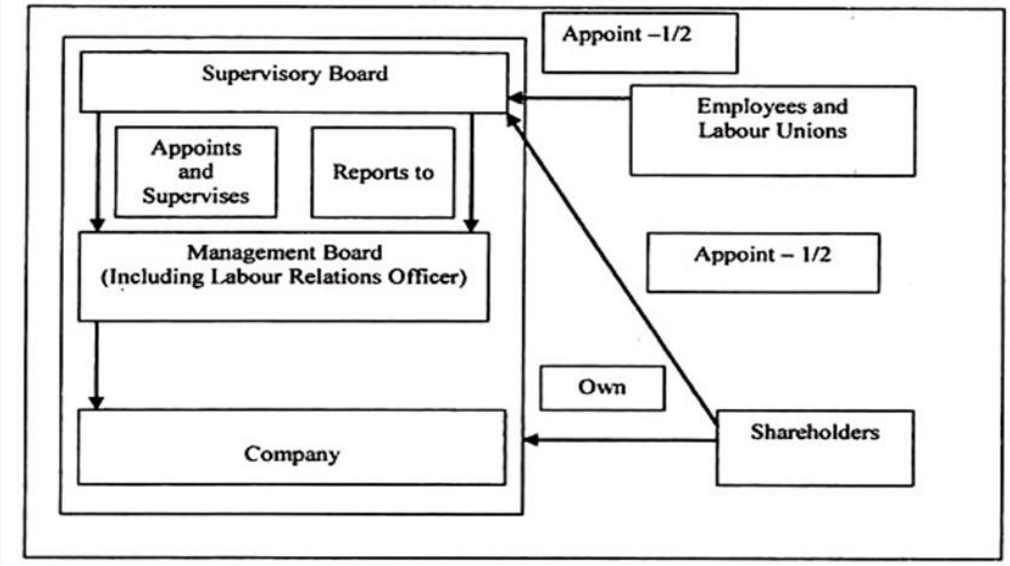
2.3.2 The German Model

This model, also known as the European Model, acknowledges employees as key stakeholders within the organization who should have the opportunity to participate in management decisions. Governance in this system is structured through two separate boards, classifying it as a two-tier board model. The two boards involved are described below;

Supervisory Board (SB): The composition of this board was determined based on shareholder preferences. Employees elected their representative to the SB, which usually makes up one-third to one-half of the total Board membership.

Management Board (MB): This board is appointed and overseen by the SB. The SB has the authority to dissolve the MB and reorganize it afterward. Figure -2.6 depicts the German model of industry and corporate governance.

Figure -2.6
German Model of Industry and Corporate Governance

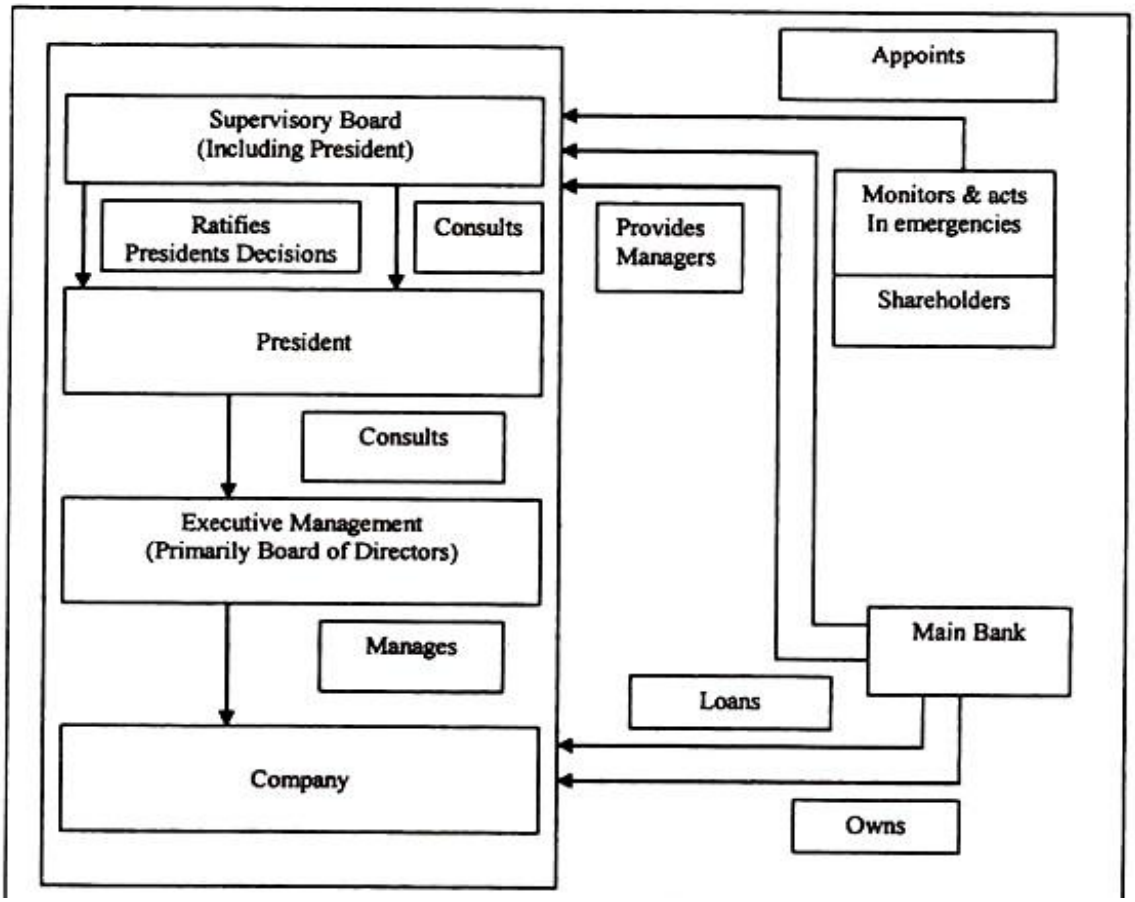


Source: www.yourarticlelibrary.com/Kiran.N

2.3.3 Japanese Model

Japanese corporations primarily obtain a substantial share of their capital through banking systems and diverse financial institutions. Considering the substantial interests maintained by banks and various institutions in enterprises, a strong partnership with the company's management is evident. Shareholders, along with other major stakeholders, jointly participate in appointing the BoD and the President. In this model, the interests of lenders are systematically aligned and recorded alongside those of the shareholders. The Figure - 2.7 presents a clear picture of the Japanese model of industry and corporate governance.

Figure -2.7
Japanese Model of Industry and Corporate Governance



Source: www.yourarticlelibrary.com/Kiran.N

2.3.4 Social Control Model:

The extensive participation of stakeholders on the BoD is examined by the Social Control Model of CG. The Stakeholder Board is composed of representatives from shareholders, employees, key customers, essential suppliers, lenders, and other relevant entities. This board aims to enhance the internal control framework of the organization.

The Anglo-Saxon model is recognized as a unitary board structure, as demonstrated by the governance approaches previously mentioned. The Anglo-American paradigm, known as the "market model" or "shareholder model," emphasizes wealth maximization for owners and has shaped Saudi Arabia's corporate governance framework within the Gulf

Cooperation Council (GCC). The German and Japanese models offer a two-tier structure that fosters favorable labor relations within the economic context (Charkham, 1994). All governance models possess intrinsic limitations, as noted by Ungureanu (Ungureanu, 2008). Their effective implementation is contingent upon the legal and cultural context of the respective country, the regulation of financial markets, and the prevailing organizational structure of enterprises.

2.3.5 Japan-German model

The Japan-German model of corporate governance, often referred to as the insider model or stakeholder-oriented model, emphasizes long-term relationships among internal stakeholders, particularly management, employees, and banks, in contrast to the shareholder-centric focus of the Anglo-American model. This model holds the following features;

a) Stakeholder-Centric Approach – Corporations are managed not only for shareholders but also for the benefit of employees, creditors (particularly banks), and other long-term stakeholders.
b) Bank-Dominated Governance – In both Japan and Germany, banks are central to corporate governance. They frequently provide funding and hold positions on company boards. Japan's main bank system and Germany's universal banking with cross-ownership reflect this structure.
c) Dual Board Structure (Germany) – German companies must have two separate boards: an executive board (responsible for daily operations) and a supervisory board (which oversees management and includes employee representatives).
d) Mutual Shareholding – Firms and banks in both nations often hold shares in each other, strengthening long-term partnerships and deterring aggressive takeovers.

e) Keiretsu and Main Bank System (Japan) – Japanese companies typically operate within keiretsu (interconnected business networks) anchored by a main bank that offers financing, monitors performance, and helps resolve corporate issues.

f) Worker Participation – Strong safeguards for employee rights, including formal board representation (notably in Germany under codetermination laws).

g) Sustainability Over Short-Term Gains – A focus on stability, job security, and steady growth rather than immediate profits.

Therefore, this theory encourages long-term investment, stable employment, and close monitoring by stakeholders.

2.4 Underpinnings of the Family Businesses

One of the most traditional and widespread business structures in the world, family companies is essential to a country's social cohesion, job creation, and economic growth. Family firms, despite their prevalence, demonstrate intricate dynamics arising from the convergence of family, ownership, and management factors. This study aims to investigate family businesses through both theoretical and empirical perspectives to provide actionable insights for scholars, policymakers, and practitioners. Attention is focused on two primary dimensions of family enterprises. The family's ownership of a portion of the equity, especially regarding the Board of Directors or Sponsors, is of significant initial importance. Furthermore, the participation of family adherents on the board merits consideration.

According to Chua et al. (1999), a family business is controlled and/or managed to formulate and pursue the enterprise's goal, which is widely used and serves as the basis of research in this field. This vision is upheld by a dominant coalition of individuals from

one family or a few families, and it has the capacity for durability across succeeding generations of those families.

This research article examines the essential characteristics, governance practices, and outcomes of family-owned and family-controlled entities. Different theses have been developed in this area as the underpinnings of the research to recognize a family firm as an enterprise that satisfies any of the following five requirements (Saito 2008; Yoshikawa and Rasheed 2010; Mehrotra et al. 2013; Koji, K. et al. 2020):

- **i.** operated by a founder;
- **ii.** governed by family members among the top 10 shareholders;
- **iii.** managed by family members in significant organizational roles (including positions such as Chairman, Vice Chairman, and Chief Executive Officer);
- **iv.** overseen by family members constituting 50% of the board of directors and;
- **v.** possessed by a privately held entity.

2.4.1 Nature and Growth of the Family Firm

The historical growth of family businesses spans from ancient civilizations to the modern global economy. Initially rooted in small-scale trades and crafts passed down through generations, family businesses played a vital role in early economies across Egypt, Rome, and medieval Europe. Some of the oldest continuously operating businesses are family-owned (e.g., Kongō Gumi, founded in 578 AD).

During the 16th to 18th centuries, influential merchant families expanded their operations through international trade and finance. The Industrial Revolution in the 19th century marked a significant turning point, as many family firms transformed into large industrial enterprises. The 20th century saw further expansion, professionalization, and the emergence of family-run conglomerates, particularly in post-war economies. In the 21st

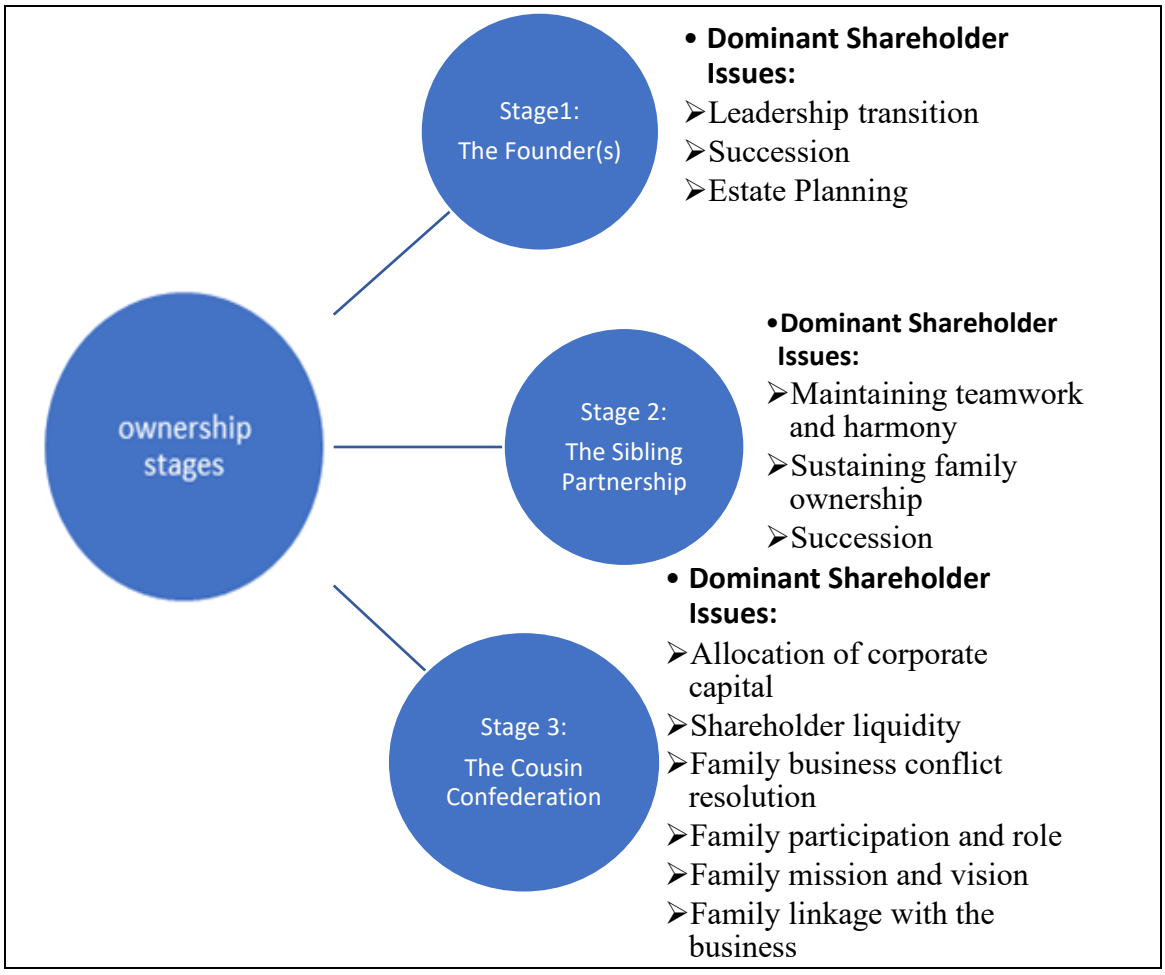
century, family businesses have demonstrated remarkable resilience, adaptability, and global reach—embracing innovation and digital transformation while maintaining their core values and long-term vision. Today, family businesses remain essential contributors to economic growth, employment, and entrepreneurship across both developed and developing nations.

Anderson and Reeb (2003) indicate that family-controlled firms constitute about one-third of publicly traded companies in the United States. Research by Porta et al. (1999) and Pindado. J.,et al (2014) reveals a significant prevalence of family-controlled public enterprises in Asia and Europe. In another study, Johansson and Malm (2020) have notably contributed to the discourse on family business ownership. Suddaby and Jaskiewicz (2020) assert that the family business represents the most significant category of business entity worldwide.

According to Astrachan J. H., & Shanker, M. C. (2003), provide a framework that divides family business into three categories: "wide," "intermediate," and "restrictive." A comprehensive definition identifies a firm as a family firm when family members support the primary corporate strategy, irrespective of their direct participation in its development. The intermediate definition of a family business includes enterprises where founders or their descendants retain control over the organization and its strategic decisions, while also participating in the implementation of these strategies. The family engages in management activities, albeit not in an exclusively singular role. The restrictive definition delineates a family entity as an organization wherein multiple generations of a family retain control and participate actively in management. The involvement of family members at different levels of management and implementation is evident.

A family business is characterized as an enterprise that is owned, managed, and operated by two or more individuals who are connected through familial relationships or marital ties. These individuals should be linked through blood relations, marital unions, or the formal frameworks of adoption. Historically, in Asia, the progression of ownership phases and management strategies observable in numerous family enterprises can be delineated into three distinct stages, as depicted in the figure-2.8.

Figure- 2.8
Progression style of Ownership stages in the family firm



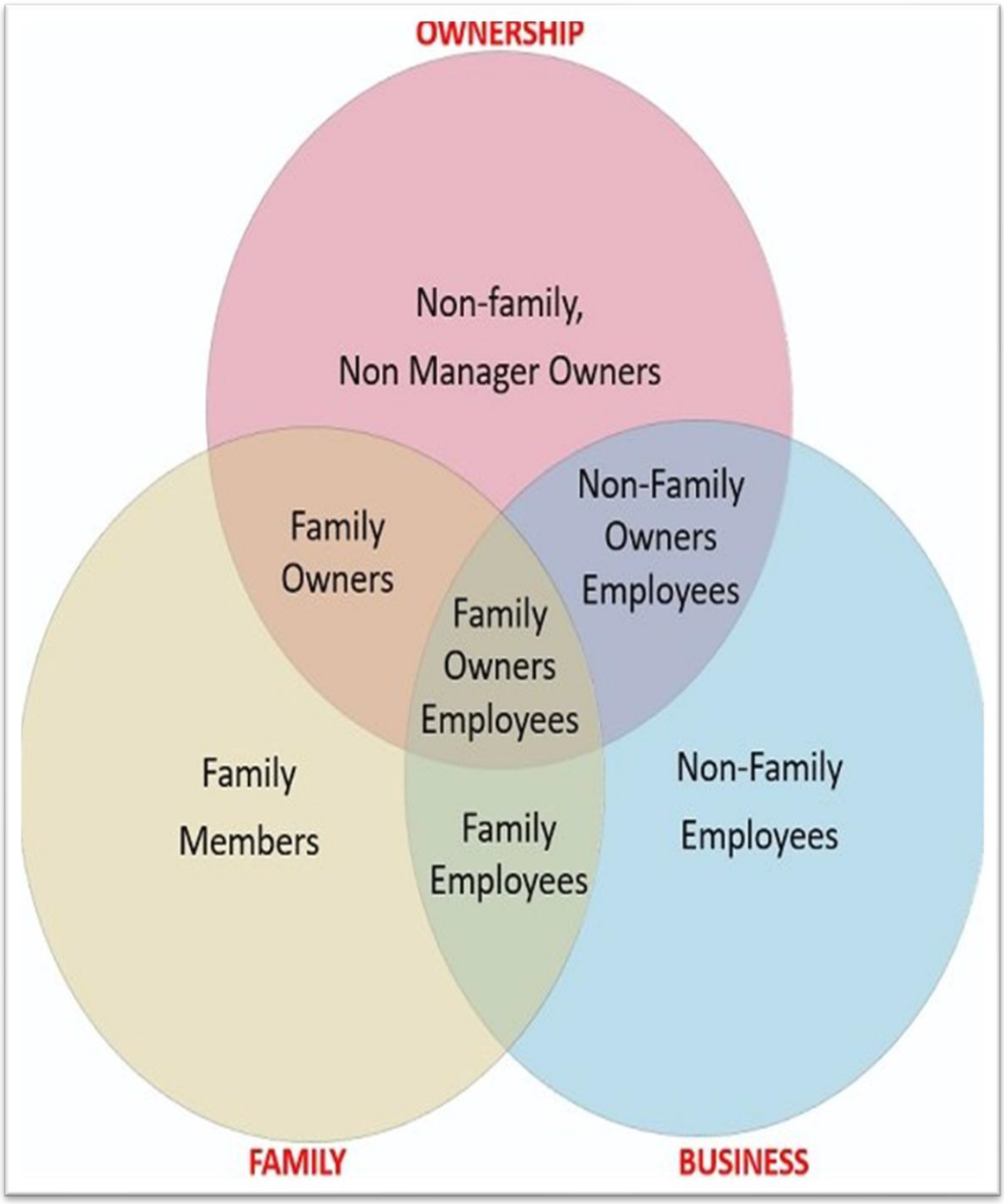
Source: Author's Review

2.4.2 Three Circles Model of the FB

A three-circle model is frequently employed to illustrate the three essential roles within a family-owned or controlled enterprise. The essential elements of this model encompass Family, Ownership, and Management. The model effectively demonstrates the potential for intersection among the functions of the components. All individuals within the familial structure, encompassing various generations, are inherently part of the Family circle; however, some members may not possess ownership interests in the family enterprise or engage in its employment. A family member expresses concern regarding social capital, especially about community status, as well as the effects on family unity and related benefits.

The Ownership circle may encompass family members, investors, and/or employee-owners. In most cases, the management circle consists of people who work for the family business but are not related. Family members may simultaneously fulfill roles as employees. An employee raises concerns about social capital, particularly about reputation, and emotional capital, which includes factors such as career advancement opportunities, bonuses, and fair performance evaluations. The concept of the family business is shown in the figure-2.9.

Figure- 2.9
Three Circles Model of the Family Firm



Source: Family Business Review (Cohen, 1992)

2.4.3 Types of Family Business

Generally, one can observe three distinct categories of family enterprises, each exhibiting unique characteristics across the globe. The subsequent things are delineated below-

a) Family-Owned Business: This category of enterprise is defined by the existence of a substantial and controlling ownership interest retained by members of a family. The stake is governed by the control and ownership of the family members.

b) Family Managed and Owned Business: In these enterprises, a single family or an individual member thereof holds the predominant interest in the business. The primary owner allows the family to establish and define the goals, policies, and methods.

c) Family-Led and Owned Business: In this category of enterprise, it is imperative that the proprietor is either a family member or closely related to one, with a minimum of one additional family member occupying a position on the company's board of directors. Consequently, family members possess the capacity to shape critical strategies, decisions, and prospective plans of the enterprise.

d) Furthermore, in the context of family enterprises, a distinction can be made between First-Generation Entrepreneurs and Second-Generation Entrepreneurs, in addition to the previously mentioned business ownership models.

First-generation entrepreneurs - are individuals who invest financial resources and undertake the associated risks and uncertainties that are intrinsic to the establishment of a new business venture. They create economic value and act as pioneers in the field of commerce. They undertake innovative methodologies and produce original concepts to cultivate a successful enterprise.

Second-Generation Entrepreneurs - The Second-Generation Entrepreneur takes on the responsibility of overseeing and managing the enterprise that has been founded by their predecessors, specifically their parents and grandparents. Individuals engage in the enterprise in capacities such as middle and upper management, and upon exhibiting their proficiency in effectively overseeing business operations, they are entrusted with the leadership of the organization.

2.4.4 Family Business around the World

Family businesses are an ancient form of business in the world that, because of their distinctive characteristics, exist of operate all over the world and boost the global economy forward. In Southeast Asia, family-run enterprises constitute 85 percent of the business landscape, while in Latin America, this figure stands at 75 percent, and in the Middle East, it accounts for 67 percent (The Business Standard, 30th November 2019). Several prominent family business organizations are globally included in the following Table- 2.2 and 2.3;

Table -2.2

Family Business in Global Context

Sl. No.	Company	Country	Industry	Family Name
1	Walmart	USA	Retail	Walton
2	Tata Group	India	Conglomerate	Tata
3	Reliance Industries	India	Conglomerate	Ambani
4	Berkshire Hathaway	USA	Conglomerate	Buffet
5	Ford	USA	Automotive	Ford
6	Dell Technologies	USA	Computer Hardware	Dell
7	BMW Group	Germany	Automotive	Quandt
8	Toyota Group	Japan	Automotive	Toyota
9	Samsung Group	South Korea	Conglomerate	Lee
10	LG	South Korea	Consumer Electronics	Koo
11	Hyundai	South Korea	Automotive	Chung

Source: Compiled by Researcher

Table -2.3
Family Business in the Bangladesh Context

Sl. No.	Company	Country	Industry	Family Name
1	Square Group	Bangladesh	Conglomerate	Square
2	Beximco Group	Bangladesh	Conglomerate	Beximco
3	City Group	Bangladesh	Consumer Goods	City
4	ACI Group	Bangladesh	Conglomerate	ACI
5	Meghna Group of Industries	Bangladesh	Conglomerate	MGI
6	Apex Group	Bangladesh	Conglomerate	Apex
7	Bashundhara Group	Bangladesh	Conglomerate	EWPD
8	A. k Khan & Company Ltd.	Bangladesh	Conglomerate	A.K. Khan
9	Abul Khair Group	Bangladesh	Conglomerate	Abul
10	S. Alom Group of Industries	Bangladesh	Conglomerate	S.Alom
11	Akij Group	Bangladesh	Conglomerate	Akij
12	Walton Industries	Bangladesh	Consumer Electronics	Walton
13	Pran-Rfl Group	Bangladesh	Conglomerate	Pran-Rfl

Source: Compiled by Researcher

2.5 Firm Performance (FP)

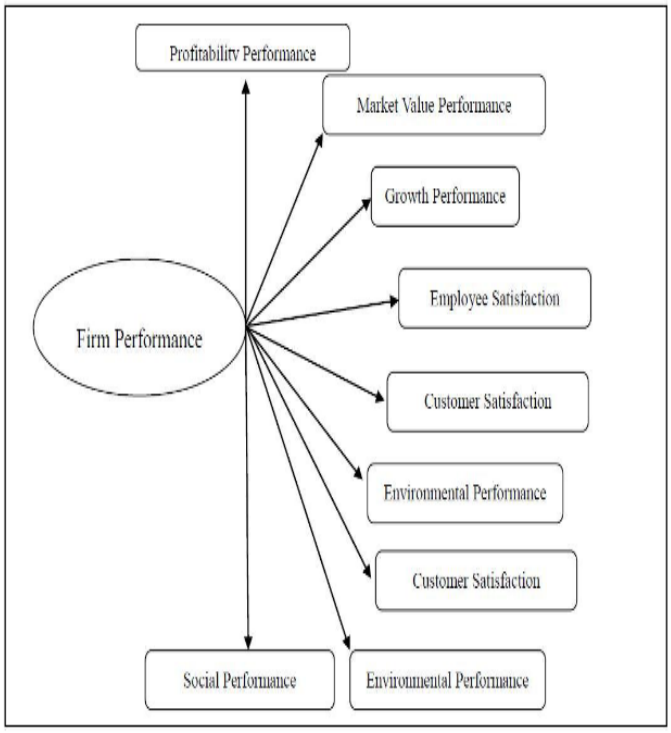
A considerable number of organizations are implementing various tactics to enhance their performance. Investors may learn a great deal about a company's overall operational and financial health from its performance. This serves as a gauge for both the strength of its

economy and the efficiency of its management techniques. FP has emerged as a prominent idea in business studies and is frequently used as a study parameter in contemporary debates. In the 1980s, a company's efficiency was based on how well it could provide value for its customers (Porter, 1985). Early in the twenty-first century, the concept of organizational performance primarily centered on an organization's capacity and aptitude for allocating its resources in a way that yields outcomes consistent with its stated objectives, taking into account the significance of these results to its stakeholders (Peterson, et.al, 2003).

Lebans and Euske (2006) suggest that organizational performance involves careful judgment and an understanding of how present activities may influence future outcomes. They also note that perceptions of performance can vary based on the assessor's perspective or background. In a separate study, Taouab, O., & Issor, Z. (2019) emphasize that assessing organizational performance is crucial for evaluating management strategies, anticipating upcoming internal and external developments, monitoring actions and outcomes against established objectives, and supporting informed decision-making.

Different study suggests that there are some key factors influencing organizational performance, including profitability, growth, market value, employee and customer satisfaction, environmental impact, sustainability assessments, corporate governance, and social responsibility. Selvam, M., et.al (2016) introduced a framework for evaluating a firm's performance, which encompasses nine key aspects. These dimensions include the company's profitability, growth trajectory, market valuation, the satisfaction of its customers and employees, its environmental auditing practices, and its corporate governance effectiveness. In the following figure -2.10, nine key determinants are depicted as the possible indicators of organizational efficiency

Figure- 2.10
List of Firm Performance Indicators.



Source: Researchers' compilation and review of M. Selvam, (2016) study.

2.5.1 Factors and Measures of Firm Performance (FP)

FP is a more focused concept than overall firm effectiveness, specifically referring to the outcomes an organization achieves. This includes both its operational and financial results. Often, when people talk about "firm performance," they're referring to financial performance, which is made up of three key elements: market value performance, growth performance, and profitability performance. Beyond these financial aspects, six other factors define a company's operational or strategic efficiency: employee satisfaction, customer satisfaction, environmental act, environmental audit presentation, CG compliance, and social perception.

A company's success is shaped by both its internal strengths and the external market environment. Theories suggest that strong corporate governance can boost value and financial performance in both advanced and emerging countries. While an organization's financial results are the main gauge of its economic outcome, a multitude of elements contribute to the complex interplay of economic efficiency and market value, such as asset quality, capital sufficiency, proceeds on capital, and price of the share (Rambo, 2012). However, it's not just corporate governance that impacts market valuation and financial performance. Other factors influencing a business's performance include technological advancements, environmental concerns, legal and social issues, macroeconomic conditions, liquidity, business size, leverage, managerial skill, sales growth, and the availability of skilled top management personnel (Bonna, 2011). To assess the accounting profitability, Return on Assets (ROA) and the market-to-book ratio of assets are identified as the key performance metrics (McConaughy et al., 1998; Filatotchev.I., et al., 2005; Perez-Gonzalez, F, 2006). Table- 2.4 presents dimensions along with their associated organizational performance indicators.

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Table 2.4
Dimensions along with their associated organizational performance indicators

Sl. No.	Dimensions	Sample Indicators
1	Profitability Performance	Return on Assets, EBTIDA Margin, Return on Investment, Net Income/Revenues, Return on Equity, Economic Value Added (EVA)
2	Market Value Performance	Earnings Per Share, Changes in Stock Price, Dividend Yield, Stock Price Volatility, Market Value Added (Market Value / Equity), Tobin's Q (Market Value / Replacement Value of Assets)
3	Growth Performance	Market-Share Growth, Asset Growth, Net Revenue Growth, Net Income Growth, Number of Employees Growth
4	Employee Satisfaction	Turn-over, Investments in Employees Development and Training, Wages and Rewards Policies, Career Plans, Organizational Climate, General Employees' Satisfaction
5	Customer Satisfaction	Mix of Products and Services, Number of Complaints, Repurchase Rate, New Customer Retention, General Customers' Satisfaction, Number of New Products/Services Launched
6	Environmental Performance	Number of Projects to Improve / Recover the Environment, Level of Energy Intensity, Use of Recyclable Materials, Recycling Level and Reuse of Residuals, Volume of Energy Consumption, Number of Environmental Lawsuits
7	Environmental Audit Performance	Environmental Policy, Environmental Audit Report and Environmental Review
8	Corporate Governance Performance	Board Size, Board Independence, Outside Directors, Insider Ownership
9	Social Performance	Employment of Minorities, Number of Social and Cultural Projects, Number of Lawsuits Filed by Employees, Customers and Regulatory Agencies

Source: Researcher's compilation and review of relevant study by Santos and Brito (2012)

2.6 Literature Review

This literature review provides an in-depth examination of both earlier and recent studies focusing on the concentration of family ownership, the role of corporate governance, and how these factors are linked to a firm's financial performance.

Family-owned businesses make up a significant portion of the global economy, as revealed in different studies and research. For example, Anderson and Reeb (2003) noted that over one-third of S&P 500 firms are family-owned. In 2018, a Global survey on Family

Business by PwC (Price Waterhouse Coopers), London, UK, highlighted that the concentration of family ownership has a strong presence, with 64% of Indonesian businesses falling into this category. The way family firms are governed plays a crucial role in their success, often differing considerably from non-family enterprises. Globally, over two-thirds of businesses are family-owned, and their importance is increasingly acknowledged (London Economics, 2002). This prevalence is further underscored by the fact that family businesses contribute 70% to 90% of global GDP, which has led to a surge in academic research on the topic in recent decades (Elstrodt and Poullet, 2020).

Research by Faccio, M., & Lang, L. H. (2002) and Maury (2006) suggests that the effect of family rights on business outcomes is closely tied to national culture, such as legal systems and social changes. In another study, Wagner, D., et al. (2015) found that family firms positively influence financial outcomes, especially in samples of large, public companies. This effect is more pronounced when "family firm" is defined by ownership. They also observed that family businesses tend to perform best when evaluated by Return on Assets (ROA), a metric less affected by a company's financial structure compared to Return on Equity (ROE).

2.6.1 Literature Review of the Study Variables

This study examines several independent variables, including family ownership structures (such as family firms and ownership concentration), CG elements (like board size, board independence, and board committees), firm-specific characteristics (company age and size), and broader macroeconomic indicators (GDP growth and inflation), and firm performance (ROA and ROE) as the dependent variables.

Ownership structure theory of Meckling, W. H., & Jensen, M. C. (1976) suggested that there is a positive association between managerial rights and firm worth. Supporting this

view, studies by McConaughey et al. (1998), Barontini, R., & Caprio, L. (2004) also find that control of the family firm is positively associated with firm efficiency, suggesting that higher levels of family ownership can enhance business outcomes. Similarly, Burkart and Shleifer (2003) and Anderson and Reeb (2003) argue that firms with greater family involvement generally perform better in the U.S.A

However, the relationship between family involvement and firm efficiency varies across studies. Differences in ownership structures and governance practices among family firms lead to mixed performance results. While researchers like Klein et al. (2002), Kapopoulos, P., & Lazaretou, S. (2007), and Pindado, J.et.al. (2015) identify a positive link, other studies—such as those by Fauzi, F., & Locke, S. (2012) and Wang, K., & Shailer, G. (2015)—report negative outcomes in developing countries.

The performance of family-owned firms during economic crises is also debated. Some findings, like those of Lins, K. V. et al. (2013), indicate that family entities were less resilient, cutting investments more than non-family firms during the Great Recession, which negatively affected their financial results. In contrast, studies by Minichilli, A., et al. (2016) and Zhou, H. et al. (2017) suggest that family firms, particularly founder-led ones, navigated the crisis more effectively due to smarter investment decisions.

Margaretha, B., & Marko, S. H. (2013) found that in Indonesia, non-family firms outperformed their family-owned counterparts, showing no significant link between family rights and profitability. Conversely, Azizi, M. et al. (2021), Muttakin et al. (2014), and Razzaque, M.R., et al. (2020) provide evidence that family ownership positively impacts the outcome of manufacturing firms in Bangladesh.

According to Dharmadasa, P. (2014) observed a positive correlation between family ownership and corporate success in Japan, but an adverse relationship in Sri Lanka. Chung

and Chan (2012) showed that managerial leadership benefits short-term profitability, particularly in family firms. Jaskiewicz et al. (2017) explored how family ownership affects the link between CEO compensation and corporate performance. Masset, P. et al. (2019) contend that the presence of both family and non-family block holders negatively impacts firm performance, and Saidat et al. (2020) found that non-family-owned enterprises outperformed their family-owned counterparts.

According to Sener, P. (2014), profitability improves with moderate family ownership and active family involvement in Turkey, though market valuation may decline when a member of the family serves as chairman. In Japan, Koji et al. (2020) demonstrated that family entities outperformed non-family entities in terms of ROA and Tobin's Q in both univariate and multivariate analyses.

Many researchers agree that CG is crucial for enhancing a firm's outcomes, with clear and favorable results (Chahine and Safieddine, 2011; Pelayo-Maciel et al., 2012. However, numerous studies have also reported neutral, mixed, indirect, or even adverse relationships (Ibrahim et al., 2010; Ahmed and Gabor, 2012; Vintila and Gherghina, 2012, 2015).

Nuryanah, S., & Islam, S. M. N. (2011) examined Indonesian businesses and found that all internal CG mechanisms significantly impact business performance, except for management ownership and the size of the board and audit committee. San Martin-Reyna et al. (2012) found that both family and non-family entities succeed in the Mexican market, noting that family enterprises use distinct CG frameworks that significantly influence their overall success.

San Martin-Reyna, J. M., & Duran-Encalada, J. A. (2012) examine the dynamics between family rights, governance, and firm success in Mexico, finding that both family and non-family entities can achieve success. However, they also emphasized that family entities

tend to adopt different governance structures compared to non-family firms, which can substantially affect their performance.

In the Malaysian context, Elvin, P., & Hamid, N. I. N. B. A. (2016) highlighted that ownership structures and governance practices have a notable impact on firm outcomes. Muntahanah et al. (2021) reported that family ownership in India tends to weaken firm performance. Aligning with Fama and Jensen's (1985) suggestion that family interests may conflict with those of other shareholders, Juanda and Jalaludin (2018) argued that family ownership can introduce specific vulnerabilities within a business.

Gharbi, S., & Othmani, H. (2022) proposed that the link between family involvement and firm efficiency is non-linear in France, meaning that excessive family control might hurt performance. Muntahanah et al. (2021) also found that CG factors influence this relationship in Indonesia. Laporšek et al. (2021) found no substantial relationship between ownership concentration and firm outcomes, noting that Slovenian state-owned firms underperformed compared to private firms. Minh Ha, N., Do, B. N., & Ngo, T. T. (2022) observed a negative association between family ownership and firm success in Vietnamese companies.

In contrast, Chahal, H., & Sharma, A. K. (2022) concluded that family ownership has a beneficial effect on firm outcomes in India, particularly in terms of profitability. Bazhair and Sulimany (2023) also found that strong oversight from family owners in Saudi Arabia, along with factors such as foreign directors, experienced CEOs, and financially knowledgeable boards, can help minimize agency costs and improve financial results. However, studies by Muntahanah et al. (2021) in Indonesia, Kim and Lee (2018) in South Korea, and Schank et al. (2017) reported that family ownership can lead to inefficient

investment decisions in Romania and Germany, which in turn may negatively affect firm outcomes.

2.6.2 Tabular Presentation of Literature Review

In this section researcher highlights the factors such as the extent of family possession, the participation of family members in board and management roles, and key governance characteristics like board size, independence, committee structures, and managerial diversity of the business entity. A concise summary of existing literature highlighting the relationship between control mechanisms of FB Ownership structures, CG variables, and various indicators of the entity's performance is shown in Table -2.5

Table 2.5.
Summary of the Relevant Literature Review

Authors	The focus of the Study & Variable	Sample, Period & Methodology	Key Findings
Gharbi, S., & Othmani, H. (2022).	Threshold effect in the relationship between family ownership and firm performance (ROA)	180 firms over the period 2009 to 2017 in France	They found that the relationship between family ownership and firm performance is non-linear.
Srivastava, A., & Bhatia, S. (2022).	This study examines how firm performance is impacted by family ownership and governance in an emerging market.	Employing a panel data set of listed companies from the National Stock Exchange (NSE) of India for the period 2011–2017.	The results of this study indicate that there is a nonlinear link between family ownership and business performance, with family ownership initially having a beneficial effect on firm performance before beginning to have a negative effect
Sanjaya, I. P. S., Brahmana, R. K., & Setiawan, W. Y. (2022).	To investigate whether family ownership as a controlling shareholder affects firm performance.	604 listed firms on the Indonesia Stock Exchange (BEI) from 2001 to 2007.	This study documented that family ownership negatively affects firm performance. It indicates that ownership by family reduces firm performance.
Minh Ha, N., Do, B. N., & Ngo, T. T. (2022).	The impact of family ownership on firm performance (ROA, Tobin's Q)	31 firms over the period 2011 to 2019, Vietnam, Used the PCSE, Multicollinearity, OLS, FEM and REM.	Vietnamese businesses' performance is negatively correlated with family ownership; as the family ownership ratio rises, firm performance falls, and it reaches its lowest point when family ownership exceeds 42.53%;
Chahal, H., & Sharma, A. K. (2020).	Impact of family ownership and management on Indian family firm performance	Using a sample of companies listed on the National Stock Exchange of India (NSE) 500 from 2011–2020	The findings of this study demonstrate that family ownership positively impacts on firm performance
Muntahanah, S., KUSUMA, H., HARJITO, D. A., & ARIFIN, Z. (2021)	The Effect of Family Ownership and Corporate Governance on Firm Performance	244 firms over the period 2010 to 2018, in Indonesia, through a multiple regression model	The results of the inferential study demonstrate that family ownership considerably lowers business performance.
Leopizzi, R., Pizzi, S., & D'Addario, F. (2021).	Relationship among Family Business, Corporate Governance, and Firm Performance	A set of multidimensional indicators used to evaluate the study through OLS on the evaluation of 343 Italian hotels of 2019 data	Family businesses outperform non-family businesses, according to the research.

Authors	The focus of the Study & Variable	Sample, Period & Methodology	Key Findings
Miah, M. S., Bhuiyan, M. R. U., & Ferdous, C. S. (2023).	Superiority of non-family firms in a developing market: Moderating role of international diversification. Used a probit regression model	Using 993 firm-year observations from 2011-2019	We find that nonfamily firms perform significantly (both operating and market-based performance) higher than counter family firms. However, we find that family firms outperform non-family firms when they have international diversification
Beene, S. (2021).	To examine whether family ownership influences firm performance.	The ORBIS database was used for 200 firms of 11 European countries, in this research.	According to the study's findings, family ownership has a good correlation with business performance.
Koji, K., Adhikary, B. K., & Tram, L. (2020).	To explore the relationship between corporate governance (Board Size, Board Independence) and financial performance (ROA, Tobin's Q.) of publicly listed family and non-family firms	1442 firms over the period 2014 to 2018, Japan	According to the study, family businesses perform better than their non-family counterparts in terms of Tobin's Q and return on assets (ROA). Moreover, they outline that family businesses managed by the founder's descendants do better than those led by the founders themselves.
Azizi, M., Bidgoli, M. S., & Taheri, A. (2021).	Ownership and management structure and performance of the family business.	Questionnaire for a survey of 32 CEOs in Tehran Province of Iran. Used (SEM) structural equation modeling	The study found that companies owned by families are associated with higher performance in financial, customer, and market share dimensions.
Kahveci, E., & Wolfs, B. (2019).	Corporate governance and the family business structure, and their effects on firm performance are investigated.	47 firms over the Borsa Istanbul (BIST) Index-2018, Turkey	The findings show a favorable correlation between family business ownership, corporate governance Rating (CGR) as well as firm
Farooque, O. A., van Zijl, T., Dunstan, K., & Karim, A. W. (2007).	Firm ownership would have no impact on performance but that performance does impact ownership	Using an unbalanced pooled sample of 660 firm years in the USA and different developing countries	This analysis supports the usual conclusions that board ownership and financial success are inversely related in the US and other wealthy nations. Additionally, it implies that ownership has no appreciable detrimental effect on performance (as measured by ROA or Tobin's Q).

Authors	The focus of the Study & Variable	Sample, Period & Methodology	Key Findings
Elvin, P., & Hamid, N. I. N. B. A. (2016).	To investigate the relationship between firms' ownership structures, corporate governance practices, and firm performance.	listed firms over the period 2010 to 2014, Bursa Malaysia	The ownership structure and corporate governance practices employed have an impact on each company's level of success.
Khan, N., & Siddiqua, P. (2015).	To find the effects of family ownership on the development of the financial sector (Firm value and CG) in Bangladesh.	85 listed firms over the period 2010 to 2012, Bangladesh.	The study documented a negative relationship between family control and firm value. Moreover, the relation is weaker between firm value and board stock ownership.
Hasan, M. S., Rahman, R. A., & Hossain, S. Z. (2014).	The study examined the existing practices of corporate governance (CG) as well as the relationship between family ownership and CG structure in Bangladesh.	68 non-financial companies listed in the Dhaka Stock Exchange (DSE) for the year 2010-11 of family ownership and CG structure	The analysis discovered that CG's current procedures did not comply with CG's criteria. Additionally, the study discovered that while family ownership was significantly boosted, it significantly decreased board independence and size.
Sener, P. (2014).	To examine the influence of family involvement on firm accounting and market performance in an emerging country context.	210 firms over the period 2007 to 2010, Turkey	The results indicate that having a family chairman and family ownership are negatively correlated with firm market value, but active family management and moderate levels of family ownership are positively correlated with profitability.
San Martin-Reyna, J. M., & Duran-Encalada, J. A. (2012).	To find the relationship among Family business, corporate governance and firm (family and nonfamily) performance. Panel data and Regression model used.	90 firms over the period 2005 to 2009 for a large sample of Mexican-listed firms.	They discover that family businesses use quite different CG structures than non-family businesses and that these differences have an effect on the success of the businesses.
Brenes, E. R., Madrigal, K., & Requena, B. (2011).	The study assesses the impact a professional board of directors has on a company's performance.	The research team selected a set of 22 Latin American family businesses.	Research results show that the greater the evaluation of board performance, the better company performance vis-à-vis competitors.

Authors	The focus of the Study & Variable	Sample, Period & Methodology	Key Findings
O'Boyle Jr, E. H., Pollack, J. M., & Rutherford, M. W. (2012).	Exploring the relation between family involvement and firms' financial performance: A meta-analysis of main and moderator effects.	Summarized and identified more than 3500 articles for potential inclusion.	Results illustrated that family involvement did not significantly impact firms' financial performance (r = .006).
Chu, W. (2011).	Family ownership and firm performance: Influence of family management, family control, and firm size.	Using proxy data of 786 public family firms in Taiwan during 2002–2007	This study found that family ownership is positively associated with firm performance. And the association between family ownership and firm performance is stronger in small- and medium-sized enterprises (SMEs) than in large companies.
Giovannini, R. (2010).	Several hypotheses are tested on the interplay between corporate governance, family ownership and performance.	Using a sample of 56 Italian IPOs issued between 1999 and 2005	Findings suggest that board independence increases with family disinvestment at IPO and also indicate that the presence of independent directors affects performance positively but with little statistical significance, while family involvement and the presence of executive committees negatively impact share performance.
Pindado, J., Requejo, I., & de la Torre, C. (2008).	To find the relationship between family ownership and the market value of the firm, GMM was used.	779 companies AMADEUS database for 2000-2006	The study results outlined that family ownership positively impacts firm value.
Malik, M., & Imam, M. O. (2007).	To investigate the pattern of ownership, mix, and ownership concentration scenario towards sponsorship in Bangladesh, the relationship between the ownership structure and firm performance, and finally the impact of ownership structure on the firm's dividend payout policy.	145 firms over the period 2000 and 2003, Bangladesh. GMM used.	They discovered that overseas holdings had a monotonic, positive, and substantial link with the firm's performance as shown by Tobin's Q and the firm's holding period returns. Additionally, we offer empirical proof that companies with concentrated ownership pay out smaller dividends than companies with high institutional ownership.

Authors	The focus of the Study & Variable	Sample, Period & Methodology	Key Findings
Kiel, G. C., & Nicholson, G. J. (2005).	Board comp. and Performance	348 firms, Australia (1996)	BS and non-executive directors are positively connected to the firm's Value
Lemmon, M. L., & Lins, K. V. (2003).	CG and firm value	800 non-fin firms, East-Asian (1997)	Firms with higher managerial control (MC) and PS have lower stock returns
Hovey, M., Li, L., & Naughton, T. (2003).	Valuation and Ownership	100 firms, China (1997-99)	No relationship between OC and firm value. Moreover it also highlights Institutional shareholding is positively linked with firm value
Thompson, P., & Hung, A. C (2002).	CG and Corporate Performance	83 firms, Singapore (2001)	* Positive relationship between ownership concentration (OC) and profitability * Both CGI and non-executive chairman are negatively associated with profitability
Gedajlovic, E., Shapiro, D. M., & Buduru, B. (2003).	Ownership and Profitability	334 firms in Japan (1986-91)	* Positive association between OC and profitability
Gugler, K. (Ed.). (2001).	CG and investment returns	19,000 firms, 61economies (1996-01)	* Managers' shareholding and cross-shareholding are negatively linked with investment performance
Yeh, Y. H., Lee, T. S., & Woidtke, T. (2001).	Family control and corporate governance: Evidence from Taiwan.	This paper analyses family control and corporate governance using a sample of Taiwanese firms.	The results suggest that family control is even more prevalent than previously suggested and that a non-linear relation exists between family control and relative firm performance.
Yurtoglu, B. B. (2000).	Ownership, control, and performance	126 Turkish non-fin firms (1998)	* OC and pyramidal shareholding (PS) are negatively linked with profitability and firm value
Alba et al. (1998)	Corporate financing and CG structure	357 firms, Thailand (1994-97)	* Firms with higher OC have lower profitability

Authors	The focus of the Study & Variable	Sample, Period & Methodology	Key Findings
Farrer, J., & Ramsay, I. (1998).	Directors' ownership and performance	180 firms, Australian (1995)	They discovered a positive correlation between directors' ownership (DS) and performance.
Agrawal, A., & Knoeber, C. R. (1996).	Performance and Control	Forbes 800 firms (1987)	* The presence of non-executive directors is negatively linked with firm value * The relationship between IO and firm value is inconclusive
Morck et al. (1988)	Management ownership and firm value	370 firms, Fortune 500 (1980)	* Non-monatomic relationship between firm value and DS * Family-managed older firms have a lower value than outsider-managed firms

Source: Compiled by the Researchers based on a review of the literature

This chapter examines a diverse array of empirical studies that highlight the intricate decision-making challenges faced by companies in their operations. A significant body of research (Maury, 2006; Le Breton-Miller, I., & Miller, D., 2009; Chu, 2011) indicates that family ownership generally enhances firm performance, with notable evidence emerging from countries like France, Belgium, Spain, and Germany. In Indonesia, Nuryanah and Islam (2011) acknowledged a strong link between most internal CG practices and firm outcomes, although board size, audit committee size, and management ownership were notable exceptions.

Several scholars, including Abels, P., & Martelli, J. (2011), Nicolaescu (2012), Rambo (2013), and Chahal and Sharma (2020), have reported a positive association between CG and FP. However, other studies present conflicting evidence, showing weak, negative, or mixed results (Pandya, 2011; Ahmed and Gabor, 2012; Peni and Vahamaa, 2012; Gharbi and Othmani, 2022) emphasized the ongoing debate over the relationship between CG and FP, highlighting discrepancies between developed and developing economies.

While international research frequently examines the relationship between organizational effectiveness and governance in family businesses, there's a significant gap in studies focusing on the effect of family rights on financial efficiency, specifically in Bangladesh. Although extensive research exists on how family business control, particularly ownership concentration, influences various factors like company outcome, value, CG style, firm age, and size across different industries, these findings often lack the depth needed for effective decision-making, potentially hindering informed policy formulation. This current study aims to significantly enrich the existing knowledge by thoroughly analyzing the correlation between family business ownership and the outcome of the companies in Bangladesh.

Chapter -Three
Institutional Ownership Structure, Corporate Governance and Family Business in Bangladesh.

Ownership structure, corporate governance and family business ownership is one of the most discussed and crucial areas for academic and empirical study. With changes in rules and regulations, business environments have attracted widespread attention from the policy makers, planners, corporate leaders, and stakeholders, and have become an important area for academic researchers. It is observed that most research and studies related to Corporate Governance (CG) with respect to family business (FB) have been conducted in advanced markets, particularly in the USA and Europe. On the other hand, research in emerging countries and developing countries is lagging behind, especially in Bangladesh. Within the Asian framework, the principal driving force behind economic development is largely attributed to family-owned enterprises (Fang et al., 2021). Ho and Chalam (2017) contend that in Southeast Asia, family enterprises represent over 75% of all firms.

The Financial Times, London, UK (April 8, 2024) reports that 90% of all enterprises globally are family-owned. Recently, the EY / University of St. Gallen Global 500 Family Business Index (2025) figures out that the 500 largest family enterprises together generate US$8.8 trillion in revenue, making them comparable to the world's third-largest economy by Gross Domestic Product (GDP). Estimates suggest that 60–80% of all businesses worldwide **are** family-owned, contributing over 70% of global GDP and employing the majority of the workforce. In this chapter, an attempt has been made to highlight the

historical backdrop and relevant issues of family business (FB), institutional environment, and different aspects of corporate governance (CG) in the following sections.

In Bangladesh, various forms of business organizations can be identified, which can be broadly categorized into four main types: (i) private ownership (including sole proprietorships and partnerships); (ii) public ownership (General People); (iii) joint ventures (JV); and (iv) multinational corporations (MNCs). The predominant form of business organization is private ownership, characterized by a significant prevalence of small enterprises, with approximately 90% classified as small and medium-sized, often exhibiting a familial orientation. The efficacy of corporate governance mechanisms is constrained by the diverse forms of concentrated ownership structures, a challenge that cannot be remedied through the implementation of legislation. Consequently, there exist challenges about the nation's implementation of sound corporate governance principles (V. Wisea, et.al, 2014). Despite often holding a minor proportion of the shares, sponsor directors or family members are responsible for overseeing, managing, and operating the majority of enterprises in Bangladesh, as noted by Uddin, S., & Choudhury, J. (2008). Directors engage in unlawful practices to advantage their familial relations, while corporations exhibit minimal accountability to the wider community. In their report, the authors also highlight concerns about annual general meetings, tendencies in dividend declaration, inadequately audited business records, and recurrently misleading financial statements.

3.1 Role of Family Business in Developing Countries

In analyzing the corporate governance issues, numerous areas have been considered by theorists and researchers to shed light on agency issues, ownership structure from different perspectives. Around the world, family businesses are the most proactive type of ownership-oriented business. During the 19th and early 20th centuries, familial enterprises were instrumental in the industrialization process; prominent instances include Ford, Rockefeller, and Rothschild, who established substantial empires in the sectors of manufacturing, finance, and transportation. The Second Industrial Revolution, spanning the 1870s to the 1890s, transformed American manufacturing through advancements in production and transportation. This era saw the rise of capital-intensive industries like chemicals, electrical products, transportation, petroleum, metals, and food and beverages, including tobacco (Chandler and Hikino, 1997).

However, as the global economy shifts away from the traditional industrial model in the twenty-first century, there's a growing understanding among policymakers, economists, and researchers about the vital contributions of family businesses and entrepreneurship to job creation and wealth generation (De Vries, M. K., et al., 2007). Prominent examples of large, globally recognized family-run enterprises include Walmart in the U.S.A., Germany's Volkswagen Group, Samsung Group of South Korea, and Tata Group of India. Many of the largest publicly traded companies in certain countries are family-owned.

In the Asia Pacific region, family groups maintain control over 85 percent of enterprises, thereby positioning family businesses as a crucial element of the Asian economy (EY Family Business Yearbook, 2014). Approximately $2 trillion in combined turnover is attributed to more than 20 percent of the leading 750 family firms worldwide, ranked by

sales, which are primarily located in Asia (Capital, F., 2020). It is a widely acknowledged fact that family groups continue to wield considerable influence over the majority of corporate entities worldwide. Extensive surveys indicate that 40 percent of companies within the S&P 500 in the United States are family-owned, while 53 percent of the 30 largest publicly listed companies across 27 industrialized nations share this characteristic (The European Family Office Report 2024). In a comprehensive analysis of 26 developing markets, it was found that family-owned enterprises represent 69 percent of the total 2,533 businesses surveyed. In numerous Asian countries, family enterprises play a crucial role in driving economic development (Fang et al., 2021).

The emergence of family businesses in Bangladesh is reported to exceed that of any other nation worldwide. As reported by The Business Standard on November 30, 2019, familial ownership constitutes 85 percent of firms in Southeast Asia, 75 percent of businesses in Latin America, and 67 percent of enterprises in the Middle East. Mamun Rashid, Managing Partner at PwC Bangladesh, stated that family-owned businesses have played a dynamic role in driving the country's progress by generating employment, building wealth, and significantly contributing to attracting foreign investment into Bangladesh.

3.2 CG System of Family Firm in Developing Countries

The CG framework deals with a critical microeconomic concern: how to ensure that managers are properly supervised and incentivized—through banks, capital markets, or other tools—to operate in the best interests of shareholders. Its primary goal is to enhance the firm's present value and reduce agency-related costs. According to Aylin, P. A., & Crowther, D. (2008),

A significant number of developing countries, including India, Pakistan, Bangladesh, Sri Lanka, the Philippines, Hong Kong, Vietnam, South Africa, and Egypt, have aimed to

implement CG standards and principles in response to the acute financial crisis and the advocacy from donor agencies. In another study, Mulili, B. M., & Wong, P. (2011) noted that the CG framework in emerging countries is correlated with innovation, stemming from shortcomings in professional management practices, human resource capabilities, investment security, and the constraints of legal and judicial systems.

Numerous developing nations have implemented formal rules and regulations to govern commercial activities, alongside legal and regulatory frameworks designed to protect the rights and obligations of investors and to specify penalties for potential infractions. The challenge arises from inadequate monitoring and enforcement of acts, rules, and regulations, leading to the adoption of inappropriate processes that hinder the effective implementation of corporate governance (Mande, B., et.al, 2014). Okpara, J. O., & Kabongo, J. D. (2010) assert that a legislative framework exists to promote effective corporate governance in developing nations; however, compliance and enforcement levels often remain insufficient or inadequate. Following established methodologies, the enforcement mechanisms present in developing countries may hold greater importance than the formal legal structures (Trivun, V. et.al, 2012).

According to Wanyama, S. et al. (2009) and Minichilli, A. et al. (2016), improving governance codes is crucial to improving business processes. In developing countries marked by widespread corruption and ineffective legal frameworks, the simple implementation of a governance code does not guarantee significant enhancement. A comprehensive reorganization of the entire system is required. Research indicates that effective code implementation requires continuous monitoring for compliance, thorough impact assessment, and exploration of potential enhancements.

This study examines different patterns deeply ingrained in family-based organizational structures, aiming to enhance knowledge of CG in the Asian context. This work extends Berglöf's Erik (1997) binary classification of CG by proposing a three-part model (Market-Based Systems or Anglo-Saxon Model, Bank/Insider-Based Systems or European/Japanese Model, State-Led/Transition Systems or emerging markets practice). Suehiro (1993, p. 378) characterizes a family business as an entity in which rights and managerial control are retained by a related group, whether a nuclear or extended family, and the earnings of the business are shared among family members. The gradual decline of family-run enterprises and the rise of "managerial firms" represent a significant trend in corporate governance theory, initially articulated by Berle and Means (1932) and subsequently elaborated by Chandler Jr, A. D. (1977), Ganguli, S.K., and Agrawal, S. (2009). Abdullah, F., et.al, 2011, Van Essen, M. et.al (2015).

In developing nations, various studies have indicated a significant deficiency in compliance with appropriate CG practices. A study of 109 industrial and service firms in Jordan found a negative association between board size and outcome or return (Alabdullah, T. T. Y. et al., 2014). Similar challenges have been observed across several developing countries, including Cyprus (Krambia-Kapardis, M., & Psaros, J. 2006), Jordan (Al-Najjar, B., 2010; Alabdullah et al., 2016), and Lebanon (Chahine and Safieddine, 2011), highlighting persistent problems related to governance compliance.

Traditionally, the two main CG frameworks are recognized. The first is the Anglo-American equity or shareholder market system (EMS) framework, which prioritizes shareholders. The second model is the stakeholder or relational framework, typically found in continental Europe and Japan, and often described as a bank- or insider-led system (BLS). In this approach, financial institutions—not equity markets—are central to

monitoring corporate performance, as seen in Japan's main bank system. It's important to recognize that BLS may include either the German universal banking model or the Japanese main bank model. Nevertheless, other CG systems extend beyond the confines of both BLS and the equity market system (EMS).

In Northeast and Southeast Asia, the impact of banks and stock markets on family-controlled firms is not consistently significant. In societies where social relationships significantly impact economic behavior, CG frequently mirrors familial or kinship-based structures. These structures, originating from family-owned business models, may signify a unique governance form. Table - 3.1 offers a comparative evaluation of the Equity Market System (EMS), Bank-Led System (BLS), and Family-Based System (FBS) of corporate governance, using key criteria originally proposed by Berglöf Erik (1997).

Table - 3.1
Comparisons and contrasts among the EMS, BLS, and FBS

Standards / Criterion	Type of Corporate Governance System		
	Equity Market-Based System (EMS)	Bank-Led System (BLS)	Family-Based System (FBS)
Share of control-oriented finance	Low	High	High initially, but may vary as family groups get bank and equity financing from outside
Equity markets	Large, highly liquid	Not necessarily small but less liquid than EMS	Small, less liquid
Share of all firms listed on exchanges	Large	Not necessarily small	Usually, small
Ownership of debt and equity	Dispersed	Concentrated	Concentrated
Investor orientation	Portfolio-oriented	Control-oriented	Control-oriented for family groups
Shareholder rights	Strong	Weak	Weak for outsiders
Creditor rights	Strong	Banks vs. management; Workers may be important stakeholders as in Aoki's model of the Japanese firm	Strong for close creditors; Weak for arm's length creditors
Role of board of directors	Important	Limited, but less so than in the case of FBS	Limited
Role of hostile takeovers	Potentially important	Quite limited	Almost absent
Role of insolvency and bankruptcy*	Potentially important	Potentially important; but possible systemic crisis may postpone bankruptcies	Potentially important
Dominant agency conflict	Shareholders vs. management	Banks vs. management; Workers may be important stakeholders as in Aoki's model of the Japanese firm	Controlling vs. minority investors
Monitoring of non-financial enterprises (NFE)	-	-	Information asymmetry and agency costs rise with the growth of firms, making monitoring more costly.
Self-monitoring	-	-	Initially, self-monitoring is effective because of non-separation of owner and management. Later stages present monitoring problems as agency costs rise due to separation of owner-managers and outside financiers

Source: Review and Compilation by the Author

3.3 Growth of Family-Based Corporate Governance System (FCGS) in Bangladesh

Bangladesh's economy has experienced substantial growth and expansion, coinciding with the increasing prominence and success of family businesses nationwide. While a considerable proportion of family enterprises in Bangladesh continue to be operated by first-generation proprietors, the offerings and commodities of these businesses have evolved in parallel with the nation's economic advancement. In Bangladesh, the spectrum of family businesses varies from modest, locally operated enterprises to large conglomerates. A notable trend that has surfaced in the context of increasing globalization is the persistent growth and restructuring of these businesses to align with international standards.

A survey undertaken by PwC (PricewaterhouseCoopers) Bangladesh Family Business in 2018 revealed that 84 percent of participants indicated that their firms experienced growth during the prior fiscal year. More than half of the family businesses have experienced increases in the double digits. During the 2018 fiscal year, Bangladesh achieved a GDP growth rate of 7.86%, the highest ever recorded in the country’s economic history. This marks the third consecutive year in which the Gross Domestic Product has experienced an increase of no less than 7%. The manufacturing and construction sectors have served as the principal catalysts for economic growth, a phenomenon that has been bolstered by robust domestic demand. A mere 63% of Bangladeshi Facebook users engage with their internal resources, a figure that significantly lags behind the global average of 71%. The requisite quantity of money exceeds the amount that is available within the organization. In Bangladesh, a significant proportion of Facebook entities demonstrate a notable willingness to pursue public offerings, with eighty-five percent expressing openness to this avenue, as well as a remarkable ninety-nine percent showing interest in private equity.

This encompasses the process of engaging with specific institutions or undertaking an initial public offering (IPO) within the capital market framework. Contextualizing this within the global averages presents a compelling analytical endeavor. A mere 26% of firms utilizing Facebook globally would contemplate the prospect of going public. This stands in contrast to the 50% of Bangladeshi enterprises that would contemplate going public, alongside the 31% of Bangladeshi businesses that regard it as the most appealing option.

The PwC (PricewaterhouseCoopers, London, U.K.) Global Family Business Survey 2018 examines the priorities, attitudes, and difficulties of more than 2,900 family business owners in 53 different nations. The study focuses on how family firms are adjusting to a business environment that is changing quickly due to greater regulatory scrutiny, shifting consumer expectations, and technological advancement. The report highlighted different important issues regarding family entity, such as family-owned firms outperforming non-family firms in long-term resilience due to strong core values, trust, and commitment to legacy. 84% of respondents were confident about their business's growth in the next two years, 58% see technology as a major opportunity but struggle with implementation, 75% engage in corporate social responsibility (CSR) initiatives, aligning values with community impact for sustainability of the business, align business strategy with environmental, social and governance (ESG) principles and 70% expected the next generation to be more involved in the coming five years etc.

It is a prevalent practice among the proprietors, the Board of directors (BoD), and the senior management of a family enterprise to allocate the responsibilities for the obligations associated with CG. Family members, conversely, bear a significant responsibility in ensuring that their enterprise is managed in a manner conducive to long-term profitability and sustainability. Furthermore, alongside their responsibilities for the administration of

the business, family members are also tasked with the governance of their familial structure and the dynamics between the family and the enterprise. The establishment of a robust family governance structure at an early stage in the family's lifecycle facilitates the anticipation and resolution of potential future disagreements among family members regarding issues related to the family enterprise. Family members will have the opportunity to focus their attention on other matters of importance, including the growth of the business. Alongside their governance responsibilities, family members are required to provide an appropriate framework for the BoD and senior management of their organization.

3.4 Institutional Structure of CG in Bangladesh

After the Asian financial crisis in 1997, it became clear that the crisis's root cause was a lack of effective CG. Understanding the degree to which financial and economic progress can influence the corporate governance reform agenda poses a considerable challenge for regulators in South and East Asian nations. Consequently, regulatory authorities and political leaders in Asian nations have dedicated significant efforts to advance the development of corporate governance reform throughout the region (OECD, 1999). As a result, a significant improvement has been observed in the corporate governance framework across Asia (Jurdant, F, 2013).

In Bangladesh, CG is regulated by four key authorities responsible for establishing standards and enforcing compliance. In compliance with the Companies Act 1994, the Partnership Act 1932, and the Societies Registration Act 1860, entity registration is managed by the Office of the Registrar of Joint Stock Companies and Firms (RJSC), which is housed within the Ministry of Commerce. Under the terms of the Bank Company Act

of 1991 and the Financial Institution Act of 1993, the Bangladesh Bank (BB) oversees both banks and non-bank financial institutions (NBFIs). The Bangladesh Securities and Exchange Commission Act, 1993 created the Bangladesh Securities and Exchange Commission (BSEC), which is in charge of regulating the capital market, protecting the interests of investors, as well as developing the market. Additionally, the Ministry of Finance (MoF) oversees accounting, auditing, and financial reporting procedures through the Financial Reporting Council (FRC), an independent body established under the Financial Reporting Act of 2015.

3.5 Recent Status of the CG System in Bangladesh

This part of the study aims to assess how Bangladesh, a developing nation, has evolved its corporate governance framework. It also identifies key elements from the corporate governance code that could be integrated into future code enhancements to improve the country's investment landscape. While some academic researchers (Uddin and Hopper, 2003; Imam and Malik, 2007; Uddin, S., & Choudhury, J., 2008; Siddiqui, J., 2010; and Sobhan, A., 2016) has compared Bangladesh's governance to other regulatory frameworks, and found there's a clear gap in the literature regarding how well Bangladeshi companies comply with international governance standards, especially their adherence to the intended Code of CG.

According to Mihail, B. A., & Dumitrescu, D. (2021), firms can gain a great deal from improving corporate governance, which includes shareholder rights, disclosure quality, and openness. Developed and emerging economies have established and updated governance codes to enhance the transparency of business decisions. As the capital market regulator, BSEC initiated and amended the notification of CG

(NCGG) from a comply or explain basis (MCGG) to mandatory compliance (CGC) for the listed companies in Bangladesh. Tables -3.2 to 3.7 delineate the fundamental distinctions among the three corporate governance codes and guidelines issued by the BSEC to date.

From the noted figures it can be conclude that, the procedures governing corporate governance in Bangladesh have been subject to gradual enhancement. The predominant reform initiatives have transpired within the past decade. There exists ambiguity regarding the relationship between enhanced corporate governance practices and their correlation with improved business performance and valuation, as well as their potential influence on the economic growth of Bangladesh. In their report, the authors highlight concerns pertaining to annual general meetings, tendencies in dividend declarations, inadequately audited business records, and recurrently misleading financial statements.

Table 3.2 - 3.7
Comparative changes among the CG guidelines issued by BSEC

Codes/Conditions	NCGG, 2006	MCGG, 2012	CGC, 2018
Basis of Compliance	Comply or explain	Comply	Comply
Board Size	Between 5 and 20	Between 5 and 20	Between 5 and 20
Table No. 3.3: Independent Director			
Proportion	One-tenth (1/10th) of the BOD	One-tenth (1/5th) of the BOD	One-tenth (1/5th) of BOD
Appointment	Elected by the BOD	Nominated by BOD and approved by the shareholders in the AGM	Nominated by BOD approved by shareholders in the AG
Qualifications	No conditions mentioned as such	It outlined the persons who shall be appointed as ID	In addition, it also det the qualities of the persons
Work Experience	No conditions mentioned as such	At least 12 years of professional experience	At least 10 years professional experienc the positions mentio above
Professional Affiliation	IDs cannot be associated with any stock exchanges as shareholders, directors, executives, members, or intermediaries of stock exchanges.	Furthermore, ID is not affiliated with or an executive of any audit firms that have rendered internal control services within the previous three years.	ID shall not be director, member, intermediary of stock exchange, executive who worked for the sa company for the two years, a membe TREC, or an execu who has worked for audit firm that provi internal control servi within the last th years.
Limit on Service	No conditions mentioned as such	ID will not be serving more than three listed firms at a time	ID will not be serv more than five listed fi at a time
Maximum Tenure of Service in a Company	No conditions mentioned as such	3 years with a provision to extend the tenure for another term, i.e., 6 years maximum	Furthermore, an ID ma be reappointed six yea or three years after the conclusion of two consecutive terms.

Codes/Conditions	NCGG, 2006	MCGG, 2012	CGC, 2018
Disqualification on Eligibility	No conditions mentioned as such	ID shall not be condemned by the court for any financial or immoral acts.	ID shall not be convi either by the court for r payment of a loan gra by any financial institu or convicted on grounds of imm activities
Vacancy of Position	No conditions mentioned as such	The post of an ID should not remain vacant for more than 90 days	The post of an ID sh not remain vacant for n than 90 days
Table No. 3.4: Board Chair and MD/CEO			
CEO Duality	The positions of Chairman and CEO of a company shall preferably be held by different individuals	It is mandatory that the positions of Chairman and CEO of a company shall be held by different individuals	It is mandatory that positions of Chairman CEO of a company sha held by diffe individuals
Selection Criteria for Chairperson and CEO	The Chairman will be elected from among the directors of the company	The Chairman will be elected from among the directors of the company	The Chairman will elected from among non-executive director the company, while MD and/or CEO shall hold a similar positio another listed company the event of chairperson's absence, other board members elect one from among non-executive directors
Board Meetings	No conditions mentioned as such	No conditions mentioned as such	"The company shall con its Board meetings record the minutes of meetings as well as k required books and rec in line with the provisio the relevant Bangla Secretarial Standards (B as adopted by the Institu Chartered Secretaries Bangladesh (ICSB) in s as those standards are inconsistent with condition of this C [CGC 1(6)]

Codes/Conditions	NCGG, 2006	MCGG, 2012	CGC, 2018
Table No. 3.5: Directors' Report to Shareholders			
Preparation of Financial Statements	A declaration that the management has fairly prepared the FS, proper books of accounts have been maintained, and IAS as adopted have been followed	A declaration that the management has fairly prepared the FS, proper books of accounts have been maintained, and IAS/IFRS as adopted have been followed	A declaration that management has fa prepared the FS, pro books of accounts h been maintained, IAS/IFRS as adop have been followed
Summary of Key Operating and Financial Data	Preceding 3 years	Preceding 3 years	Preceding 5 years
Appointment or Reappointment of Directors	No conditions mentioned as such	Shall disclose a brief resume of the director, nature of expertise with prior experiences of working as a director or member of board committees	The company s disclose a brief resum the director, nature expertise with p experiences of workin a director or membe board committees
Directors' Remuneration	No conditions mentioned as such	Shall disclose remuneration to all directors including ID	Shall disc remuneration to directors including ID
Related Party Transactions	No conditions mentioned as such	A statement of all such transactions shall be disclosed	A statement of all s transactions showing amount, nature, and b of dealings shall disclosed
Deviations of Operating Results	The variance of financial performance from the previous year along with reasons	The causes for the financial performance's deviation from the prior year	The causes behind the financial performance' deviation from the pri year
Minority Shareholders' Interest	No conditions mentioned as such	No conditions mentioned as such	A statement declaring the interests of minority shareholders protected from actions taken by or favour of control shareholders

Codes/Conditions	NCGG, 2006	MCGG, 2012	CGC, 2018
Board Meetings and Minutes	Disclosure of the total number of meetings in a fiscal year and the attendance of each director	Disclosure of the total number of meetings held in a fiscal year along with individual director's attendance	In addition, the minute the meetings shall recorded as per provisions laid by BS adopted by ICSB
Additional Statements/disclosures	In case of failure to declare dividends in any form, the company should provide the reasons	In addition, additional statements by the board are to be included, such as industry outlook; segment- or product-wise performance; risk and concerns; and cost of goods sold, gross profit, and net profit margin.	Along with MCGG, t should be a state explaining how the m was generated through IPO, right issue, or means, as well as how revenues were used a plan of action for the f that is appropri justified. Additionally, t new disclosures have added: changes exceptional gain or specified related transactions, and the dealing with products fo pertinent instance a Disclosure of the number of meetings fiscal year and attendance of each direc
Code of Conduct for Chairperson, Board Members and CEO	No conditions mentioned as such	No conditions mentioned as such	NRC shall recommend and shall be posted on company website
Number of Board Sub-Committees	1, only AC	1, only AC	2, AC and NRC

Table No. 3.6: Audit Committee

Composition	At least three directors of the company including a minimum of one ID	Three or more corporate directors, together with at least one ID	At least three non-execu directors of the comp including a minimum of ID that excludes Chairperson of the board
Qualification	Only the Chairperson of the AC should have a professional qualification and experience in accounting and finance	All members of the audit committee should be "financially literate" and at least 1 (one) member shall have accounting or related financial management experience	All members of the a committee should "financially literate" an least 1 (one) member s have accounting or rel financial management o years' experience

Codes/Conditions	NCGG, 2006	MCGG, 2012	CGC, 2018
Chairperson of AC	The board should select one member of the AC as Chairman	The Chairman of the AC should be an ID	The Chairman of the should be an ID; if Chairperson of the a committee rem absent, one of members who are pre can act as a Chair for meeting.
Number of Meetings	No conditions mentioned as such	No conditions mentioned as such	At least four meetings fiscal year with provision to call emergency meeting
Meeting Quorum	No conditions mentioned as such	At least one ID shall attend the meeting	The quorum of the meeting shall constituted by presence of either t third members of committee or members, whichever higher. Howe attendance of an ID mandatory
Role of AC	No conditions mentioned as such	Specific roles outlined	Specific roles outli moreover, prior to submission of finan statements to the Bo for approval, AC s arrange a meeting v the external statu auditors for assessmen financial records
Table No. 3.7: Nomination and Remuneration Committee (NRC)			
Composition	No conditions mentioned as such	No conditions mentioned as such	At least three n executive directors of company including minimum of one ID excludes the Chairpe of the board
Qualification	No conditions mentioned as such	No conditions mentioned as such	Nominated and appoi by BOD and the board remove any membe NRC

Codes/Conditions	NCGG, 2006	MCGG, 2012	CGC, 2018
Chairperson of NRC	No conditions mentioned as such	No conditions mentioned as such	At least one meeting fiscal year with a provi to call an emerge meeting
Number of Meetings	No conditions mentioned as such	No conditions mentioned as such	The quorum of the N meeting shall constituted by the prese of either two-th members of the comm or two memb whichever is hig However, attendance o ID is mandatory
Meeting Quorum	No conditions mentioned as such	No conditions mentioned as such	Shall be an ID, and Chairperson of NRC s attend AGM
Role of NRC	No conditions mentioned as such	No conditions mentioned as such	Specific role outli among others, key r include determining qualities and independe of directors and top-l officials and desig their remuneration pack
External/Statutory Auditor	Some provisions outlined the activities of the statutory auditor	In addition, It incorporates a clause on shareholdings by any of the employees in the firm they audit as long as they are involved in auditing that company	In addition to, incorporates a clause ensuring the presence the representative statutory auditor at AGM to answer the que of the shareholders
Subsidiary Company (SC)	No conditions mentioned as such	Provisions of holding company (HC) to form the BOD will remain the same for the SC with at least one ID of the HC to be appointed in the SC; the minutes of the SC shall be presented to the BOD meeting of HC, and AC will investigate the financial statements of SC	The holding company's (HC) provisions to form the BOD will not chang for the Subsidiary Company (SC), and at least one HC ID will be assigned to the SC. The minutes of the SC will given to the HC BOD meeting, and AC will l into the SC's financial accounts.

Source: BSEC Notifications regarding CG and author review.

3.6 Institutions of Financial Environment in Bangladesh

Financial environment includes a variety of functions and authorities associated with the distribution of funds to various offices or organizations, thus enabling the achievement of their goals or the satisfaction of the wider public interest. In this context, Lall, G.S. (1976) articulated that financial direction includes all activities that enable the generation, regulation, and distribution of financial resources among diverse units, to benefit and advance the interests of the constituents within a political community.

One of the most discussed and crucial areas of the financial market is the institutional environment and settings under which funds are channelized from surplus units to deficit units under different regulatory requirements. The financial landscape of Bangladesh is influenced by regulatory authorities, banking institutions, non-bank financial entities, insurance firms, capital market organizations, microfinance institutions, and international development partners. These institutions collectively facilitate financial intermediation, promote stability, and contribute to economic growth.

3.6.1 Financial Market Structure in Bangladesh

The prime goal of the financial environment is to provide funding for consumption and investment activities undertaken by households and governmental entities. The financial ecosystem of Bangladesh encompasses a network of institutions, markets, instruments, and regulatory bodies that facilitate the flow of funds within and outside the country. It plays a pivotal role in supporting economic growth, mobilizing savings, allocating resources, and ensuring financial stability. Long-term capital ought to be procured from the capital market through the issuance of stocks and bonds. Financial market participants are

obligated to return deposits made by savers upon request, thereby offering essential short-term or working capital to facilitate the functioning of the industry.

The fiscal environment of Bangladesh is largely categorized into three main sectors and their regulators, viz, (1) The formal sector, (2) The semi-formal sector, and (3) The informal sector, which are given below;

1) The formal sector-The formal sector of the nation's financial system is comprised of two distinct sub-sectors: (a) the Financial Market and (b) the Regulators and Market Components/Institutions, including Mobile Financial Service (MFS) providers, Payment Service Providers (PSPs), and initiatives aimed at financial inclusion. This sector is fully regulated and operated under surveillance by government agencies.

2) The semi-formal sector - The semi-formal sector includes a range of Specialized Financial Institutions, such as the House Building Financial Corporation (HBFC), Palli Karma Sahayak Foundation (PKSF), Samabay Bank, and Grameen Bank. This sector is partially regulated by government agencies.

3) The informal sector -The informal sector includes private intermediaries functioning without regulatory oversight (Bangladesh Bank, 2022). The informal sector refers to the entirely unregulated Local Micro Financing System (LMFS) that facilitates lending and borrowing processes within both rural and urban regions of the country. This sector operates without formal regulation by mostly private agencies and;

4) The Regulators - The financial environment of Bangladesh is mainly governed through four important regulators, which are the Bangladesh Bank (BB), the Bangladesh Securities and Exchange Commission (BSEC), the Insurance Development and Regulatory Authority (IDRA), and the Micro-credit Regulatory Authority (MRA).

The comprehensive examination of the financial framework and ecosystem of Bangladesh, as outlined in Table - 3.8, is pertinent to the financial stability report issued by the Central Bank, the Annual Reports prepared by the BSEC, and the Annual reports of the other regulators of the financial market in Bangladesh.

Table - 3.8
Financial Market Infrastructure of Bangladesh

<table>
<tr><th colspan="2">Financial Eco-System</th><th>Financial Market Infrastructure</th><th>Institutions</th><th>Number</th><th>Regulator</th></tr>
<tr><td rowspan="6">Financial System</td><td rowspan="5">Formal sector</td><td rowspan="3">Money Market:
➢ Primary Dealer Operation
➢ Foreign Exchange-Market Operation
➢ Payment and Settlement Systems</td><td>Banks</td><td>Schedule Banks- (62)
➢ SOCBs- (06)
➢ SDBs -(03)
➢ PCBs- (43)
➢ FCBs- (09)
➢ DCB- (01)
Non-Schedule Banks- (05)</td><td rowspan="3">Bangladesh Bank (BB)</td></tr>
<tr><td>NBFIs</td><td>FC- (35)
Government-owned- (3)
Others -(32)</td></tr>
<tr><td>Others</td><td>Ads, Money changers, MFS providers, PSOs, PSPs, OPGSPs, etc.</td></tr>
<tr><td>Capital Market:
➢ Primary Market - Operation
➢ Secondary Market-Operation</td><td>Stock Exchange (DSE & CSE)
CDBL
CCPBL</td><td>Stock Exchange (02)
Market Maker –(03)
Merchant banks- (66)
Brokers -(477)
Dealers -(424)
Security Custodian - (16)
Mutual Fund Custodian - (09)
Credit Rating Companies -(08)
Fund Managers -(67)
Asset Management Companies-(58)
Trustees -Mutual Fund -(10)
Trustees -ABS -(05)
Trustees -AIF -(14)
Trustees -D. Securities -(244)
Listed Securities-(660)</td><td>Bangladesh Securities and Exchange Commission (BSEC)</td></tr>
<tr><td>Insurance Market</td><td>Insurance Companies (ICs)</td><td>IC-(62)
➢ Life IC– (18)
➢ Non-Life IC – (44)
➢ Govt. Owned- (2)
➢ Foreign IC-(01)</td><td>Insurance Development Regulatory Authority (IDRA)</td></tr>
<tr><td>Micro Credit Market</td><td>MFIs</td><td>MFIs-(731)
NGOs (BRAC, ASA, BURO, TMSS, UDDIPAN etc.)</td><td>Micro Credit Regulatory Authority (MRA)</td></tr>
<tr><td>Semi-formal Sector</td><td colspan="4">BHBFC, BSBL, ICB, PKSF, Grameen Bank, NGOs (BRAC, ASA, BURO, TMSS, UDDIPAN), Cooperatives, Credit unions, Discrete government programs, etc.</td></tr>
<tr><td colspan="6">Informal Sector -Completely unregulated, Local Micro Financing System (Lending, Borrowing processes)</td></tr>
</table>

Source: Bangladesh Bank (2024), BSEC (2024), and Author Review

3.6.2 Classification of the Financial Market in Bangladesh

The term financial market generally refers to the diverse exchanges, institutions, and organizations that facilitate the trading of financial assets and securities, including stock exchanges and commodity exchanges, as well as other intermediaries engaged in market activities. It serves as a platform—either physical or digital—where individuals and institutions can trade financial assets, securities, and financial services at relatively low transaction costs. These securities encompass a wide range of financial instruments, including stocks (equities), bonds (fixed-income securities), derivatives, and commodities like precious metals. This also includes a physical location, such as the New York Stock Exchange (NYSE), London Stock Exchange (LSE), Bombay Stock Exchange (BSE), and Dhaka Stock Exchange (DSE), or an electronic trading platform, as exemplified by National Association of Securities Dealers Automated Quotations (NASDAQ).

In the financial sector, the phrase "financial markets" is commonly utilized to refer to the markets that facilitate the acquisition of finance and capital. It is broadly classified into two parts, viz, Money market and Capital market. Both parts of the market function as an essential element of the financial market; the long-term financing activity is performed by the capital market, whereas money markets present opportunities for addressing short-term financial requirements. In Bangladesh, one can distinguish three primary categories of financial markets. The classifications encompass (i) money markets, (ii) capital markets, and (iii) foreign exchange markets (BB Retrieved, 25 April 2023), which are discussed in below;

i. **Money market** - The money market represents a financial domain in which instruments, products, and securities with maturities of less than one year are actively exchanged. The diverse array of money market instruments occupies a crucial position within the complex financial system, providing channels for short-term investment prospects and fulfilling financing needs. This market consists of banks, non-bank financial institutions, and primary dealer banks, which function as intermediaries in transactions related to treasury securities.

ii. **Capital market -** The capital market plays a key role in the procurement and divestiture of financial instruments, securities, and financial assets that possess a maturity of more than one year. The previously mentioned market instruments significantly contribute to the intricacy of the financial framework, providing opportunities for long-term investments and addressing the funding needs linked to extensive industrialization and the advancement of national infrastructure.

iii. **Forex Market -** The foreign exchange market In the quest for the liberalization of foreign exchange transactions, a multitude of procedures have been instituted since the 1990s. On the 31st of May in the year 2003, Bangladesh implemented the administration of a Floating Exchange Rate system. The establishment of the exchange rate transpires within the marketplace, shaped by the interaction of demand and supply forces for the respective currencies.

3.6.3 Components of the Financial Market in Bangladesh

The widespread and crucial financial institutions involved in Bangladesh's financial market play a vital role in the economic development of the country, which includes different types of banks, finance and leasing companies, micro financial institutions,

insurance companies, specialized financial institutions, and other types of capital market intermediaries.

In Bangladesh, there are a total of 62 scheduled banks and 5 non-scheduled banks, all of which operate under the extensive supervision and regulation of the Bangladesh Bank (BB). Within the banking sector of the nation, there exists a total of six State-owned Commercial Banks (SCBs), three Specialized Banks (SBs), forty-three Private Commercial Banks (PCBs), thirty-three Conventional PCBs, ten Islamic Shariah-based PCBs, nine Foreign Commercial Banks (FCBs), and one Digital Commercial Bank (DCB). Among the total entities, two are under state ownership, one operates as a subsidiary of a state-owned commercial banking institution, nineteen were founded through private local initiatives, and thirteen emerged from collaborative joint ventures. As of June 30, 2024, a total of 724 microfinance institutions (MFIs) are duly registered and operational under the jurisdiction of the Microcredit Regulatory Authority (MRA) in Bangladesh. Currently, 82 registered insurance companies are functioning under the jurisdiction of the Insurance Development Regulatory Authority (IDRA) in Bangladesh. Within the total of 36 entities, there are Life Insurance Companies, comprising one foreign entity and one state-owned company. Furthermore, the landscape includes 46 General Insurance Companies, of which one is a state-owned entity.

On the other hand, as of June 30, 2024, a total of 2,504 intermediaries and 7,446 authorized representatives have been duly registered and activated under the support of the BSEC in Bangladesh. Within the overall count, there exist 477 Stock-Brokers, 424 Stock-Dealers, 445 Depository Participants, 66 Merchant Banks, 58 Asset Management Companies, 16 Security Custodians, 8 Credit Rating Companies, 67 Fund Managers, 9 Custodians (Mutual Fund), 1 Depository, and 29 Trustees (Mutual Fund, Asset-Backed, and

Alternative Investment Fund). Moreover, the BSEC holds the responsibility for the oversight and monitoring of 660 listed securities across the 2 stock exchanges.

3.6.4 Regulators of the Financial Market in Bangladesh

The financial market in Bangladesh is overseen by various regulators, each possessing specific responsibilities aimed at maintaining stability, transparency, and safeguarding investors. They encompass the money market, capital market, bond market, insurance sector, and non-bank financial institutions. Among others, the Ministry of Finance (MoF) is the primary regulator and ultimate authority to ensure a strong financial market in Bangladesh. There are five main regulators currently working for the development of the financial market and the whole financial ecosystem of Bangladesh.

Firstly, the Bangladesh Bank (BB), which oversees monetary policy and banking regulation, ensures the smooth operation of the money market in Bangladesh through regulating different types of banks and non-bank financial institutions.

Secondly, the Bangladesh Securities and Exchange Commission (BSEC), responsible for capital market governance. BSEC regulates the capital market and securities industry, including stock exchanges and market intermediaries. It acts to protect the investors from fraud, insider trading, and market manipulation.

Thirdly, the Insurance Development and Regulatory Authority (IDRA) oversees the insurance sector of the country. It works to protect policyholders' interests in Bangladesh.

Fourthly, the Microcredit Regulatory Authority (MRA) regulates and supervises Micro-Finance Institutions (MFIs). It protects and promotes financial inclusion for low-income households in Bangladesh.

Lastly, the Financial Reporting Council (FRC) of Bangladesh serves as an independent regulatory agency. The FRC oversees accounting, auditing, and corporate reporting

standards in Bangladesh to ensure the accuracy, reliability, and alignment of financial statements with international best practices.

3.7 Analysis of the Overall Financial Sector's Performance in Bangladesh

This section attempts to highlight the performance of the bank and finance industry for a better insight into the financial environment of Bangladesh as a whole.

Since 1991, Bangladesh's economy has experienced a significant transformation, expanding nearly fivefold over the past thirty years. The average Gross domestic Product (GDP) growth of the country rose from 4.5% in the period 1991–1995 to 5.82% in 2023–2024. In November 2024, the inflation rate was recorded at 10.22%. The Economic Survey of 2023–2024 presents several additional key indicators: the rate of extreme poverty is 10.5%, the per capita income is USD 2,784, and the Gross Domestic Product per capita is USD 2,675. Foreign exchange reserves amount to USD 46.4 billion. Remittance inflows totaled USD 24.77 billion. Export revenues amounted to USD 37.88 billion. Import expenditures totaled USD 60.68 billion. The Dhaka Stock Exchange Broad Index (DSEX) stands at 6,150.48. For the fiscal year 2024–2025, the government projects total expenditure to be BDT 7,97,000 crore and revenue to be BDT 5,45,400 crore, with GDP estimated at BDT 50,480 billion at market prices.

In 2015, the World Bank (WB) categorized Bangladesh as a lower-middle-income country and forecasted its emergence as one of the top 24 global economies by 2030. The United Nations Committee for Development Policy (UN CDP) acknowledged Bangladesh's qualification for Least Developed Countries (LDC) graduation in 2018 and reaffirmed it in 2021, citing significant advancements in income levels, human development, and economic resilience. On March 26, 2021, Bangladesh commemorated the 50th anniversary of its independence. The country currently qualifies as a lower-middle-income economy

and is projected to transition from its designation as an LDC by 2024. The government has established significant national objectives, including attaining the Sustainable Development Goals (SDGs) by 2030 and becoming a developed nation by 2041. The World Economic League Table projects that Bangladesh will rank as the 25th largest economy globally by 2034.

3.7.1 Performance of the Bank in Bangladesh

In Bangladesh, scheduled banks are categorized into four ownership-based types: State-Owned Commercial Banks (SCBs), Specialized Banks (SBs), Private Commercial Banks (PCBs), and Foreign Commercial Banks (FCBs). As of fiscal year 2024, 61 scheduled banks and 5 non-scheduled banks were operating in the country. As of June 2024, the total number of bank branches has increased to 11,165, compared to 11,088 in the prior year.

As of June 2024, the banking sector's total assets amounted to BDT 25,412.76 billion, indicating a year-on-year growth of 9.81%. PCBs maintained dominance in the sector, representing the largest asset share at 68.84%, whereas both SCBs and FCBs saw minor declines in their respective shares. PCBs further consolidated their position in deposit mobilization, accounting for 68.25% of total deposits. SCBs and FCBs experienced slight reductions in market share, while SBs, despite their limited presence, achieved modest growth. Deposit growth of 7.77% reflects sustained public trust in the banking system, as shown in Table- 3.9.

Table-3.9
Bank Types, Numbers, and their Asset and Deposit shares.

(in billion BDT)

Bank Types	June 2023						June 2024					
	Number of Banks	Number of Branches	Total Assets	Share in Industry Assets (in Percent)	Total Deposits	Share in Industry Deposits (in Percent)	Number of Banks	Number of Branches	Total Assets	Share in Industry Assets (in Percent)	Total Deposits	Share in Industry Deposits (in Percent)
SCBs	6	3836	5600.7	24.2	4324.6	25.4	6	3846	6011.62	23.61	4496.29	24.42
SBs	3	1523	539.1	2.3	467.8	2.8	3	1543	541.50	2.32	519.69	2.82
PCBs	43	5666	15688.3	67.8	11385.7	67.1	43	5713	17527.45	68.84	12566.47	68.25
FCBs	9	63	1314.7	5.7	802.9	4.7	9	63	1332.04	5.23	830.03	4.51
Total	**61**	**11088**	**23142.8**	**100**	**16981.2**	**100**	**61**	**11165**	**25412.76**	**100.00**	**18412.48**	**100**

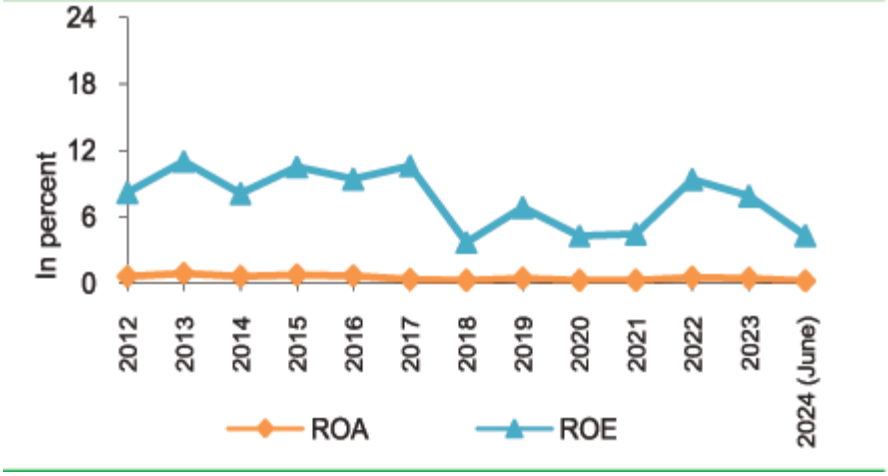
Source: Bangladesh Bank's Annual Report, 2024

3.7.2 Trends in Two key (ROA and ROE) aggregate Profitability metrics in the Banking Industry of Bangladesh

Following two important profitability metrics from 2012 to June 2024, Chart -3.1 shows "Trends in Aggregate Profitability in the Banking Industry." The industry's aggregate return on assets (ROA) consistently remained low and stable throughout the period, remaining slightly above 0% and generally below 1% in most years. This suggests low variability and restricted effectiveness in asset profit generation.

The aggregate ROE exhibited significant variability. The rate began at approximately 8% in 2012, reached a peak of about 11–12% in 2013, 2015, and 2017, and subsequently fell to below 6% in 2018. Subsequently, it rebounded to approximately 9% in 2022, but experienced a decline once more by mid-2024. ROE consistently surpassed ROA, as anticipated; however, the trend indicates unstable shareholder returns amidst persistently low asset returns.

Chart-3.1
Trends in Aggregate Profitability in the Banking Industry



Source: Bangladesh Bank's Annual Report, 2024

In short, the above chart illustrates a banking industry characterized by a stable and low return on assets (ROA), while the return on equity (ROE) exhibited fluctuations, indicating volatility in shareholder profitability.

3.7.3 Profitability Ratio by Major Types of Banks

Profitability Ratio by the major types of Banks for the period from 2015 to June 2024, highlighting two primary indicators—Return on Assets (ROA) and Return on Equity (ROE)—expressed as percentages, is shown in Table – 3.10

Table – 3.10
Profitability Ratio by Major Types of Banks

(From 2015 to the end of June 2024 in percentage)

Bank Types	ROA										ROE									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	End June 2024	2015	2016	2017	2018	2019	2020	2021	2022	2023	End June 2024
SCBs	-0.04	-0.16	0.21	-1.30	-0.61	-1.07	-0.68	-0.21	0.08	-0.37	-1.47	-6.02	3.45	-29.61	-13.68	-29.57	-21.61	5.43	2.26	-11.40
SBs	-1.15	-2.80	-0.62	-2.77	-3.31	-3.01	-3.03	-3.31	-3.53	-2.54	-5.79	-13.88	-3.07	-13.47	-17.04	-13.85	-13.21	-13.68	-14.29	-10.08
PCBs	1.00	1.03	0.89	0.79	0.77	0.70	0.62	0.59	0.47	0.48	10.75	11.09	12.01	10.98	11.16	10.22	9.34	9.38	7.66	8.75
FCBs	2.92	2.56	2.24	2.23	2.30	2.13	1.17	2.57	3.09	4.08	14.59	13.08	11.31	12.42	13.43	13.10	7.79	16.03	17.27	19.33
Total	**0.77**	**0.68**	**0.74**	**0.25**	**0.43**	**0.25**	**0.25**	**0.52**	**0.43**	**0.40**	**10.51**	**9.42**	**10.60**	**3.86**	**6.83**	**4.28**	**4.44**	**9.37**	**7.88**	**7.85**

Source: Bangladesh Bank's Annual Report, 2024

From table - 3.10, it is observed that State-Owned Commercial Banks (SCBs) exhibited predominantly negative ROA, with intermittent positive results in 2017 and 2023, subsequently declining to -0.37% in June 2024. Specialized Banks (SBS) exhibited a persistent negative ROA, decreasing from -1.15% in 2015 to -2.54% by June 2024. Private Commercial Banks (PCBs) exhibited a consistent positive return on assets (ROA), though a decline was observed from 1.00% in 2015 to 0.48% by June 2024. Foreign Commercial Banks (FCBs) attained the highest and consistently positive Return on Assets (ROA) across all categories, concluding at 4.08% in June 2024, notwithstanding some fluctuations. The banking sector's overall return on assets (ROA) exhibited a decline, decreasing from 0.77% in 2015 to 0.40% by June 2024.

It also revealed from Table - 3.10 that SCBs exhibited significant volatility in ROE, predominantly remaining negative, with only short intervals of positive performance in 2017 and 2022–2023, ultimately concluding at -11.40% in June 2024. Specialized Banks (SBs) exhibited a consistent negative trend in ROE, mirroring their ROA, with a recorded

value of -10.08% in June 2024. Private Commercial Banks (PCBs) exhibited a consistent and favorable Return on Equity (ROE), fluctuating between 7.66% and 12.01%, with a closing figure of 8.75% in June 2024. Foreign Commercial Banks (FCBs) recorded the highest positive Return on Equity (ROE), concluding at 19.33% in June 2024. The overall return on equity (ROE) for all banks remained positive, decreasing from 10.51% in 2015 to 7.85% by June 2024, exhibiting some fluctuations throughout the years. In brief, the data indicate consistently low or negative profitability for SCBs and SBs, stable yet modest performance for PCBs, and consistently strong results for FCBs.

3.7.4 Ratio of Net Non-Performing Loans (NNPLs) to Total Loans by Major types of Banks

Table -3.11 shows the Ratio of Net NPL to Net Total Loans by major types of Banks from 2014 to June 2024. State-Owned Commercial Banks (SCBs) exhibited a consistent upward trajectory, beginning at 6.1% in 2014 and increasing significantly to 18.32% by June 2024. Specialized Banks (SBs) underwent notable fluctuations. The ratio was 25.5% in 2014, subsequently decreased significantly, and stabilized at 1.14% by June 2024. Private Commercial Banks (PCBs) consistently exhibited a low ratio. The period from 2014 to 2018 exhibited a positive trend, which shifted to a negative trajectory from 2019 to 2023. By June 2024, the trend reverted to a positive rate of 0.77%. Foreign Commercial Banks (FCBs) exhibited persistently low ratios, often recording negative values throughout the majority of the period, concluding at -0.50% in June 2024. The overall ratio for all bank types commenced at 2.7% in 2014, entered negative values from 2020 to 2022, and subsequently increased to 3.68% by June 2024.

Table – 3.11
Ratio of Net NPL to Net Total Loans by Major Types of Banks

(From 2014 to the end of June 2024 in percentage)

Bank Types	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	End June 2024
SCBs	6.1	9.2	11.1	11.2	11.3	6.12	0.003	2.53	5.22	6.21	18.32
SBs	25.5	6.9	10.5	9.7	5.7	3.00	1.32	0.40	1.41	1.68	1.14
PCBs	0.8	0.6	0.1	0.2	0.4	-0.07	-1.54	-1.07	-1.31	-0.72	0.77
FCBs	-0.9	-0.2	1.9	0.7	0.7	0.19	-0.56	-0.73	-0.56	-0.41	-0.50
Total	**2.7**	**2.3**	**2.3**	**2.2**	**2.2**	**1.02**	**-1.18**	**-0.43**	**-0.08**	**0.59**	**3.68**

Source: Bangladesh Bank's Annual Report, 2024

In summary, scheduled commercial banks exhibited a significant decline in asset quality, while small banks experienced notable improvement. Private and foreign banks maintained relatively low ratios, and the overall sector ratio has recently shifted to a positive position after several years of negative performance.

3.7.5 Amount of NPLs by Major Types of Banks from 2014 to the end of June 2024.

The Amount of NPLs by major types of banks from 2014 to June 2024 is shown in Table - 3.12. State-Owned Commercial Banks (SCBs) witnessed a continuous and significant escalation in non-performing loans (NPLs), increasing from BDT 227.6 billion in 2014 to BDT 1024.84 billion by June 2024—an increase of over four times. Specialized Banks (SBs) exhibited swings; however, they maintained relative stability compared to other categories, commencing at BDT 72.6 billion in 2014 and concluding at BDT 57.57 billion in June 2024. Private Commercial Banks (PCBs) showed a consistent and significant

increase in Non-Performing Loans, escalating from BDT 184.3 billion in 2014 to BDT 999.21 billion by June 2024. Foreign Commercial Banks (FCBs) experienced growth, albeit from a lower baseline, increasing from BDT 17.1 billion in 2014 to BDT 32.29 billion by June 2024. The aggregate volume of non-performing loans (NPLs) across all banking institutions escalated significantly from BDT 501.6 billion in 2014 to BDT 2113.91 billion by June 2024, indicating a widespread increase in non-performing loans throughout the industry.

Table- 3.12
Amount of NPLs by Major Types of Banks from 2014 to June 2024

(In billion BDT)

Bank Types	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	End June 2024
SCBs	227.6	237.45	310.3	373.3	487.0	439.94	422.73	449.77	564.60	657.81	1024.84
SBs	72.6	49.69	56.8	54.3	47.9	40.59	40.62	39.91	47.09	56.69	57.57
PCBs	184.3	207.60	230.6	294.0	381.4	441.74	403.61	515.21	564.39	709.82	999.21
FCBs	17.1	18.97	24.1	21.5	22.9	21.04	20.38	27.85	30.48	32	32.29
Total	**501.6**	**513.71**	**621.8**	**743.1**	**939.2**	**943.31**	**887.34**	**1032.74**	**1206.57**	**1456.33**	**2113.91**

Source: Bangladesh Bank's Annual Report, 2024

3.7.6 Performance of the Capital Market in Bangladesh

The main bourse of the country, the Dhaka Stock Exchange (DSE), was founded in 1954 as the East Pakistan Stock Exchange Association Ltd., with formal operations commencing in 1956 in Narayanganj, subsequently relocating to Dhaka in 1958. Through an electronic trading system, DSE offers a marketplace for the purchase and sale of shares, bonds, mutual funds, and other assets. It monitors listed companies and TREC holder companies to prevent fraud, insider trading, and market manipulation. It also helps protect

investors' interests by ensuring fair dealing and transparency**.** The historic and milestone events of the DSE of Bangladesh are shown in Tables -3.13 as a timeline of the Bangladesh Stock market.

Table- 3.13
Timeline (1954-2025) of the Bangladesh Stock market.

Time line	Particulars of the Events
1954	DSE was founded as the East Pakistan Stock Exchange Association Ltd. Its formal operations commenced in 1956.
1971	After Bangladesh's independence in 1971, the market struggled, as many industries were nationalized, and private investment was minimal.
1986	CSE was planned (formally launched in 1995) to expand the trading platform.
1996	In late 1996, the first bubble burst—indices fell by more than 70%, wiping out the savings of thousands of small investors.
1998	Introduced automated trading in 1998 and took steps to improve transparency.
2010	A massive bull run driven by excess liquidity and the DSEX index crossed the **8,900-point mark with speculative trade**
2011	The market crash (Second bubble burst), Prices collapsed by more than 50% within months.
2013	Introduction of reforms, Demutualization of stock exchanges,
2017-2018	The DSEX hovered between 5,000–6,000 points, reflecting moderate stability
2020	COVID-19 Shock, DSE was closed for 66 days—the longest trading halt in its history.
2021	Strong rebound, with the DSEX reaching over **7,000 points** in September 2021.
2023	The market faced **macroeconomic headwinds**: high inflation, currency devaluation, declining forex reserves, and political instability. Indices fell sharply; turnover and IPO activity declined.
2024	**No new IPOs**, and market capitalization dropped, making Bangladesh one of Asia's worst-performing markets that year.
2025	Forecast for Possible recovery

Source: Compilation by Researcher

The performance of the Bangladesh capital market has exhibited varied trends in recent years, shaped by economic conditions, regulatory changes, and global influences. The historic and milestone events of the BSEC are shown in Tables -3.14 as at a glance view of the Bangladesh Capital Market from the regulatory perspective.

Table- 3.14
At a glance view (1993-2025) of the Bangladesh Capital Market (through BSEC).

Time line	Historical Development & Milestones of BSEC
1993	BSEC was established under the BSEC Act of 1993
1996	Market crash, prompt regulatory reforms
2000	Automation started in the Stock Exchanges
2010	The second market crash led to widespread loss of investors
2011-2012	Post-crash reforms introduce surveillance upgrades and corporate governance guidelines
2013	Introduction of the book-building method for IPOs
2017	Start a Nationwide Financial Literacy Program for Investors
2018	Strengthening Corporate Governance Code
2019	Launch SME and Venture capital regulations
2020	Introduction of the Sukuk (Islamic Bond) framework
2021	Launch of Capital Market Stabilization Fund (CMSF)
2025	Started new reforms after the July Revolution, 2025

Source: Compilation by Researcher

In brief, the capital market of Bangladesh has experienced significant expansion in scale, technological advancement, and regulatory robustness, contributing substantially to economic growth by facilitating long-term capital allocation and enhancing corporate transparency. Despite the reforms and modernization efforts by BSEC that enhance efficiency and investor confidence, challenges remain in expanding the bond market, ensuring consistent governance, and attracting a diverse array of investors for ongoing development.

3.7.7 Major Key Indicators of Performance of the Stock Market in Bangladesh

The capital market in Bangladesh struggled significantly over the decades after the second market crash in 2011. With the corrections, reforms, and macroeconomic challenges stock market of Bangladesh faces a very crucial time. In the table - 3.15, major key indicators of the country's stock market are given to sketch out the recent trend of the capital market performance.

Table-3.15
Major Key Indicator's performance of the Stock Market (DSE)

Particulars	2022	2023	2024
Listed Securities	653	654	660
Listed Companies	350	356	359
Highest Index	7,105.69	6,266.85	6,447.07
Lowest Index	5,980.51	6,231.94	4898.52
Highest Market Cap	7,746,691.11	7,848,802.74	7,884,492.96
Lowest Market Cap	4,921,130.77	7,538,542.37	6,303,492.56
Total Turnover in Tk. mn	2,343,002.12	1,410,599.31	1,485,121.35
% of Change	(33.81)	(39.80)	5.28
Total Turnover in Volume (mn)	50,105	28,806.11	47,564.08
% of Change	(50.29)	(42.51)	65.12
Equity Through IPOs in Tk. bln	14.5	7.3	8.4
Market cap to GDP in %	16.3	17.39	13.12

Source: BSEC and DSE's Annual Report, 2022-2024

The major key indicators that represent the performance of Bangladesh's capital market are compared across three years (2022, 2023, and 2024) in the above table. The Dhaka Stock Exchange Broad Index (DSEX) Index reveals the highest and lowest figures, reflecting a decline in market prices and investor sentiment. Market capitalization has declined over the past three years, indicating a reduction in investor wealth and a diminished total value of listed companies. Turnover has decreased markedly, indicating diminished trading activity and liquidity within the market. The number of Initial Public Offerings (IPOs) is low, with no new listings in 2024, indicating stagnation in primary market activity. Listed securities exhibit stability, yet lack growth.

Overall, the figure illustrates a declining and contracting capital market during the observed period, characterized by decreasing index values, diminished liquidity, and a scarcity of new listings. This indicates a lack of investor confidence, macroeconomic difficulties, and potential regulatory or structural problems impacting Bangladesh’s stock exchanges.

Chapter - Four
Research Design

Several empirical studies have been performed to understand how corporate governance and family business control affect firm performance. According to LaPorta et al. (1999), family-owned businesses are the most common organizational form in the world. These businesses' complex and diverse features offer a rich field for research and are attracting increasing scholarly interest. In the context of Bangladesh, this study examines the complex relationships that exist between corporate governance, family business ownership, and financial performance. It expands on the groundbreaking research of Anderson, R. C., & Reeb, D. M. (2003) and Miller et al. (2007), which showed that family ownership may have a significant effect on business success.

Different studies have adopted different quantitative and qualitative methods to study the association between family business control and firm outcome. This chapter of the dissertation outlines the research philosophy, design, methodology, and style adopted for the study, along with the rationale behind these choices. It details the data collection techniques, sampling framework, and significant decisions made during data management. Additionally, it addresses ethical considerations during the data collection process. In the theoretical framework section, the researcher discusses econometric challenges encountered and explains the solutions applied.

Companies are classified as family businesses if they meet any of the following criteria: (a) the founder is in charge; (b) family members hold important executive positions (CEO, chairman, vice chairman); (c) family members are among the top ten shareholders; (d) at least 50% of the Board is made up of family members; or a privately held family business retains (e) ownership. The earlier studies on Japanese family businesses (Yoshikawa, T.,

& Rasheed, A. A., 2010; Morikawa, M., 2013; Arikawa, Y. et al., 2019; Koji et al., 2020) are consistent with the parameters indicated above. Because family ownership often ensures significant influence, a company is deemed to be family-controlled if an individual or family owns at least 10% of the voting rights or if family members hold important executive roles.

Firms generally assess their success through two lenses: financial and operational performance. While Return on Equity (ROE) and Return on Assets (ROA) are dynamic metrics used for measuring financial performance, net worth reflects a firm's overall value (Sayilir, 2012). Analysts and investors widely consider ROE and ROA to be the most dependable indicators of value-based performance (Habbash, M., 2015; Al-Matari et al., 2017; Vo, D. H., & Nguyen, T. M., 2014).

As noted by Awotundum et al. (2011), CG refers to a set of internal control devices and measures that monitor an organisation's managerial activities, and specify the rights and obligations of the Board, shareholders, and management. By examining documented elements, including ownership structure, board size, board independence, and board committees, this research aims to assess the degree of CG practices by the listed firms.

4.1 Research Questions (RQ) & Development of the Hypothesis (H)

The researcher of this study has attempted to address the following RQ:

RQ1: Is the firm performance (FP) of Bangladeshi publicly traded firms related to the concentration of family ownership?

RQ2: Do corporate governance (CG) procedures and FP have a meaningful connection?

Previous research has yielded conflicting results. While Juanda, K., & Jalaludin, M (2018) found no significant effect, Anderson, R. C., & Reeb, D. M. (2003) concluded that family ownership increases company performance. Schank et al. (2017) found a favorable

association in Germany but a weak one in Romania. In this study, the following theories are examined:

H_0: The attention of family ownership does not affect financial performance.

Ha: The concentration of family ownership has a substantial effect on firm performance.

H_0: CG does not affect firm performance.

Ha: CG significantly affects firm performance.

4.2 Research Approach

According to Kothari, R. (2014), Research approaches can be broadly categorized into two segments: deductive and inductive approaches. There exist elusive differences between these two research approaches in two dimensions: how a hypothesis is tested and how the theory is formed (Saunders, M. N., 2011). The following table (Table-4.1) provides a snapshot of the differences between these two research approaches.

Table-4.1
Difference between types of research approaches

Dimensions of the research approach	Deductive approach	Inductive approach
Theory formation	Established theories work in the background. Theory formation is not the objective of the researcher.	Using the established theories, a new theory is developed.
Core objective	Testing the established theories in light of the collected data through hypothesis testing	Developing new theories or reinterpreting the established theories.
Flow of the research process	Hypothesis → Data → Results	Established theory → Generalization → New theory
Generalizability	Generalized viewpoint → specific viewpoint	Specific viewpoint → generalized viewpoint

Source: The Author's Compilation

The researcher has followed a deductive research approach whereby null hypotheses were constructed and tested. The factors of the firm's performance have already been well-identified in the empirical papers. So, the research phenomenon is well documented in the empirical literature. Since it was empirical research, the established theory was tested in the context of Bangladesh.

4.3 Research Method

Research methods are generally divided into **quantitative** and **qualitative** (Singleton & Straits, 2005). The following table (Table- 4.2) will provide a snapshot of how these two research methods are different from each other.

Table-4.2
Difference between types of research methods

Dimensions of the Research Method	Quantitative method	Qualitative method
Research input	Here, research inputs [data] are in numeric format, predominantly in scale and/or ratio form.	Here, research inputs [data] are non-numeric, predominantly in ordinal or categorical format.
Research output	In the case of the quantitative method, research outputs are mostly numeric.	In the case of qualitative research methods, research outputs are mostly non-numeric.

Source: The Author's Compilation

This study employs a quantitative research methodology, which is consistent with the positivist viewpoint. It is a multi-method quantitative study that encompasses correlation analysis, regression analysis, and other statistical methods.

4.4 Research Design

Quantitative research design aims to identify relationships among variables (Stanley, L., & Wise, S., 2010). This study examines how independent variables (e.g., family

ownership, governance attributes) influence the dependent variable (firm financial performance), while controlling for factors like firm age and size. Several popular research designs include:

a. Experiment – Experiments are often used in laboratory-based natural science-related research.

b. Survey – A very popular technique often employed in social research to collect primary data.

c. Archival research –Archive is often referred to as a data depository [Excel templates, audio, visual documents, etc.]. With the advent of the internet, data archives have become a mainstream source of secondary data (Saunders et al., 2007).

d. Case study – A case study refers to an in-depth, interactive inquiry of a phenomenon or research unit. Researchers gather primary data through case studies.

e. Ethnography – A qualitative research method where the researcher actively [physically] engages in the research process (Kothari, 2014).

This research is based on archival research. The data depository is based on an in-house constructed Excel template.

4.5 Population and Sampling

A variety of sampling methods are available, and these methods include convenience sampling, simple random sampling, stratified random sampling, and purposive sampling. The firms' listing years and the availability of data served as a reference for the sample selection in this study. This adopted sampling strategy was in line with convenience or

non-probability sampling (Berete, 2011), in which sample selection is predicated on accessibility.

Consistent with its positivist epistemological stance and archival research design, this study employs convenience sampling. The empirical investigation is based entirely on secondary data drawn from publicly available annual reports of firms listed on the Dhaka Stock Exchange, supplemented by macroeconomic indicators obtained from official regulatory authorities. In emerging economies such as Bangladesh, firm-level disclosure practices are frequently uneven, and comprehensive longitudinal data are not consistently available for all listed entities. Given the requirement to construct a balanced panel spanning ten consecutive years (2015–2024), the final sample necessarily comprises only those firms for which complete and uninterrupted financial, ownership, and corporate governance information could be obtained. Under these constraints, convenience sampling was deemed appropriate to ensure data accuracy, consistency, and completeness—key prerequisites for reliable panel data estimation (Saunders et al., 2019; Bryman, 2016).

The use of convenience sampling is further supported by the data-intensive nature of family ownership and corporate governance research, where detailed information on ownership structures and board attributes is not uniformly disclosed across firms. Methodological authorities acknowledge that when probability-based sampling is infeasible due to data limitations, non-probability approaches—including convenience sampling—are acceptable, particularly in studies relying on archival and secondary data sources (Sekaran & Bougie, 2016; Hair et al., 2019). This sampling approach is widely adopted in empirical corporate governance research, especially in developing-country

contexts where comprehensive firm-level databases are often lacking (Gujarati & Porter, 2009).

To address potential drawbacks associated with convenience sampling, the study incorporates several methodological safeguards. Firms that were newly listed or relatively young were excluded to minimize survivorship bias, and only companies with continuous operations throughout the study period were retained. Furthermore, firm fixed-effects estimators were applied to control for unobserved, time-invariant heterogeneity, while a series of diagnostic and robustness checks were conducted to account for heteroskedasticity, cross-sectional dependence, and possible endogeneity (Wooldridge, 2010; Baltagi, 2021). Collectively, these procedures strengthen the internal validity of the empirical results despite the non-probabilistic nature of the sampling method.

Although the use of convenience sampling may constrain the statistical generalizability of the findings, the study is primarily concerned with analytical inference rather than population-level extrapolation. By emphasizing data integrity and methodological rigor, the chosen sampling strategy aligns with established norms in doctoral-level empirical research and is well suited to examining the relationship between family ownership, corporate governance mechanisms, and firm performance within the Bangladeshi institutional setting.

As of July 2024, there are 360 businesses listed on the Dhaka Stock Exchange PLC (DSE). Non-probability or convenience sampling techniques were used to choose the sample for this study. Sector categorization, uniformity in accounting standards, listing dates, and the nation of origin of the businesses were the factors taken into account during the selection process. Firms from industries with few listed companies and disparate accounting

standards, which make comparing financial performance challenging, were not included in our approach. In this connection, Moradi, N.S.et al. (2012) and Caixe, D. F., & Krauter, E. (2014) stated that these sorts of industries mainly included life insurance, multinational corporations (MNCs), tanneries, ceramics, telecommunications, travel & leisure, and services, which may hinder to construct a strong, balanced panel data set.

One hundred and four (104) firms representing the Manufacturing, Pharmaceuticals, Engineering, Textiles, Information Technology, Food & Allied, Fuel & Power, Banking, Non-Bank Financial Institutions (NBFIs), and Miscellaneous sectors were included in the final sample. These firms were chosen based on convenience sampling. To reduce potential biases, newly listed and relatively young enterprises were eliminated (Bonna et al. 2011). Only companies that had been listed before 2014 and had been in continuous operation during the research period were taken into account.

Three primary criteria were taken into consideration while choosing the 2015–2024 timeframe: (a) the reliability of trade and financial data; (b) the steady implementation of corporate governance frameworks; and (c) the availability of important financial and governance-related indicators. Information on corporate governance and financial performance was gathered from reliable secondary sources and official business websites. Additionally, no modifications were made to fiscal reporting throughout the research time frame, and for all included businesses, fiscal years coincided with the calendar year. Table-4.3 shows how the study's samples were distributed throughout the various industrial sectors and categories of Bangladesh's listed companies.

Table-4.3
Industry Representation (DSE-listed Firms) of the Sample

Sl. No.	Industry Name	Number of the Firms (2013-2022)
01	Textiles	17
02	Engineering	15
03	Pharmaceuticals & Chemicals	15
04	Food & Allied	10
05	Fuel & Power	05
06	Banks	10
07	Financial Institutions	10
08	Insurance	10
09	IT	02
10	Travel & Leisure	01
11	Telecommunication	01
12	Miscellaneous	08
Toral:		**104**

Source: Author's Compilation

4.6 Data Management and Analysis

The researcher used secondary data for this research. The data was composed from annual reports of the listed firms of the Dhaka Stock Exchange. Since annual reports are available in the public domain, there is no need to seek prior permission. Data already collected for some previous research is known as secondary data. Journals, textbooks, articles, industry reports, websites, and proprietary databases are the familiar sources of secondary data (Minamikawa, M. F. et al, 2021). Macroeconomic data were downloaded from the Bangladesh Bank (BB) and Bangladesh Bureau Statistics (BBS) websites. Again, this information is also available in the public domain and freely downloadable.

The researcher followed some standard data management protocols.

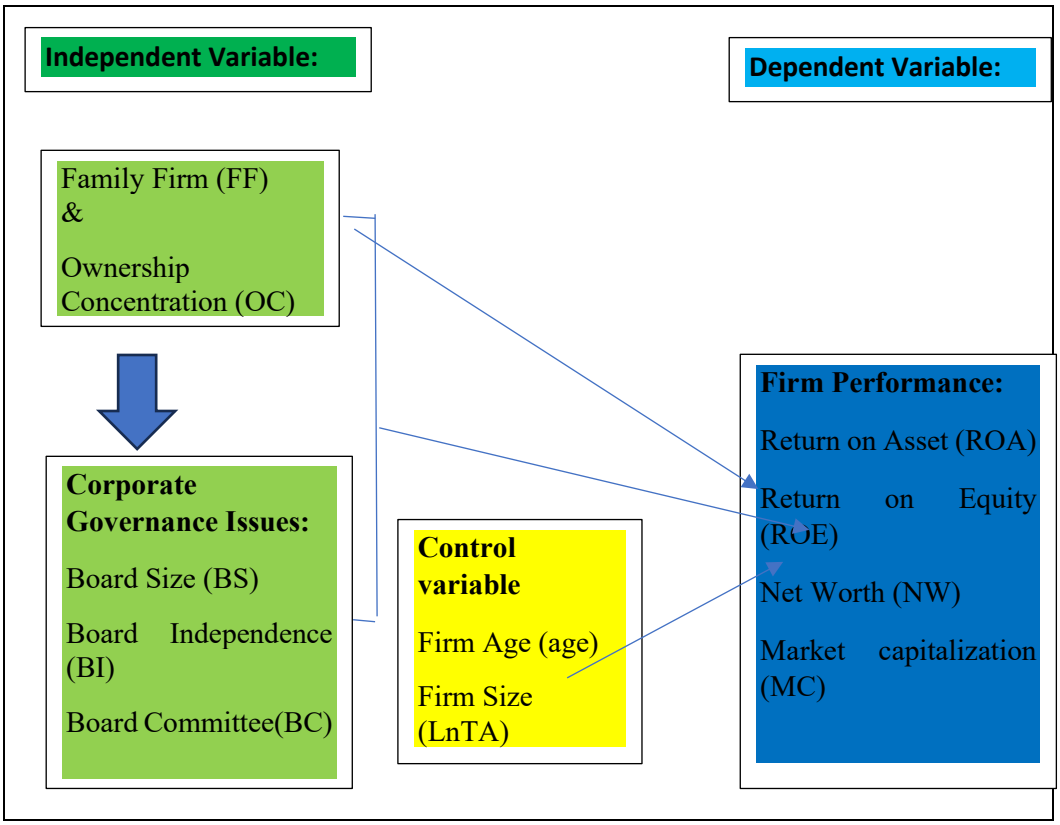
i. The researcher has deleted cells that contained missing values. The missing value command for all the variables was run simultaneously. While running the regression command over the Stata package, missing values are automatically deleted (Kothari, C. R., 2004). This standard protocol is usually followed in several empirical papers on corporate finance.

ii. Empirical studies conducted on finance and banking topics often use winsorized or trimmed data (Dougherty, M.V., 2021). Researchers generally winnow out outliers at a 5% or 1% level, or at times. In the baseline regression, the researcher has not followed any such data management protocol. While checking out the robustness of the result, the researcher winsorized the data at a 5% level.

4.7 Conceptual Framework of the Study

Investigating the connections between independent variables (like- CG devices and ownership of family business), control variables (firm-specific traits), and the dependent variable (the firm's financial performance), as represented by the conceptual model, was the primary goal of this study. Multiple regression analysis was used to investigate and evaluate these correlations in the model. The conceptual framework is shown in Figure-4.1.

Figure- 4.1
Conceptual framework of the study



Source: Author constitutes

4.8 Definition and Selection of the Study Variables

This study investigates the relationship between the control of family businesses and the financial outcome of the firm. Firm-specific characteristics are selected as control variables to measure the appropriate partial out effect of the findings. In this study, firm performance is identified as the dependent variable, and the independent variable includes the ownership concentration of family firms, CG devices, and macroeconomic variables. The meaning of the study variables is given below:

A. Dependent Variables

The dependent variable in this study is firm performance (FP), which is evaluated using three primary metrics: net worth (NW), return on equity (ROE), and return on assets

(ROA). ROA and ROE are esteemed as prominent metrics for assessing value-based performance and are commonly employed by analysts and investors (Habbash et al., 2014; Vo & Nguyen, 2014; Laporsek et al., 2021; Minh Ha, N. et al., 2022).

i. ROA is determined by the ratio of net income to the book value of total assets, as articulated by Shyu. J (2011) and Sener (2014). An elevated return on assets signifies enhanced efficacy in the utilization of resources within the organization. It is commonly referenced by various researchers as a key efficiency metric within the realm of accounting (McConaughy et al., 1998; Filatotchev et al., 2005; Perez-Gonzalez, 2006). This framework has garnered significant acceptance among scholars, including Villalonga & Amit (2006), Lam and Lee (2012).

ii. ROE denoted the proportion of net income relative to shareholders' equity. A higher ROE signifies an enhanced return on the investments made by shareholders (Sayilir. O, 2012; Dimitropoulos & Tsagkanos, 2012; Muntahanah, S, et al., 2021; Srivastava et al., 2022).

iii. Market Capitalization (MC), frequently referred to as market cap or stock market capitalization, serves as an indicator of the total market value. The equation representing market capitalization is expressed as follows: $MC = N \times P$, wherein N represents the total number of existing shares and P signifies the closing price per share.

iv. Net Worth (NW), commonly known as book value or shareholders' equity, represents the variance between a firm's total assets and its liabilities. In the context of non-public firms, net worth signifies the projected valuation that a prospective buyer would be willing to offer in the event of a sale. In publicly traded companies, net worth may be estimated through market-based metrics such as Tobin's Q and

changes in the net equity position of the firm, which is a commonly utilized measure in the field of research (Chung & Pruitt, 1994; Yermack, 1996; Hussain & Abdul Hadi, 2018).

B. Independent Variables

The independent variable is assumed to have a direct impact on the dependent variable. This research utilizes family firm status, particularly the ownership structure or concentration of family businesses, as the primary independent variable. Furthermore, the research integrates corporate governance mechanisms, encompassing both those implemented in Bangladesh and those observed internationally, as independent variables. CG refers to the framework of internal control devices, policies, and procedures that guide the direction and management of individual firms. This framework delineates the rights, roles, and responsibilities of diverse stakeholders, encompassing management, the Board of Directors, and shareholders (Awotundun et al., 2011).

i. Family Business or Firm (FF): To assess family ownership or control within the context of family businesses, we referenced prior research (Chen & Hsu, 2010; Jiang & Peng, 2011; Block, J.H., 2012) and computed the proportion of stocks possessed by family members, which encompasses both originators and their progenies. Individuals are recognized as family members based on the shared surname. A variety of indicators have been employed to encapsulate the phenomena associated with family control. Family control is assessed through two primary metrics: (1) the proportion of rights held by the family, and (2) the proportion of board members who are family members. Ultimately, a composite variable is defined such that it assumes a value of 1 if the firm meets at least one of the two aforementioned indicators. The aforementioned three criteria represent

novel metrics employed in the research conducted by Mishra et al. (2001) as well as by Khan, N., & Siddiqua, P. (2015). Moreover, several prior studies concerning ownership structure define a company as family-controlled when the largest shareholder is an individual or a family possessing a minimum of 10 percent of the company's voting rights. The rationale for employing 10 percent of the votes lies in its typical sufficiency for exerting effective control over the company (Maury, 2006; Dahya et al., 2008).

A company or firm is classified as a family firm (FF) if it meets at least one of the following **five** criteria: (a) a founder operates it; (b) it is managed by family members occupying significant roles within the organization (such as Chairman, Vice Chairman, or Chief Executive Officer); (c) it is governed by family members listed among the top 10 shareholders; (d) it is overseen by family members who constitute 50% of the Board of directors; and (e) a privately held entity owns it. The criteria were adopted from prior research conducted on Japanese family firms, as evidenced by the works of Saito (2008), Yoshikawa & Rasheed (2010), Morikawa (2013), Arikawa et al. (2017), and Sakawa & Watanabe (2018). In this investigation, the classification of the family firm/business was established according to the proportion of shares held by all family members or board directors, or as a composite variable representing the entirety of the sponsors' share of total shares.

ii. Ownership structure or concentration (OC) refers to the percentage of shareholding held by significant investors and the controlling interests, which include directorships or positions within the Board or management of affiliated companies. This instrument serves as a fundamental component of corporate governance,

encompassing the degree of equity, the characteristics of equity, and the system of checks and balances inherent in the shareholding structure (Mang'Unyi, E. E., 2011). According to Margaretha & Marko (2013), family ownership has a detrimental effect on the market valuation of the company. Various methodologies exist for quantifying the ownership structure, including (a) the proportion of shares held by all members of the Board of directors relative to total shares, (b) the proportion of shares held by institutional investors, (c) the proportion of shares owned by the top five shareholders, and (d) shares held by the five principal families (San Martin-Reyna, J. M., & Duran-Encalada, J. A., 2012). This study determined the ownership structure of a company by analyzing the proportion of shares held by all members of the Board of Directors of the total shares outstanding.

iii. Board size (BS) denotes the aggregate quantity of members constituting the Board. Agency theory underscores the significant function of board structure as an internal corporate governance mechanism influencing firm performance (Fama & Jensen, 1983), wherein board size and the inclusion of independent directors are employed as means of regulation. Lee, E. J., Chae, J., & Lee, Y. K. (2018) posited that small family ownership tends to engage in lower-risk strategies to achieve its objectives. Increased family ownership is likely to harmonize corporate interests by prioritizing value creation over the pursuit of high-risk projects. Nguyen (2012) investigated Japanese family-owned enterprises, revealing a positive correlation between family control, concentrated ownership, and corporate risk-taking behaviors.

The composition of boards is of significant importance in emerging markets, where the performance of firms is often adversely affected by inadequate corporate governance and substandard management practices (Syverson, 2011), According to the BSEC, Corporate Governance Notification No. SEC/CMRRCD/2006-158/207/Admin/80, Date – 3rd June, 2018, the composition of the Board of Directors of a company in Bangladesh must consist of shall not be less than five (5) and not more than twenty (20) members. I established index values for board size by employing an equal-weighted methodology, assigning a value of 1 point to each member of the Board.

A board comprising seven members is regarded as small, thus receiving seven points; in contrast, a larger board consisting of 10 members was allocated 10 points (Reddy, K., et al., 2010; Dhamadasa et al., 2014). Scholars have posited that the optimal size of a board of directors should not exceed 8 or 9 members (Uwuigbe, O.R., & Fakile, A.S., 2012). The larger Board encounters challenges related to coordination and communication, which consequently impact its overall effectiveness. Consequently, it is anticipated that a smaller board size will enhance the effectiveness of monitoring corporate management (Bonna et al., 2011; Vintila, G., & Gherghina, S. C., 2012, 2015). The size of a board is characterized by the natural log value of the total quantity of its members.

iv. Board Independence (BI) - To ensure effective governance, it is imperative that each company actively demonstrates the presence of independent directors on its Board. Board Independence (BI) is quantified as the proportion of non-executive and independent directors relative to the total number of board members (Pandya, H., 2011). In Bangladesh, the measurement is conducted by Notification of BSEC,

which stipulates that a minimum of one-fifth (1/5) of the total number of directors on a company's Board must be independent directors. Any fractional value shall be rounded to the next integer or whole number to determine the requisite number of independent directors. Independent directors are individuals serving on the Board whose sole connection to the organization is their role as directors (Anderson & Reeb, 2003; Iturralde et al., 2012). Each independent director of the company is accorded a value of one (01) point, thereby bestowing a sense of dignity upon the evaluation process.

In this study, an independent director is characterized as an individual who (a) does not possess any shares in the company or holds less than one percent (1%) of the total paid-up shares; (b) is not a sponsor of the company and has no connections with any sponsor, director, nominated director, shareholder, or any associates, sister concerns, subsidiaries, or parent or holding entities of the company; (c) is not a member or holder of a Trading Right Entitlement Certificate (TREC), nor a director or officer of any stock exchange; (d) is not a partner or executive, nor has been a partner or executive within the preceding three years of the company's statutory audit firm or any audit firm engaged in internal audit services or conducting special audits (Notification No. BSEC/CMRRCD/ 2006-158/207/Admin/80, June 3, 2018).

v. Board committees (BC) are essential for enhancing governance within the organization. The Board shall establish various sub-committees, including the Audit Committee and the Nomination and Remuneration Committee. Board Committees (BC) consist of a group of specialists assigned to specific functions, including auditing (audit committee), formulating executive compensation

(nomination and remuneration committee), promoting adherence to optimal corporate governance practices (compliance committee), and assessing risk (risk committee). Organizations can form diverse committees that are specifically designed to address their unique needs and challenges (Przybylowski, M., et al., 2011). This study involved the evaluation of board committees, assigning one point for each independent committee identified. For example, a company lacking independent committees was awarded a score of zero, while a company possessing four independent committees—namely, executive, audit, investment, and nomination and remuneration—was granted a score of four. The aggregate score represents the cumulative count of autonomous committees formed by the organization.

C. Control Variables:

A control variable in a research study is anything that is limited or maintained at a consistent level. This variable is controlled even if it has no bearing on the study's objectives, since it might have an impact on the findings. Except for the independent and dependent variables, all factors that might influence the result should be controlled. If we cannot control relevant factors, we may not be able to demonstrate that they did not affect our findings. Control factors enhance a study's internal validity by lessening the influence of confounding and other irrelevant variables. In this study, age and firm size were used as resistor variables.

i. Firm size (total assets) is included to control company-specific characteristics. In this study, total assets of the firm are identified as the size of the firm. The literature has made significant use of these factors (Anderson & Reeb, 2003; Sarcistán-

Navarro, M. et al., 2011). The existence of economies and diseconomies of scale is determined by firm size (Ln TA), which is the natural log value of total assets.

ii. The firm's age is also treated as the control variable of the study, and it is determined by taking the number of years from its incorporation. This variable serves as a proxy for the reputation of a firm.

Finally, macroeconomic indicators like GDP and inflation are also incorporated to track their efficacy and overall economic effects. Several studies have used the GDP as a gauge of macroeconomic aspects (Cook, D. O., & Tang, T., 2010; Mitra, G., et.al., 2023). According to Wang, K., & Shailer, G., (2015), businesses' cash holdings decrease when inflation increases. The rate of macroeconomic growth indicators (GDP growth) and business performance have a favorable correlation, found by Gaurav Mitra, Vandana Gupta, and Gaurav Gupta (2023). This research also demonstrates that a company's sales growth, operational profit, leverage, firm size, and firm age all have an impact on its success. In another research, Zeitun & Goaied (2022) showed that more economic activity, as shown by GDP, directly leads to better corporate performance in Japan.

4.9 Summary of the Independent and Dependent Variables of the Study

The names, sources, and methods of measurement for the independent and dependent variables of this study are compiled in Table - 4.4 to 4.5, which are used to construction of the various regression models and analysis as required information. The noted tables are also include the firm specific traits under control variables.

Table - 4.4 to 4.5
Measurement scales and Source of the Independent and Dependent variables

Table 4.4: DEPENDENT VARIABLES (Firm Performance)

Sl. No.	Variable Name	Measure	Source
01	Return on Asset (ROA)	Net Income (NI) divided by Total Assets (TA).	Anderson & Reeb (2003) Barontini & Caprio (2005) Farooque et al. 2007; Ndlovu & Alagidede (2018), Raithatha & Haldar (2021) Ghalke, A., Haldar, A. & Kumar, S. (2023), Mitra, G., Gupta, V., & Gupta, G. (2023).
02	Return on equity (ROE)	EAT/NI divided by Equity	Jiming and Xing (2012), Ndlovu & Alagidede (2018), Al-ahdal et al (2020), Gerged & Agwili (2020) Tutino & Regoliosi (2013), Mitra, G., Gupta, V., & Gupta, G. (2023).
03	Net worth (NW)	Current Asset (CA) minus Current Liability (CL)	Barontini & Caprio (2005), Villalonga & Amit (2006), Bhagat and Bolton (2019), Delen et al. (2013) Farooque et al. 2007; Raithatha & Haldar (2021).

Source: Author's compilation

Table 4.5: INDEPENDENT VARIABLE (Firm Specific)

Sl. No.	Variable Name	Measure	Source
01	Family-Firm (Family control)	Rated a '1' if the founding family holds a fraction of the firm or is present on the board of directors and rated '0' otherwise.	Anderson & Reeb (2003) Villalonga & Amit (2006), Chrisman. et.al. (2013), Muntahanah, S. et.al (2021)
02	Ownership Concentration as promoters' shareholding (OC)	Sponsor's/Promoters' shares divided by total shares outstanding	Madhani. P.M (2016), Kumar & Singh (2013), Varghese & Sasidharan (2020), Ghalke, A., Haldar, A., & Kumar, S. (2023).
03	Board Independence (BI)	Number of Independent Directors divided by Total Board Size	Afza Amran, N., & Che Ahmad, A. (2009). Kusuma and Ayumardani (2016), Ali, S., (2021), Bansal, M. (2021).
04	Board Size (BS)	The total number of Directors on the board of the company	Zubaidah et al. (2009), Fooladi, et.al (2012), Kusuma & Ayumardani (2016), Zabri et al. (2016), DAO, T. T. B., & HOANG, L. C. (2022).
05	Board Committee (BC)	Assigning one point to each independent committee of the board	Salami, K. A. (2011), Przybylowski, et.al. (2011), Albu, C. N., & Girbina, M. M. (2015). Jiraporn, P., Uyar, A., Kuzey, C., & Kilic, M. (2019).
		Control variables	
06	Company Age (Age)	Difference between the founding year and the current year	Anderson & Reeb (2003) Panco, R., & Korn, H. (1999). Ndlovu & Alagidede (2018), Mittal, R., Soriya, S., Lochab, A., & Sharma, P. K. (2022). Mitra, G., Gupta, V., & Gupta, G. (2023).
07	Company Size (Ln TA)	Natural log of the book value of total assets	Anderson & Reeb (2003), Villalonga & Amit (2006), Afrifa & Tauringana (2015), Lopez-Valeiras, E., et al. (2016), Ndlovu and Alagidede (2018), Mitra, G., Gupta, V., & Gupta, G. (2023).
08	Market Capitalization (MC)	The number of outstanding shares is multiplied by the current price of those shares on the stock market	Fama & French (1993), Dias (2013), Armstrong & Vashishtha, (2012), Al-Nimer, M., & Alslihat, N. (2015).Farboodi, M., et.al (2018) Dessaint, Foucault, Zaigham, G. et.al. (2019), Mitra, G., Gupta, V., & Gupta, G. (2023).

Source: Author's Compilation

4.10 Specification of the Model and Measurement Issues

In general, there are three types of research methodologies: mixed techniques, qualitative methods, and quantitative approaches. The research questions and objectives must guide the selection of the study design (Frels & Onwuegbuzie, 2013; Venkatesh, V. et.al, 2013). Quantitative approach is constructive for hypothesis testing (Berete, 2011). The qualitative research approach is constructive for an in-depth understanding of any research phenomenon (Berete, 2011). However, when neither the qualitative nor the quantitative methodology by itself is adequate to address a research subject, a mixed-methods strategy fully is advised (Bonna, 2011).

A qualitative technique was deemed inappropriate because the research aims to quantitatively measure the association between variables, rather than exploring qualitative themes through interviews. Additionally, mixed methodologies necessitate lengthy analytical processes and comprehensive data collection (Stanley, L., & Wise, S., 2010). As a result, the best strategy for answering the study's research objectives was determined to be a quantitative one that made use of secondary data analysis.

A reliable statistical method for examining the relationship between two or more variables is multiple regression analysis. The direct impact of family control on business performance is investigated in this study using multiple regression, which is mediated by the inclusion of corporate governance variables. The study sheds light on how corporate governance practices used by family businesses could mitigate the link between company performance and family control.

Here, Control of the Family firm (FF) and CG devices, including (a) size of the board (BS), (b) independence of the board (BI), (c) board committees (BC), and (d) ownership concentration (OC), are the independent variables in the regression model. To take into

consideration their possible impact on firms' outcomes, company age and size are included as control variables. Return on Equity (ROE), Return on Assets (ROA), and Net Worth (NW) are the dependent variables that reflect financial success. Both ROE and ROA are well-known performance metrics (Vo, D. H., & Nguyen, T. M., 2014; Habbash & Bajaher, 2015). A standard indicator of market value in empirical corporate governance research is net worth. Compared to other accounting-based performance measurements, it takes risk into account and is thought to be less susceptible to distortions (Al-Matari et al., 2014; Habbash & Bajaher, 2015).

Previous research on the macroeconomic effects on company performance has focused on developed economies, as documented in the studies by Zeitun and Goaied (2022), Killins (2020), and Issah & Antwi (2017). Zeitun and Goaied (2022), for example, discovered that GDP growth had a favorable effect on Japanese company performance. The performance of Canadian life insurance businesses and GDP growth rates were found to be significantly and positively correlated (Killins, 2020). In a similar vein, Al-Najjar (2014) found that the financial success of Middle Eastern tourist companies was positively correlated with GDP growth.

4.11 Estimating the Regression Parameters

In simple linear regression, the causality between two variables is characterized: an independent variable, referred to as x, and a dependent variable, designated as y. Matrix algebra is frequently employed in the determination of the line of best fit. The formulation of the simple linear regression model for this study is articulated as the following equations;

$$Y= \alpha +\beta 1X1 + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where,

Y is the dependent variable.

X is the independent variable.

β1 is the slope

α is the intercept and;

ε is a random error variable.

The least squares method posits that the estimation of regression parameters is achieved through the minimization of the sum of squared errors, which represents the vertical distance between each observed response and the regression line.

Multiple regression analysis constitutes a statistical methodology employed to assess information derived from empirical data via regression modeling. In contrast to simple regression, multiple regression takes into account the effects of two or more independent variables on a single dependent variable. To carry out the analysis, this study utilized a multiple regression model to investigate the influence of independent variables on the dependent variable and to assess cause-and-effect relationships, thus offering a more comprehensive understanding of temporal changes.

$$Y=\alpha+\beta 1X1+\beta 2X2+\beta 3X3+\beta 4X4+\cdots+\beta nXn+\varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1.1)$$

Where,

Y denotes the dependent variable,

X1, X2…, Xn represent the independent variables,

α represents alpha (α), which is the intercept,

β1, β2……., βn are the beta coefficients associated with the independent variables, and

ε represents epsilon (ε), which is the random error term (Bonna, 2011).

The study used a multiple linear regression model after carefully evaluating other quantitative techniques, such as correlation analysis (Correlation Matrix, Variance Inflation Factor etc.), ordinary linear regression (OLS), and analysis of variance (ANOVA) which is documented by Bonna (2011) and others. Multiple regressions were deemed more suitable given the study's goal and the characteristics of its variables than the case with correlation analysis and basic linear regression. This method made it possible to investigate the direction and intensity of causality between several business performance metrics and five independent variables (Rodríguez-Ponce, E. et al., 2011).

Regression parameters can be estimated using different frameworks – the OLS (Ordinary Least Squares) framework, the MLE (Maximum Likelihood Estimation) framework, and the GMM (Generalized Method of Moments) framework. In the OLS [ordinary least squares] framework, the regression parameters [α and β_n] are estimated using an optimization technique whereby the sum of the squared residuals (SSR) is minimized. A sample of the model for a single-factor model can be represented as such:

$$Y_i = \alpha + \beta_1 X_i + \varepsilon_i \ldots\ldots\ldots\ldots\ldots\ldots \textit{(1.2)}$$

In the estimated model, there will not be any error as $E[Y_i|X_i] = \alpha + \beta_1 X_i$. So, the error ($\varepsilon i$) can be calculated by $\varepsilon_i = Y_i - \hat{Y}$. In the OLS mechanism, the squared sum of the residuals is minimized.

$$\min_{\alpha,\beta k} \sum_{i=1}^{n} \varepsilon^2 = \min_{\alpha,\beta k} \sum_{i=1}^{n} (Yi - \alpha - \beta 1\, Xi)^2 \ldots\ldots\ldots\ldots \textit{(1.3)}$$

The minimization function is initially partially differentiated concerning the constant and the slope. By assuming that the first order condition [FOC=0], the intercept for the given data is extracted. On a similar note, the minimization function is first partially differentiated concerning each beta coefficient separately. By assuming that the first order condition [FOC=0], each beta coefficient can be extracted using the given data.

Therefore, the Generic equations or baseline regression for the study/model are established as;

$$Y\ (FP) = \alpha + \beta 1FF + \beta 2OC + \beta 3BS + \beta 4BI + \beta 5BCom + \beta 6C\_S + \beta 7C\_A + \beta 8NW + \beta 9MC + \varepsilon$$

Here,

Firm Performance (FP) = ROA (Return on Assets), ROE (Return on Equity), and Net Worth (NW).

α = Constant Term

ε = Random error variable

$\beta 1$-$\beta 9$ = Regression Coefficient for Independent and Control Variables

FF = FF stands for "family firm" or "business," which is run by family members who are among the top ten shareholders.

Board Size (BS) = BS is the sum of the number of directors on the Board.

Board independence (BI) refers to the total number of independent directors on the Board.

Board Committee (BC) = BC stands for Board Committee (the total number of board committees).

Size of Company (C_S) = C_S refers to the size of the Company (calculated as the Natural log value of the Total Assets)

Company's Age (C_A) = C_A is the company's age (calculated as the difference between the year of formation and the present).

Ownership Structure/Concentration (OC) = OC stands for Ownership Concentration, which measures the proportion of shares held by significant investors and their controlling stake in related businesses.

Net Worth (NW) = NW stands for net worth, which is the difference between the company's current assets and current liabilities.

Return on assets (ROA) is a key metric that reflects a company's financial performance.

Return on Equity (ROE) = ROE is the company's financial performance.

Market Capitalization (MC) = MC is the output of the number of outstanding shares multiplied by the current price of those shares on the stock market.

This study adopts fixed-effects (FE) and panel-corrected standard error (PCSE) estimation techniques to accommodate the underlying econometric properties of the panel dataset and to enhance the robustness of the empirical results. The dataset consists of firm-level observations spanning a ten-year period (2015–2024), during which unobserved, firm-specific attributes—such as managerial practices, ownership history, business group ties, and internal governance traditions—are likely to simultaneously affect corporate governance arrangements and firm performance. Failure to control for these time-invariant factors may lead to biased coefficient estimates. The fixed-effects framework is therefore appropriate, as it accounts for unobserved heterogeneity by permitting firm-specific intercepts, thereby reducing omitted variable bias associated with unobservable firm-level characteristics (Wooldridge, 2010; Baltagi, 2021).

The preference for the fixed-effects specification over the random-effects alternative is further justified by the results of the Hausman specification test, which reveal a statistically significant correlation between unobserved firm-specific effects and the regressors. In such a case, the random-effects estimator would yield inconsistent estimates, whereas the fixed-effects estimator remains consistent. Accordingly, the fixed-effects model is selected as the primary estimation approach for the panel regressions (Hausman, 1978).

Beyond unobserved heterogeneity, diagnostic tests indicate the presence of heteroskedasticity, cross-sectional dependence, and contemporaneous correlation across firms—conditions commonly observed in panel data from emerging capital markets due to shared macroeconomic shocks, regulatory reforms, and market-wide influences. Although the fixed-effects estimator produces consistent parameter estimates, conventional standard errors may be unreliable under these violations of classical assumptions. To obtain valid statistical inference, this study therefore employs panel-corrected standard errors, which are specifically designed to accommodate heteroskedasticity and cross-sectional dependence in panel data settings (Beck & Katz, 1995).

The PCSE methodology is particularly well suited to panels with a relatively long-time dimension and has been extensively applied in empirical corporate finance and governance research to improve inference accuracy. By integrating fixed-effects estimation with PCSE, the study ensures both consistent coefficient estimation and robust hypothesis testing. This combined approach enhances the reliability of the empirical findings and strengthens their interpretability for both academic and policy-oriented audiences in the Bangladeshi context.

In summary, fixed-effects estimation is employed to control for unobserved, time-invariant firm-level heterogeneity, while panel-corrected standard errors are used to ensure valid statistical inference in the presence of heteroskedasticity and cross-sectional dependence—features commonly observed in emerging market panel datasets.

4.12 Sum-up

Conducting business research is a systematic endeavor with sequential, interconnected stages. Due to practical limitations, specific steps may have been undertaken concurrently. This study adopted a positivist approach for deductive research, formulating hypotheses from existing literature and testing them with quantitative data. Secondary data were sourced from a sample of publicly listed manufacturing firms, and the application of diverse quantitative data analysis tools characterized it as quantitative research.

Further on in the thesis, descriptive statistics, correlation matrix, and regression results were first presented, followed by the main results. These results were then juxtaposed with established literature, and the subsequent data analysis concentrated on endogeneity and robustness considerations.

Chapter-Five
Empirical Analysis

This chapter of the dissertation begins by delineating the data filtering process and presenting descriptive statistics for the primary research variables, followed by a correlation matrix. Subsequently, it summarizes the findings from various diagnostic tests concerning issues such as multicollinearity, the presence of outliers, the normality of errors, and heteroscedasticity. Following this, the initial regression findings are presented, which were generated using a fixed-effects estimation technique and panel-corrected standard errors, along with their corresponding beta coefficients.

The research systematically investigated potential sources of endogeneity and sought to resolve them. A significant portion of the later analysis focused on how the endogeneity problem, particularly that stemming from omitted variable bias and data measurement issues, was effectively managed. The results of robustness checks are also included, which demonstrate whether the initial estimated effects remain consistent despite potential measurement inaccuracies in the dependent variable and when using winsorized data. Furthermore, the researcher assessed the extent of cross-sectional heterogeneity in the estimated effects.

5.1 Sample Selection and Filtering Procedures:

The sample used in this study comprises publicly listed firms in Bangladesh drawn from the Dhaka Stock Exchange PLC (DSE) to investigate the association between family ownership, corporate governance mechanisms, and firm performance. The initial population included all companies listed on the DSE during the 2015–2024 period. As of July 2024, the exchange hosted a total of 360 listed firms.

A multi-stage screening and filtering procedure was applied to ensure data integrity and the construction of a valid balanced panel. Firms were first evaluated based on listing continuity, and firms characterized by limited firm representation or non-uniform disclosure practices were excluded in line with established corporate governance literature. Companies with incomplete financial records, recent listings or delisting's, extended trading suspensions, or missing key ownership, governance, and performance variables were subsequently removed. To reduce the influence of extreme observations, financial variables were winsorized.

Following these screening steps, the final sample consists of 104 firms listed on the DSE, representing both manufacturing and financial sectors. Owing to data availability limitations and the need for consistent and continuous disclosure over time, convenience sampling was employed. While this sampling approach may constrain the statistical generalizability of the results, it ensures a high-quality and methodologically robust dataset suitable for panel econometric analysis. The resulting balanced panel includes complete firm-year observations over the ten-year study period, providing adequate cross-sectional and temporal variation for reliable empirical estimation.

5.2 Descriptive Statistics:

Descriptive statistics of the research variables are provided in Table 5.1. Mean, Standard deviation, Maximum and Minimum values of the study variables are shown in this table.

Table - 5.1
Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	1,040	5.18199	7.388848	-81.67	56.26
Marketcap	0				
FamilyFirm	1,040	.8942308	.30769	0	1
OwnershipCon	1,040	41.61241	20.41926	0	95
BoardSize	1,040	8.931731	3.472725	4	21
BoardInd	1,040	23.59814	10.44177	0	70
BoardCom	0				
Age	1,040	31.89327	15.59328	6	112
LnTA	1,040	21.69633	2.578629	8.734037	28.24008
LnNW	1,039	5.92494	1.470381	1.625886	9.647651

Source: Compiled by the Researcher

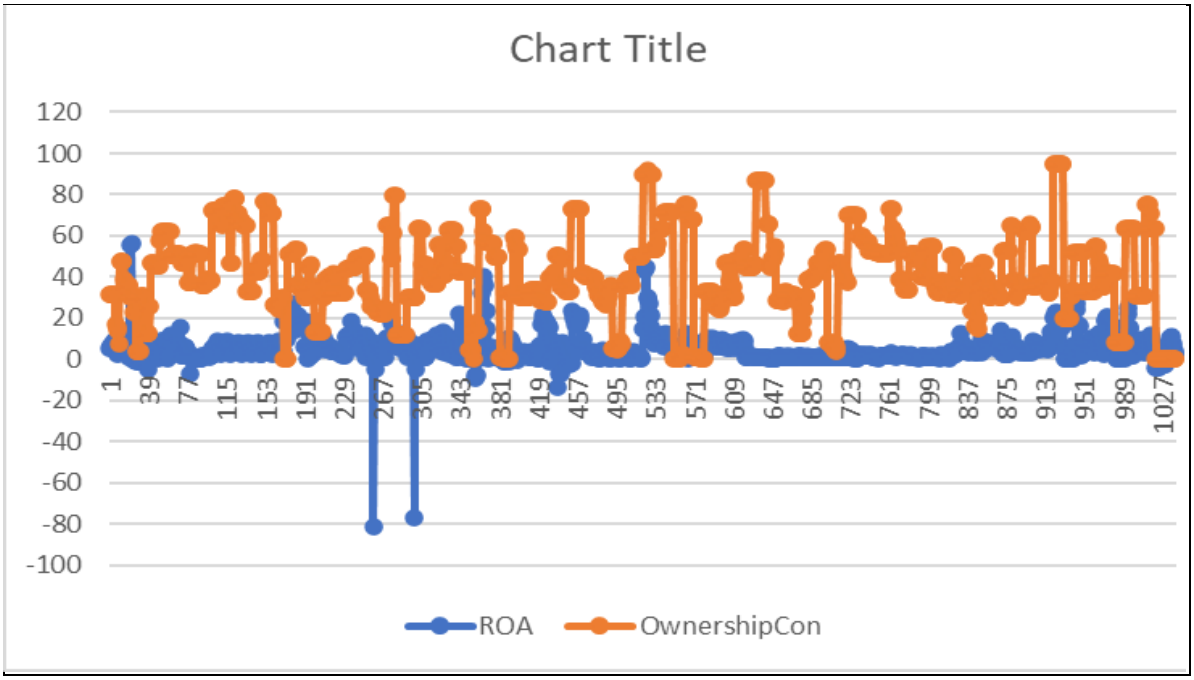
It is observed from the descriptive statistics presented in Table 5.1 that each variable comprises 1,040 observations. The average Return on Assets (ROA) is 5.18%, exhibiting significant variation from -81.67% to 56.26%, indicating considerable disparities in profitability among firms. The Family Firm (FF) variable is binary, taking values of 0 or 1, with 1 indicating a family-owned firm and 0 indicating otherwise. The mean value of 0.89 suggests that approximately 89% of the firms in the sample are family-owned. The mean ownership concentration (OC) is 41.59%, with a range from 0% to 95%. The average board size (BS) is 8.93 members, and the average board independence (BI) is 23.59%. The average age of firms is 31.89 years, with a range from 1 to 112 years. Total assets (lnta) denote the logarithmic value of a firm's total assets, exhibiting a mean of 21.69 and a range from 8.73 to 28.24. Net worth (lnnetworth) denotes the natural logarithm of net worth, with a mean of 5.92 and a range of values from 1.63 to 9.64.

In brief, this table provides a snapshot of the central tendency and dispersion of various characteristics of the sample of the study. It allows readers to understand the typical values and the variability of these variables within the dataset.

5.3 Graphical Analysis of the Study Variables:

From the compiled data set, various types of relationships can be explored, which are shown in the graph from **5.1 to 5.12:**

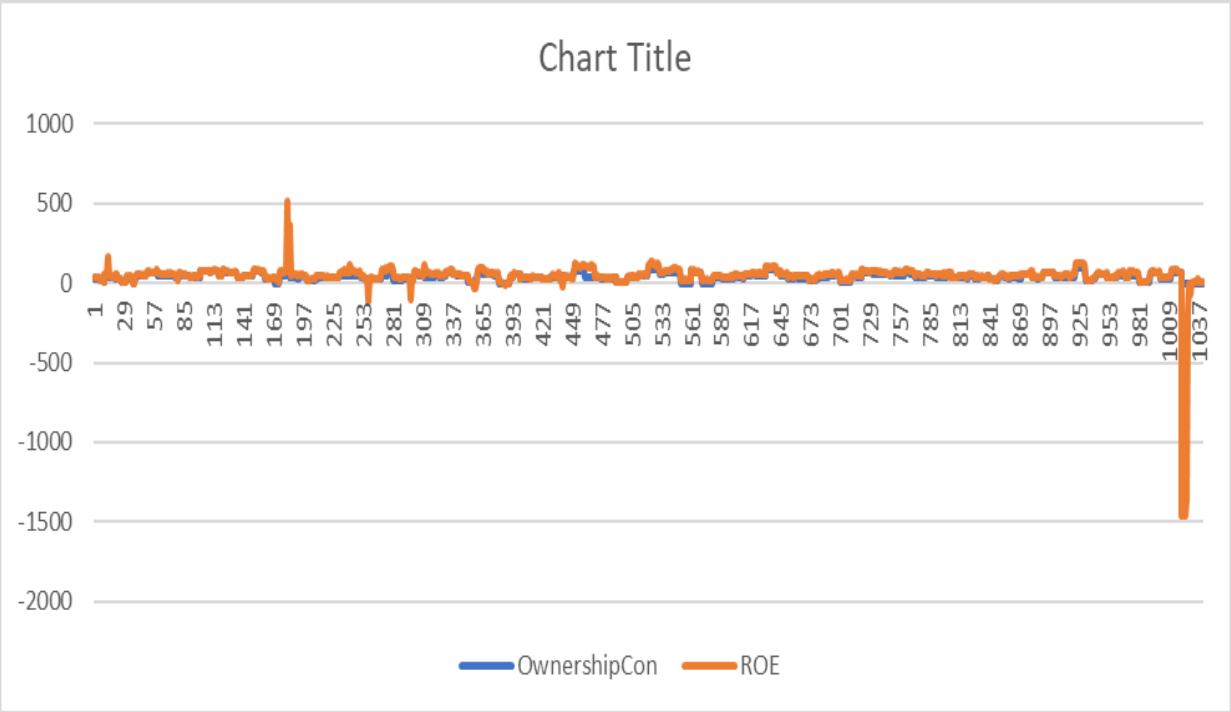
Graph- 5.1
Relationship between ROA and OC



Source: Compiled by the Researcher

From Graph -5.1, it is observed that the dependent variable (ROA) and the independent variable, OC, exhibit a negative correlation. Specifically, when OC increases, ROA decreases, and conversely, when OC decreases, ROA or the profitability of the firm increases. This means that the firm has to manage its OC efficiently to achieve higher profitability.

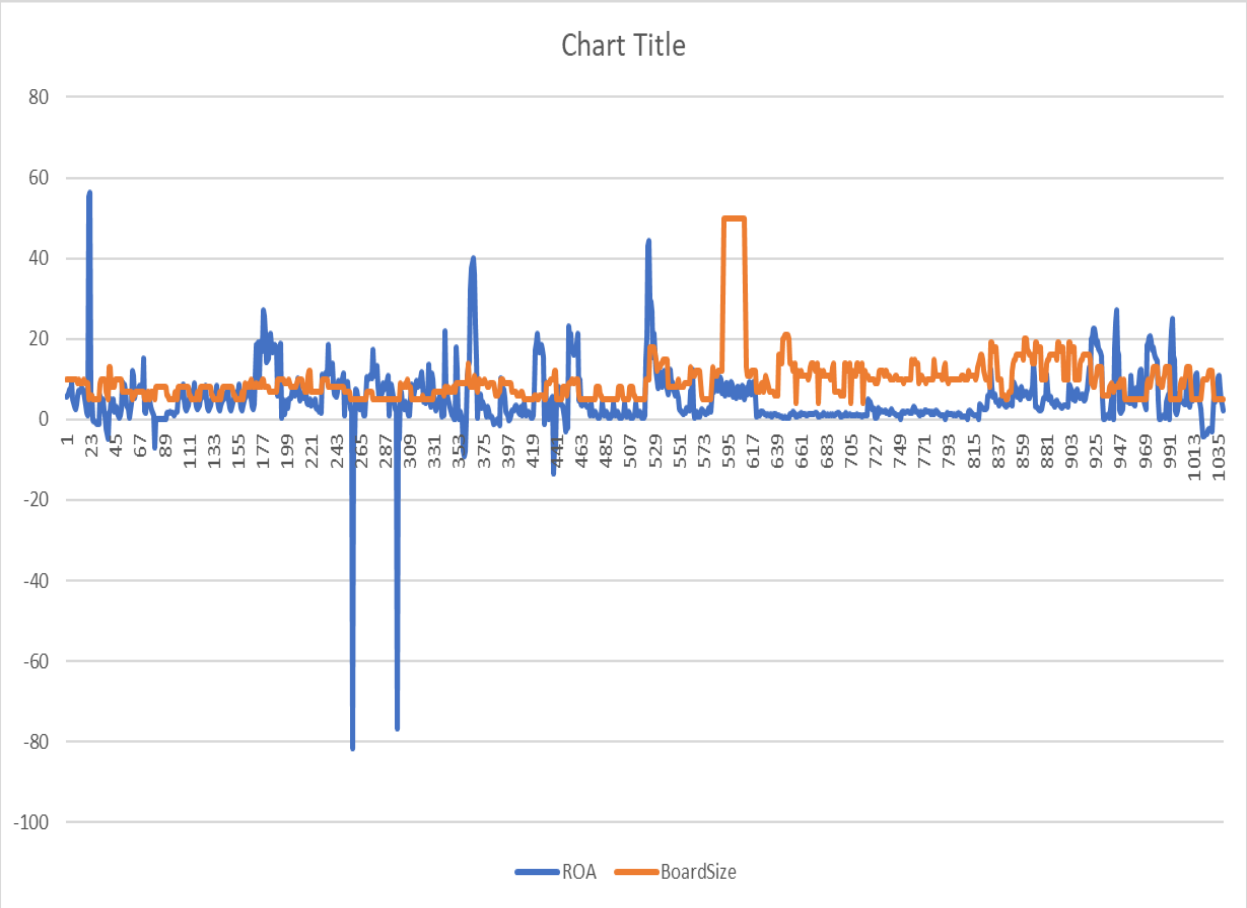
Graph -5.2
Relationship between ROE and OC



Source: Compiled by the Researcher

It is revealed from Graph 5.2 that the ROE and OC are positively correlated; i.e., when OC increases, the ROE increases, and when OC decreases, ROE or the profitability of the firm decreases. This means the firm must manage its OC efficiently to achieve higher profitability.

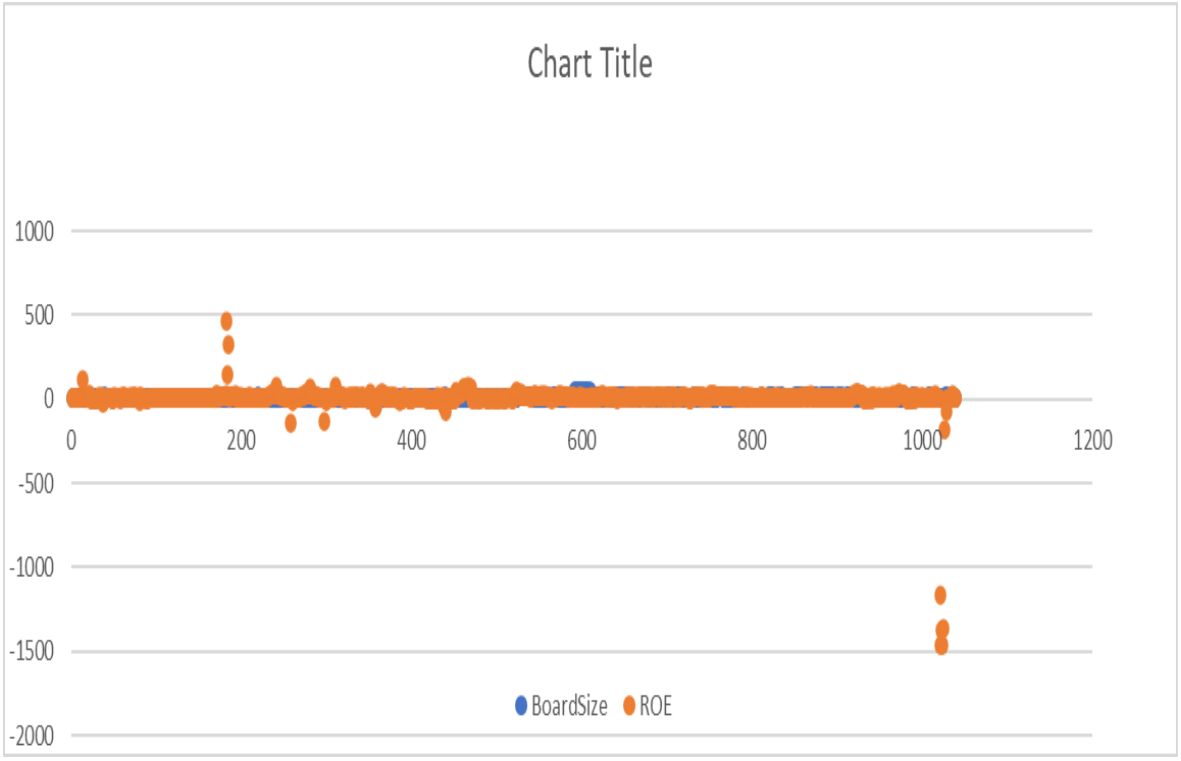
Graph -5.3
Relationship between ROA and BS



Source: Compiled by the Researcher

It is evident from Graph -5.3 that there is a negative link between ROA and the BS. In particular, ROA falls as BS rises and rises when BS falls, suggesting a positive correlation with the firm's profitability.

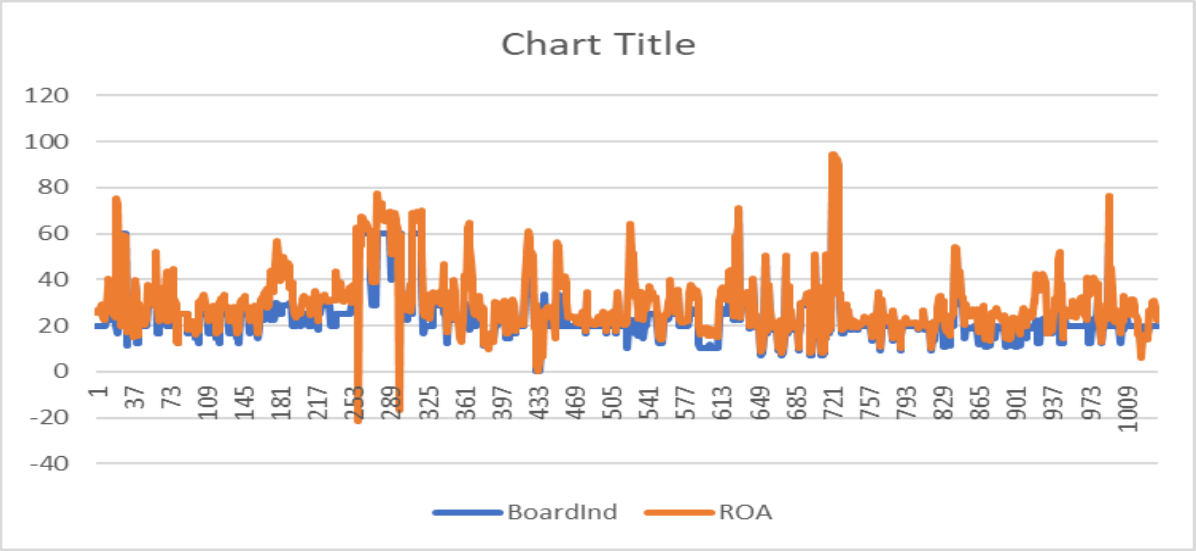
Graph -5.4
Relationship between ROE and BS



Source: Compiled by the Researcher

The ROE and BS exhibit a negative correlation in graph 5-4; specifically, when BS increases, ROE decreases, and conversely, when BS decreases, ROE increases, indicating a positive relationship with the profitability of the firm.

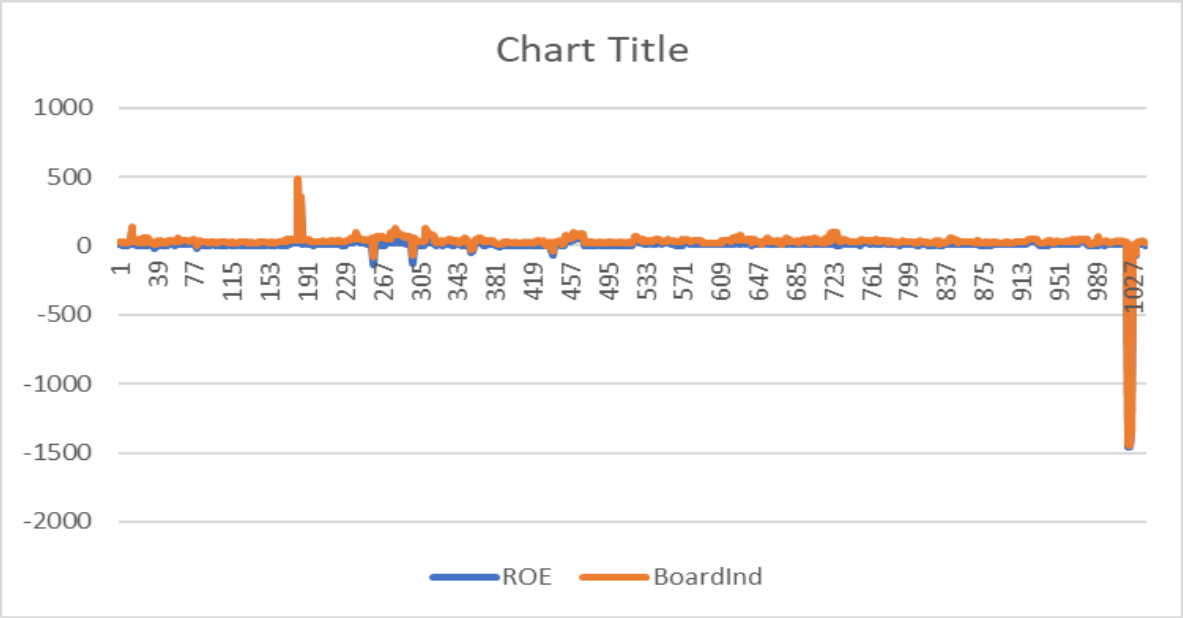
Graph -5.5
Relationship between ROA and BI



Source: Compiled by the Researcher

It is documented in Graph -5.5 that ROA and BI are negatively correlated; specifically, when BI increases, ROA decreases, and when BI decreases, ROA, or the profitability of the firm, increases.

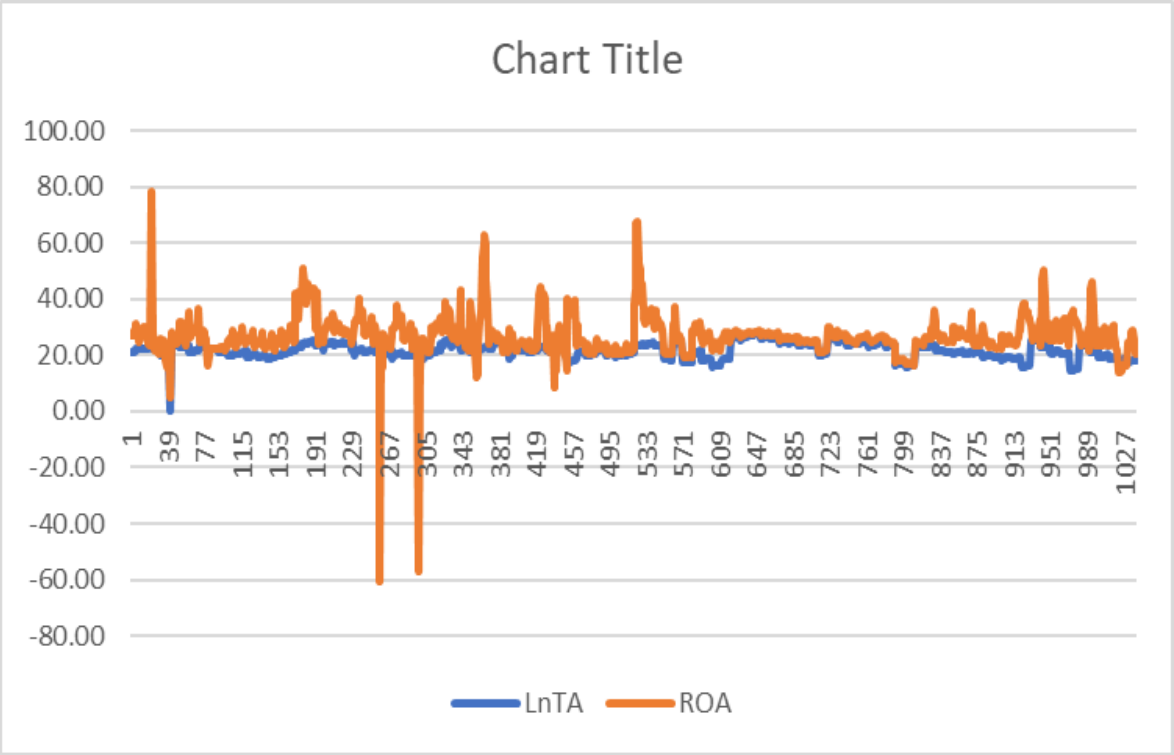
Graph -5.6
Relationship between ROE and BI



Source: Compiled by the Researcher

According to Graph 5.6, ROE and BI have a negative relationship; that is, as BI rises, ROE falls, which suggests that the firm's profitability falls as well.

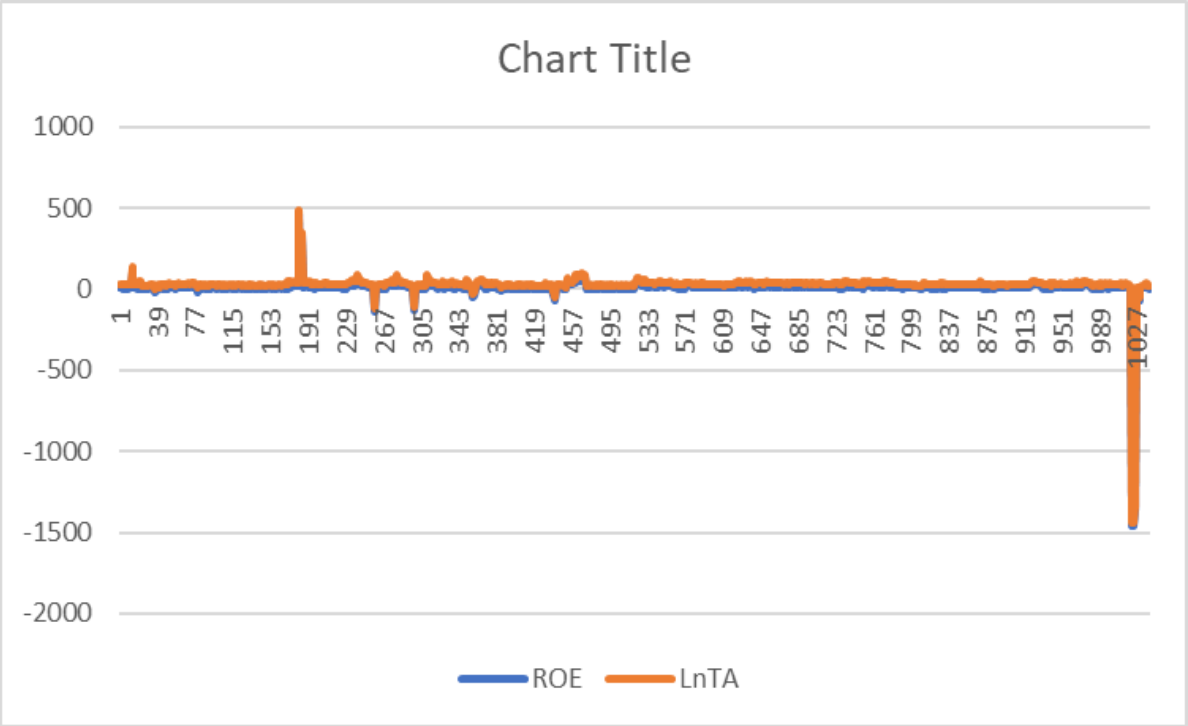
Graph -5.7
Relationship between ROA and LnTA



Source: Compiled by the Researcher

It is observed that ROA and BI are positively correlated; specifically, when LnTA increases, ROA also increases, and when LnTA decreases, ROA or the firm's profitability decreases. This means the firm has to manage its assets efficiently to achieve superior profitability.

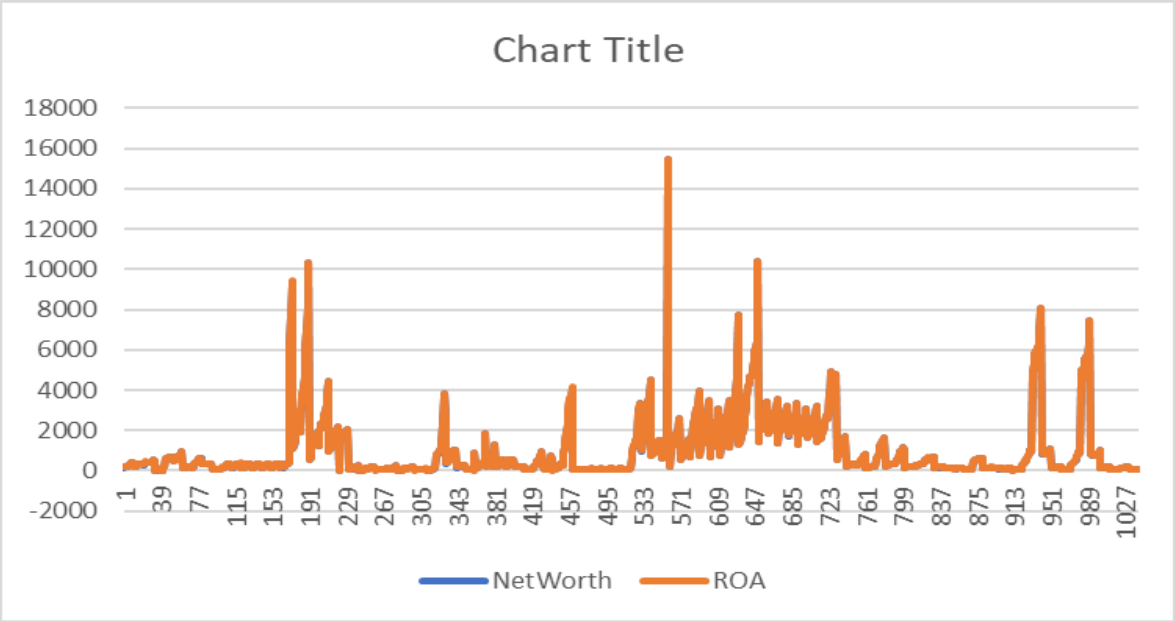
Graph -5.8
Relationship between ROE and LnTA



Source: Compiled by the Researcher

It is revealed from the Graph - 5.8 that ROE and BI are negatively correlated; specifically, when LnTA increases, ROE decreases, and when LnTA decreases, ROE or the profitability of the firm increases. This means the firm has to manage its assets efficiently to achieve superior profitability

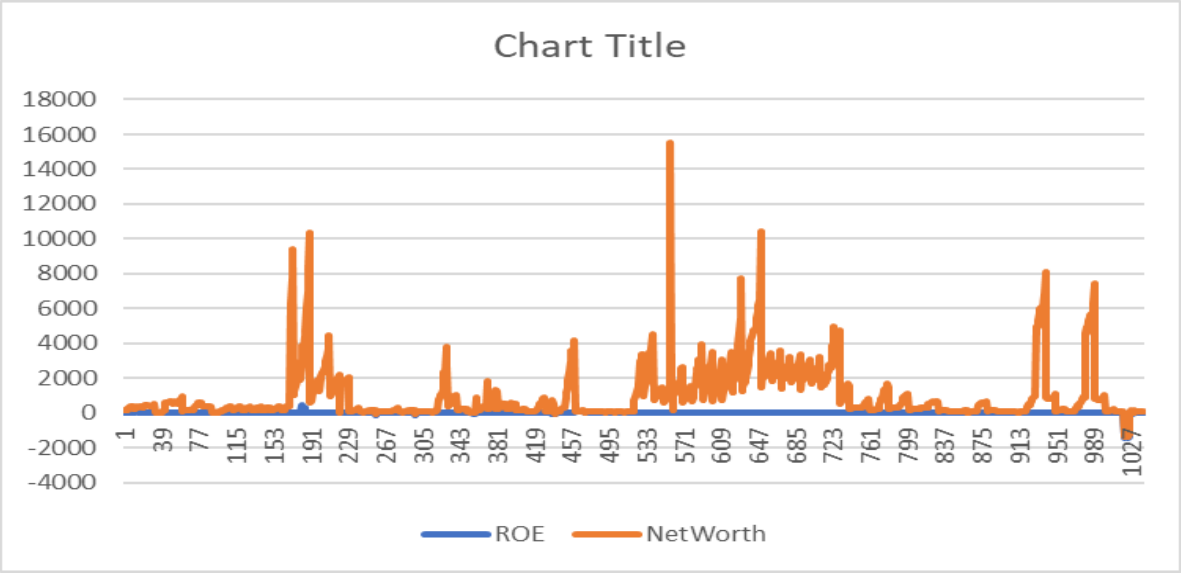
Graph -5.9
Relationship between ROA and Net Worth



Source: Compiled by the Researcher

It is found that ROA and Net worth are positively correlated in Graph-5.9. Specifically, when net worth increases, ROA also increases, and when net worth decreases, ROA or the profitability of the firm decreases.

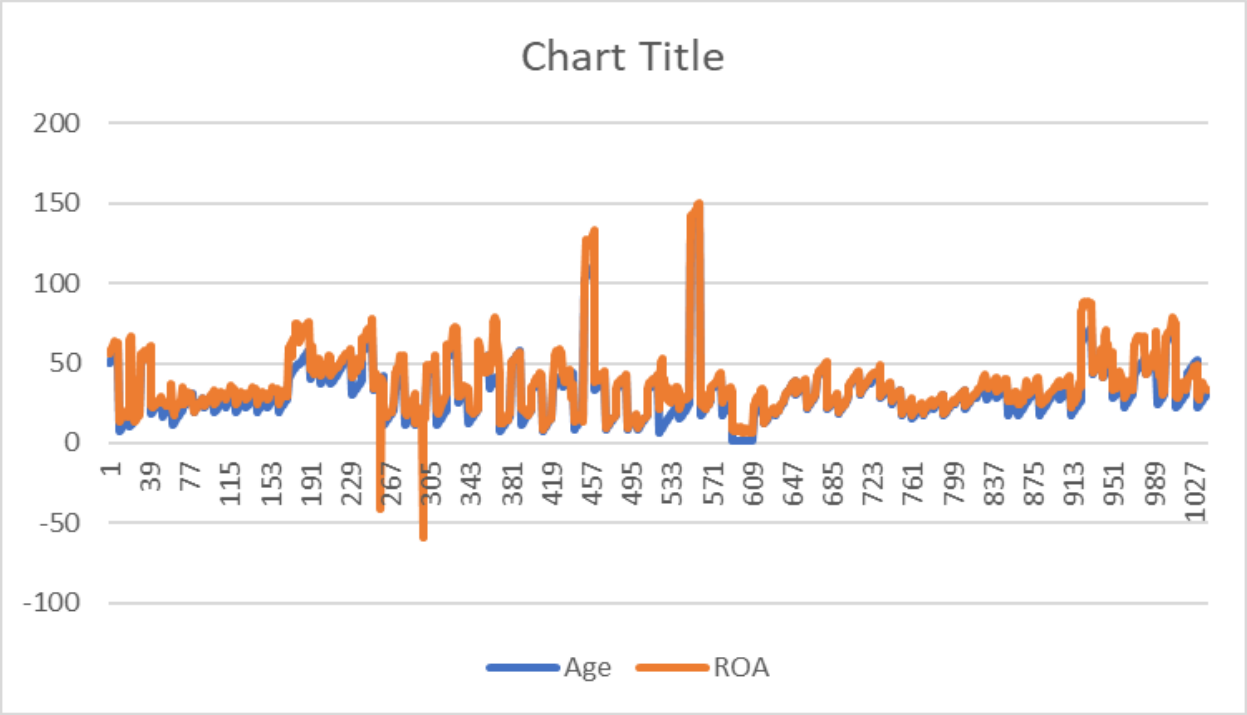
Graph -5.10
Relationship between ROE and Net Worth



Source: Compiled by the Researcher

It is observed from the Graph -5.10 that ROE and Net Worth are negatively correlated; specifically, when Net Worth increases, ROE decreases, and when Net Worth decreases, ROE or profitability of the firm increases.

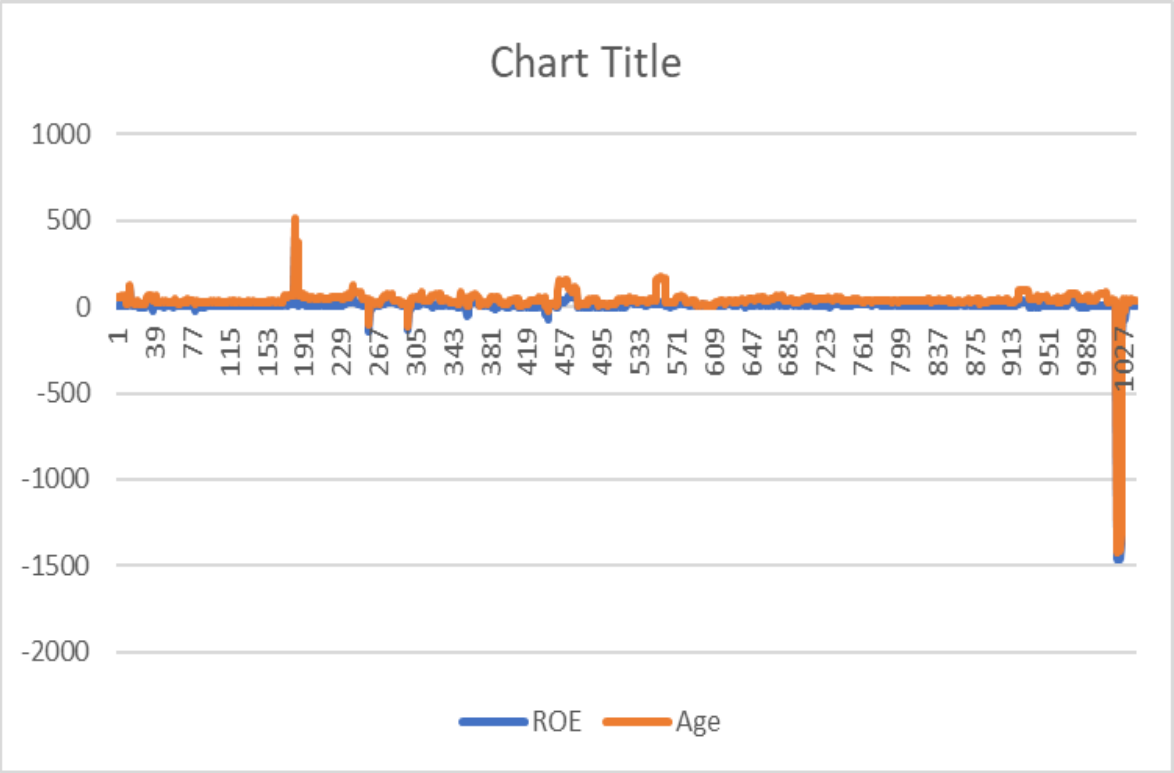
Graph -5.11
Relationship between ROA and Age



Source: Compiled by the Researcher

The Graph -5.11 shows that ROA and the Age of the firm have a positive correlation. Specifically, as Age increases, ROA also increases, while as Age decreases, ROA decreases, indicating a decrease in the profitability of the firm.

Graph -5.12
Relationship between ROE and Age



Source: Compiled by the Researcher

It is exposed in Graph-5.12 that ROE and Age are positively correlated, i.e., when Age increases, the ROE increases, and when Age decreases, ROE or efficiency of the firm decreases.

5.4 Correlation Analysis

Based on the dataset, the linear relationships among variables were examined, with the results presented in Tables 5.2 and 5.3, as well as Chart 5.1.

Table - 5.2
Correlation matrix

	ROA	Family~m	Owners~n	BoardS~e	BoardInd	Age	LnTA	LnNW
ROA	1.0000							
FamilyFirm	0.0671	1.0000						
OwnershipCon	0.2545	0.1216	1.0000					
BoardSize	0.0325	-0.0379	0.1170	1.0000				
BoardInd	-0.0316	0.0723	-0.0801	-0.3709	1.0000			
Age	0.1207	-0.0612	-0.0906	0.0340	-0.1436	1.0000		
LnTA	-0.1168	-0.0083	0.0844	0.1161	0.0110	-0.0901	1.0000	
LnNW	0.0873	-0.0569	0.1080	0.2332	-0.0936	0.2346	0.4848	1.0000

Source: Compiled by the Researcher

Table -5.2 depicts the following analysis regarding the correlation among pairs of the study variables;

a. None of the pairs are correlated in a perfectly positive or perfectly negative way. So, there exists no sign of a 'Full rank' problem or 'perfect multicollinearity' problem.

b. Family firm shows a mild positive correlation (0.0671) with ROA

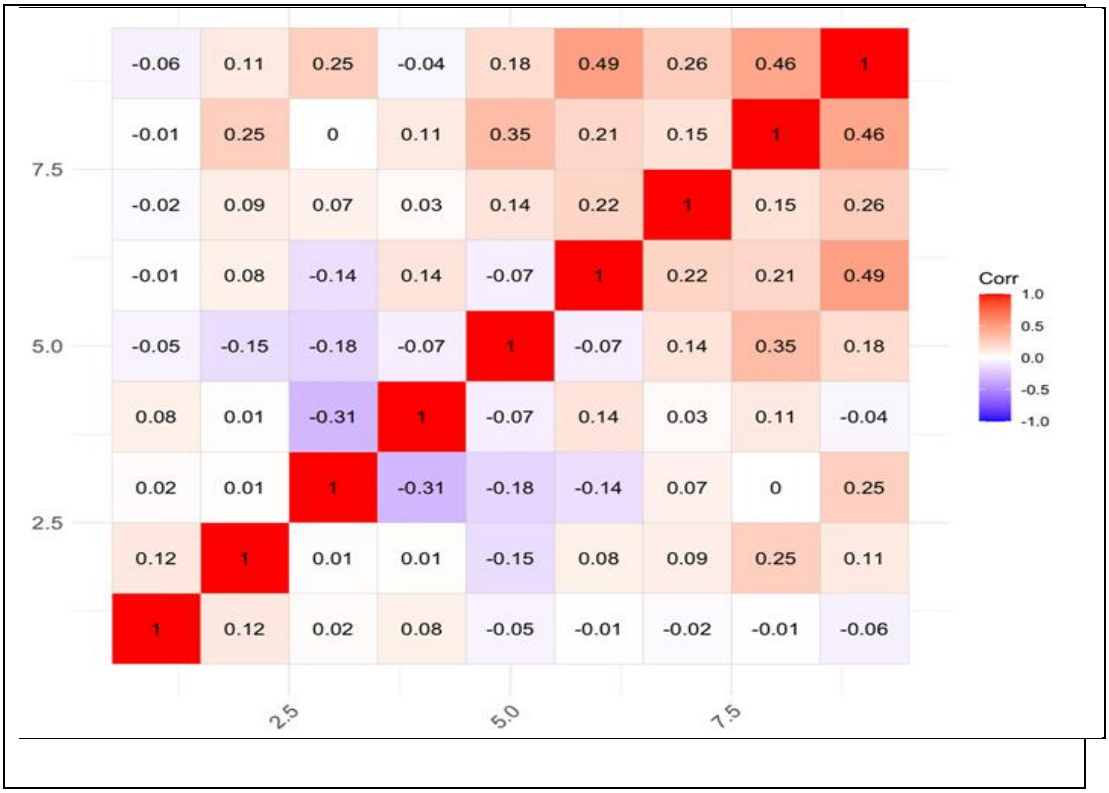
c. ROA and Net worth (lnNW) provide a moderate positive (0.0873) correlation, indicating that firms with larger ROA tend to have higher net worth.

d. Board Independence (boardind) and board Size (boardsize) indicate a moderate negative (-0.3709) correlation, suggesting that larger boards tend to have lower independence

e. Ownership Concentration (ownershipcon) and ROA identify a weak positive (0.2545) correlation, suggesting a slight tendency for higher ownership concentration to be associated with higher return on assets.

f. Age and ROA also identify a weak positive (0.1207) correlation

Chart - 5.1
Correlation heatmap



Source: Compiled by the Researcher

The Chart-5.1 represents the correlations among the study variables through a correlation heat map. Here, Bright red squares highlight strong positive relationships. For instance, the variable in the top-right corner shows strong positive correlations with several others. Blue squares represent negative relationships, such as the variable in the bottom-left corner, which has negative correlations with multiple variables. Light or neutral-colored squares indicate weak or negligible relationships between the corresponding variables.

Table - 5.3
Eigenvalues and Condition indices

```
> ols_eigen_cindex(model1)
    Eigenvalue Condition Index
1  8.067442148        1.000000
2  0.791194484        3.193201
3  0.359136216        4.739563
4  0.270417957        5.461981
5  0.170274742        6.883238
6  0.153445849        7.250874
7  0.093569947        9.285381
8  0.069015184       10.811740
9  0.020799423       19.694379
10 0.004704049       41.412552
```

Source: Compiled by the researcher

The eigenvalues and condition index, which show how much of the variance in the predictor variables is explained by each principal component, are shown in Table - 5.3. The related principal component may explain relatively little of the variance in the predictors, according to smaller eigenvalues. Higher values indicate possible multicollinearity problems. The condition index shows how sensitive the estimations are to small changes in the data. Typical rules consist of:

i. Condition Index > 10: Potential problem that needs more research.

ii. A condition index > 30 denotes a serious multicollinearity issue.

By considering the above results, it is found that there is a possibility of multicollinearity, and the necessary corrective action should be taken before the regression analysis.

5.5 Diagnosis Tests

From the pre-diagnosis tests, it is revealed that there is a potential multicollinearity problem for the variables. Diagnosis tests covered detecting outliers, identifying

multicollinearity and heteroscedasticity problems, and whether the distribution of error is normal (NDE). The diagnosis test results are shown in the Table - 5.4 to 5.14 and Figures-5.2 to 5.3:

a. The multicollinearity problem was tested through Variance Inflation Factor (VIF), Eigenvalues and Condition Indices (CI), Correlation Matrix (CM), and Correlation Heatmap (CH).

b. Outlier Examination through COV Ratio (cov. r), Cook's distance (cook. d), and Hat Matrix values (hat).

c. The Heteroscedasticity problem was tested through Scatter Plot (SP), Breusch-Pagan **(**BP), and White test.

d. Normal distribution of error (NDE) was tested through Quantile-Quantile (Q-Q) plot, Anderson-Darling (AD) test, and Jarque-Bera (JB) test.

e. A specific test for panel regression was run using the Pesaran Cross-sectional Dependence **(**Pesaran CD) test and Lagrange Multiplier (LM) test.

Table- 5.4
Variance Inflation Factors (VIF)

Variable	VIF	1/VIF
LnNW	1.53	0.652585
LnTA	1.39	0.719900
BoardSize	1.23	0.814505
BoardInd	1.19	0.837245
Age	1.16	0.862153
OwnershipCon	1.06	0.946027
FamilyFirm	1.03	0.973617
Mean VIF	1.23	

Source: Compiled by the Researcher

Statistically, the standard threshold of VIF is 5 or 10. The VIF analysis of the table-5.4 reveals that all variables have VIF values below 5, with the highest being 1.53 (LnNW), and a mean VIF of 1.23, indicating no significant multicollinearity concerns. According

to standard benchmarks, VIF values below 5 suggest an acceptable level of multicollinearity, allowing for reliable interpretation of coefficients (Hair et al., 2010). Therefore, the dataset has very low multicollinearity (Mean value of the VIF is 1.40), which is acceptable by statistical standards.

Table- 5.5

Observation of the Outlier

	dffit	cov.r	cook.d	hat	inf
1	0.011817	1.014	1.40e-05	0.00445	
2	0.014270	1.014	2.04e-05	0.00457	
3	0.021980	1.014	4.84e-05	0.00477	
4	0.030590	1.013	9.36e-05	0.00478	
5	0.023275	1.014	5.42e-05	0.00500	
6	0.053554	1.010	2.87e-04	0.00515	
7	0.019670	1.015	3.87e-05	0.00589	
8	0.001306	1.016	1.71e-07	0.00629	
9	-0.004226	1.017	1.79e-06	0.00667	
10	0.015655	1.017	2.45e-05	0.00739	
11	0.028033	1.022	7.87e-05	0.01237	
12	0.051801	1.021	2.69e-04	0.01276	
13	0.054866	1.021	3.01e-04	0.01302	
14	0.055766	1.019	3.11e-04	0.01198	
15	0.063328	1.018	4.01e-04	0.01156	
16	0.065249	1.018	4.26e-04	0.01145	
17	0.071443	1.016	5.11e-04	0.01078	
18	0.014807	1.020	2.19e-05	0.01032	
19	-0.015623	1.020	2.44e-05	0.01023	
20	-0.020329	1.020	4.14e-05	0.01015	
21	0.574045	0.567	3.11e-02	0.00533	*
22	0.607265	0.561	3.48e-02	0.00585	*
23	0.019154	1.014	3.67e-05	0.00467	
24	0.020381	1.013	4.16e-05	0.00453	
25	-0.049981	1.012	2.50e-04	0.00592	

Source: Compiled by the Researcher

The output of the table – 5.5 is captured by using the data set in the R Software that shows regression diagnostics for potential influential observations (outliers that have a disproportionately substantial influence on the regression model) in a dataset. The

asterisks (*) in the "inf" column immediately draw attention to observations 21 and 22 as being potentially influential. From the Table -5.5 following issues are observed;

a. Cook's Distance (cook. d)- Large values suggest that the observation has a substantial impact on the regression coefficients.

b. DFFITs (dffit): Large absolute values of DFFIT suggest that the observation has a significant impact on the predicted values.

c. Hat matrix values (hat): High hat values indicate observations with high leverage. These observations might not necessarily be influential, but they have the potential to be.

d. COVRATIO (cov.r): Values far from 1 are worth investigating.

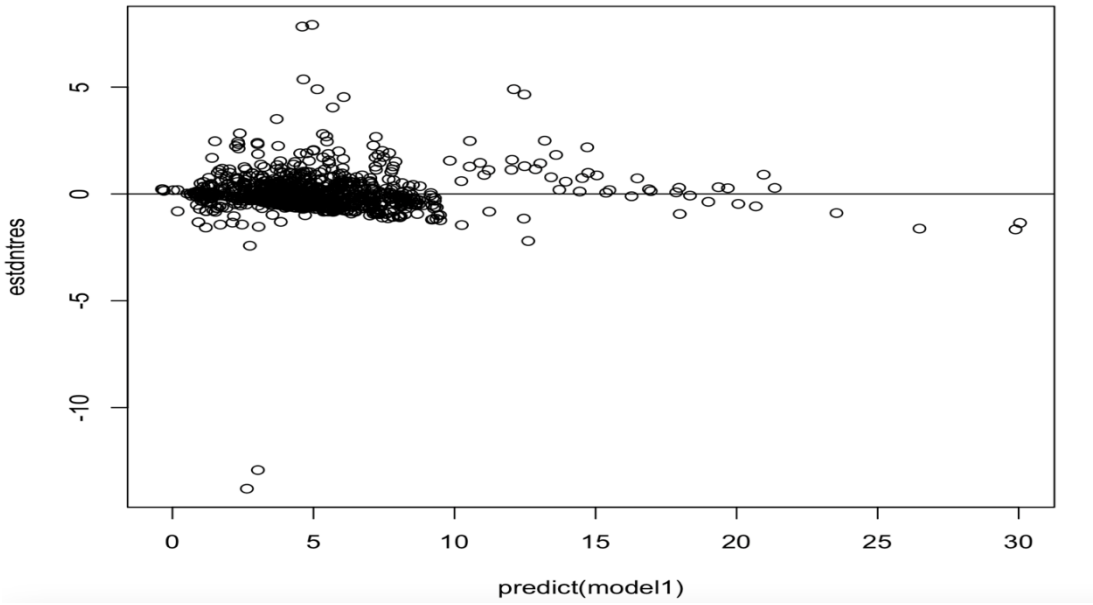
Table- 5.6
Analysis of the Outlier Outcome

Employed procedures	Threshold value	Key observation	Comment
COV Ratio	Far from 1, I suggest influential points. [range:1 ± 3p/n]	All observations were between 0.561 and 1.022.	There were no outliers.
Cook's distance	Large values indicate influential points [values greater than 4/n]	There were only two observations (21 and 22) above the threshold value	There were very few outliers.
Hat Values (Leverage).	0.0585 [values greater than 2p/n]	There were only two observations (21 and 22) that exceeded this threshold level.	There was a limited number of outliers.

- Please note that p is the number of predictors and n is the number of observations.
- The asterisks (*) indicate that observations 21 and 22 are flagged as potentially influential.

Source: Compiled by the Researcher

Figure- 5.1
Homoscedasticity and Heteroscedasticity (Scatter Plot)



Source: Compiled by the Researcher

The above Figure – 5.1 displays a scatter plot (SP) of standardized residuals against the expected result of the study model. This is a standard diagnostic plot used in regression analysis to assess the assumptions of linearity, homoscedasticity (constant variance of errors), and, to some extent, normality of the errors. The following key issues can be explained from the above figure;

i. Randomness: The majority of the residuals appear to be randomly scattered around zero, which is a good sign. This suggests that the linearity assumption is likely met for most of the data.

ii. Potential Heteroscedasticity: There might be a slight indication of increasing spread of residuals as the predicted values increase. However, it is not very pronounced.

iii. Possible Outliers: There are a few points that stand out as possible outliers (especially the ones with very high or very low standardized residuals). These points should be investigated further as they could be influencing our model.

Therefore, the plot suggests that the linearity assumption is reasonably met. There might be a slight indication of heteroscedasticity, but it's not severe.

Table- 5.7
Breusch-Pagan (BP) test

```
> bptest(model1)

        studentized Breusch-Pagan test

data:  model1
BP = 17.175, df = 9, p-value = 0.04604
```

Source: Compiled by the Researcher

Table 5.7 depicts the R analysis that shows the results of a BP test for heteroscedasticity of the study model. The output shows in a Tibble form (a modern data frame) with one row and several columns. It follows an asymptotic Chi-squared distribution under the null hypothesis of homoscedasticity (constant variance). Here, the p-value of 0.04604 is less than the conventional significance level of 0.05. Therefore, the null hypothesis of homoscedasticity is rejected, and it is statistically significant evidence of heteroscedasticity (non-constant variance of errors) in the study model.

Table- 5.8
White's test

```
> library(skedastic)
> white_test_result <- white(model1)
> print(white_test_result)
# A tibble: 1 × 5
  statistic p.value parameter method       alternative
      <dbl>   <dbl>     <dbl> <chr>        <chr>
1      19.9   0.338        18 White's Test greater
```

Source: Compiled by the Researcher

Table 5.8 provides an R analysis that shows the result of a White's test for heteroscedasticity. Here, the p-value of 0.338 is *larger* than the significance level of 0.05. Therefore, the null hypothesis of homoscedasticity cannot be rejected.

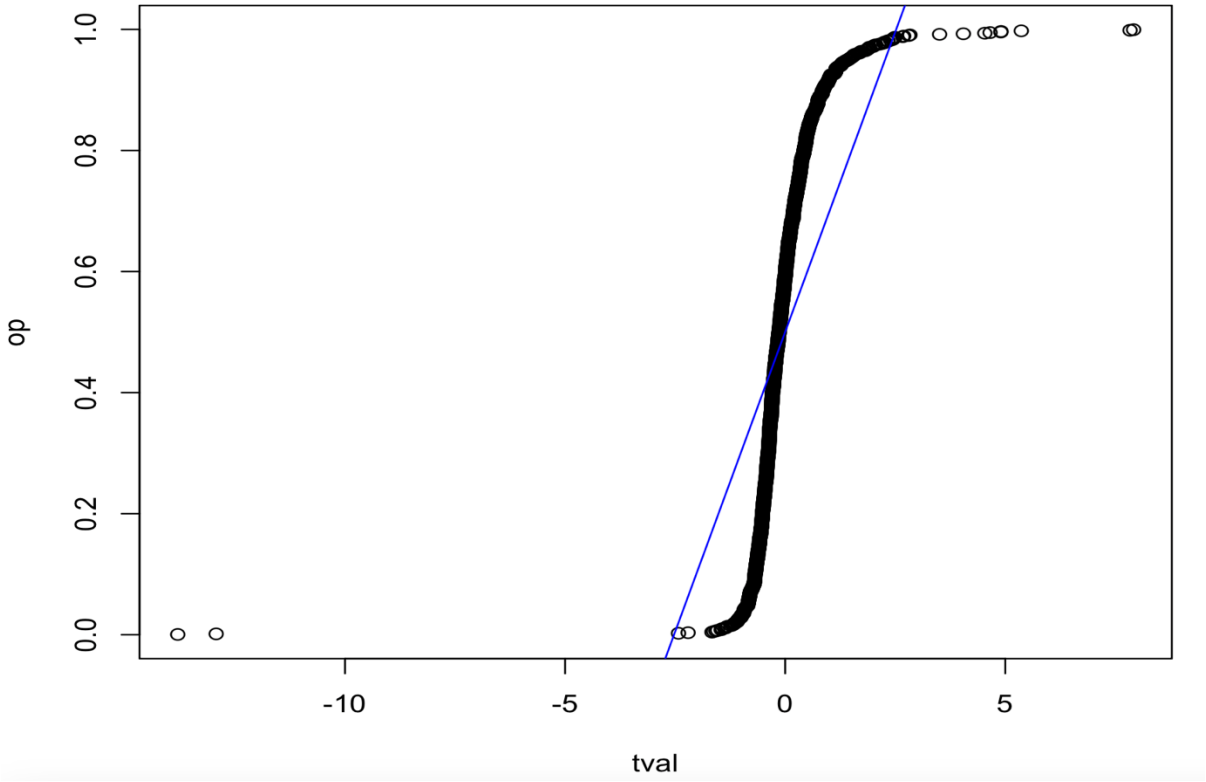
Table- 5.9
Summary of the Heteroscedasticity tests Outcome

Employed procedures	Threshold value	Key observation	Comment
Graphical method (Scatter Plot)	Using externally studentized residuals, the graph produces a fanning-out pattern, with residuals spreading out as the fitted values move from 0 toward the left and right.	This pattern suggests potential heteroscedasticity .	There were no outliers.
Breusch-Pagan test	The null hypothesis was rejected because of a very low p-value (0.046).	Probable heteroscedasticity marker	There were very few outliers.
White test	The null hypothesis was rejected because of a very low p-value (0.338).	Probable heteroscedasticity marker	There was a limited number of outliers.

Source: Compiled by the Researcher

Table 5.9 provides a summary of the Heteroscedasticity test results of the Scatter Plot (SP), Breusch -Pagan (BP) test, and White test. SP revealed no outliers, BP identified that there are very few outliers, and the White test detected a limited number of outliers are exist in the dataset, which is considerable in statistical results.

Figure- 5.2
Q-Q (Quantile-Quantile) Plot for NDE (Normal Distribution of Errors)



Source: Compiled by the Researcher

The Figure-5.2 shows a Q-Q (Quantile-Quantile) plot, which is a diagnostic tool used to assess whether a dataset (in this case, 'tval' data) follows a particular theoretical distribution, most commonly the normal distribution. The following key issues can be explained from this figure:

i. The majority of the points in the plot fall reasonably close to the transverse line. This suggests that the 'tval' data is approximately in the form of NDE for the central portion of the distribution.

ii. There are some noticeable deviations from the line at both the upper and lower tails of the distribution. This indicates that the tails of the 'tval' distribution are different from the tails of the normal distribution. Specifically, the Upper Tail of the 'tval' suggests that data has heavier tails in the positive direction than a normal distribution (potential outliers on the high end), and the Lower Tail of 'tval' denotes that data has heavier tails in the negative direction than a normal distribution (potential outliers on the low end).

iii. Therefore, the 'tval' data is approximately normally distributed in the middle range. There are deviations from normality in the tails, indicating heavier tails than a normal distribution and the presence of potential outliers.

Table - 5.10
Normal Distribution of Errors (Anderson-Darling test)

```
> library(nortest)
> ad_test_result <- ad.test(estdntres )
> print(ad_test_result)

        Anderson-Darling normality test

data:  estdntres
A = 61.846, p-value < 2.2e-16
```

Source: Compiled by the Researcher

Table-5.10 depicts NDE through R analysis of the Anderson-Darling test for normality. The result shows that the p-value (p-value < 2.2e-16) is much smaller than the significance level, like 0.05 or 0.01. Therefore, the null hypothesis of normality is strongly rejected, and the data (standardized residuals) are not generally distributed.

Table - 5.11
Normal Distribution of Errors (Jarque-Bera test)

```
> jb_test_result <- jarque.bera.test(estdntres)
> print(jb_test_result)

        Jarque Bera Test

data:  estdntres
X-squared = 169279, df = 2, p-value < 2.2e-16
```

Source: Compiled by the Researcher

Table-5.11 depicts NDE through R analysis of the Jarque-Bera test for normality. The result shows that the p-value (p-value < 0.000) is much smaller than the significance level, like 0.05 or 0.01. Therefore, the null hypothesis of normality is strongly rejected and the data set (standardized residuals) is not normally distributed.

Table - 5.12
Summary of the NDE (Normal Distribution of Errors) tests Output

Employed procedures	Key observation	Comment
Graphical method (Q-Q Plot)	The 'tval' data is approximately normally distributed in the middle range, with a heavy-tailed (in lower and upper tails) distribution found.	This pattern suggests that errors are not normally distributed (potential outliers on the low and upper ends).
Anderson-Darlin Test (AD Test)	The null hypothesis was rejected because of a very low p-value (< 2.2e-16)	Errors are not normally distributed.
Jerque-Bera Test (JB Test)	The null hypothesis was rejected because of a very low p-value (< 2.2e-16).	Errors are not normally distributed.

Source: Compiled by the researcher

Table 5.12 provides a summary of the 'tval' of Q-Q Plot, A-D Test and J-B Test denotes that Errors are not normally distributed.

Table-5.13
Specific tests for Panel Regression (Pesaran Cross-sectional Dependence test)

```
> pcdtest(model1, test = "cd")

        Pesaran CD test for cross-sectional dependence in panels

data:  ROA ~ FamilyFirm + OwnershipCon + BoardSize + BoardInd + Age +     LnTA + BoardCom1 + MarketCap1 + LnNetWorth
z = 11.62, p-value < 2.2e-16
alternative hypothesis: cross-sectional dependence
```

Source: Compiled by the Researcher

In Table 5.13, the Pesaran Cross-sectional Dependence **(**Pesaran CD) test is used to check the cross-sectional dependence in panel data. Test result outlined that z = 11.62, p-value < 0.0000. Under the null hypothesis of no cross-sectional dependence, this statistic is asymptotically normally distributed. P-value < 2.2e-16 is the probability of observing a test statistic as extreme as 11.62 (or even more extreme) if there were no cross-sectional dependence. P-value 2.2e-16 is a minimal number (approximately 0.00000000000000022), which is much smaller than the typical significance level of 0.05. Therefore, we reject the null hypothesis and conclude that there is a cross-sectional dependence in the data.

Table - 5.14
Specific tests for Panel Regression (Lagrange Multiplier Test)

```
> library(lmtest)
> bp_test <- plmtest(model3, type ="bp")
> bp_test

        Lagrange Multiplier Test - (Breusch-Pagan)

data:  ROA ~ FamilyFirm + OwnershipCon + BoardSize + BoardInd + Age +  ...
chisq = 557.52, df = 1, p-value < 2.2e-16
alternative hypothesis: significant effects
```

Source: Compiled by the Researcher

Table 5.14 explains the results of the Lagrange Multiplier (LM) Test to assess heteroskedasticity in panel data. It is observed that Chisq = 557.52, df = 1, and p-value < 2.2e-16. The p-value is extremely small than the significance level, like 0.05 or 0.01. This provides robust evidence to reject the null hypothesis of homoskedasticity (constant variance), i.e, Strong Evidence of Heteroskedasticity. Therefore, there is statistically significant heteroskedasticity in our panel data of the study. So, we should use appropriate methods like robust standard errors or Weighted Least Squares or Generalized Least Squares (WLS/GLS) to account for this in this analysis to obtain valid and efficient estimates.

5.6 Determinants of the Firm Performance

Several panel regressions were conducted to develop a model for determining a firm's performance. Before conducting panel regressions, it was essential to determine whether the estimated effects would align with a Random Effects Method (REM) or Fixed Effects Method (FEM). At a conceptual level, the process of making this choice is straightforward. A FEM asserts the presence of cross-sectional heterogeneity within the dataset, which can be effectively addressed within the established framework. Conversely, within the

framework of the REM, it is posited that cross-sectional heterogeneity is absent—an assumption that is both highly restrictive and impractical. Conducting the Wu-Durbin-Hausman test allows for the assessment of whether a fixed-effects model or a random-effects model is more appropriate for the analysis at hand. The null and alternative hypotheses pertinent to the Wu-Durbin-Hausman test are delineated as follows:

Null Hypothesis: The panel regression under consideration is more effectively explained through the random effects framework.

Alternative Hypothesis: The panel regression under consideration is more effectively explained through the fixed effects framework.

Hypotheses were evaluated at a 95% confidence level. Among the various regression models examined, the fixed effects model emerges as the most favorable choice. Panel regressions are conducted within the framework of ordinary least squares, which necessitates that these regressions adhere to specific preconditions associated with OLS methodology. The pre-conditions are as follows:

a) The anticipated association delineated between the factor and the independent variable is linear.

b) The data are gathered utilizing a method of random sampling.

c) The covariance, and consequently the correlation, between independent variables and the error term is zero.

d) There is an absence of perfect multicollinearity among the pairs of independent variables.

The panel regression model of the study was as follows:

$$ROA_{i,t} = \alpha + \sum_{i=1}^{9} \beta_i \, Firm\text{-}specific\ factors_{i,t} + \sum_{j=1}^{2} \beta_j \, Macro\text{-}economic\ factors_t + a_i + \varepsilon_{i,t}$$

In the above-mentioned model, ROA is the dependent variable, and the researcher has tried to estimate a determinant model for ROA. $\varepsilon_{i,t}$ refers to the disturbance element, and it can be decomposed into three sub-components: cross-sectional, time-invariant heterogeneity (ω_i), time effect (δ_t), and noise ($\gamma_{i,t}$). It is worth mentioning that the cross-sectional heterogeneity of the model, denoted by 'a_i,' was eliminated as per the fixed effects estimation methodology.

Table - 5.15
Hausman test results

	Coefficients (b) fe_model	(B) re_model	(b-B) Difference	sqrt(diag(V_b-V_B)) Std. err.
ownershipcon	.0572227	.0676602	-.0104375	.0244549
boardsize	-.2374397	-.1131205	-.1243192	.096812
boardind	-.0895885	-.0825934	-.0069952	.0136392
age	-.3991208	-.0445477	-.3545731	.0674546
lnta	.1050244	-.5832724	.6882968	.2512826
boardcom1	-.3111348	-.7951501	.4840153	.1798405
marketcap1	.0000378	.0000556	-.0000178	9.40e-06
lnnetworth	1.462097	.6330922	.8290045	.3157656

b = Consistent under H0 and Ha; obtained from xtreg.
B = Inconsistent under Ha, efficient under H0; obtained from xtreg.

Test of H0: Difference in coefficients not systematic

chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 35.68
Prob > chi2 = 0.0000

Source: Compiled by the researcher

Table 5.15 presents the results of the Hausman test, which assesses whether there is a systematic difference between the coefficients of the FEM and the REM. The test yields $Chi^2(7) = (b - B)'[(Vb - VB)^{-1}](b - B) = 35.68$, where $Chi^2(7)$ refers to a chi-squared distribution with seven degrees of freedom, corresponding to the number of variables

compared. The p-value (Prob > Chi^2) is 0.0000, which is well below conventional significance thresholds such as 0.05 or 0.01. This indicates that the likelihood of obtaining a chi-squared statistic of 35.68 or greater under the null hypothesis is essentially zero. Consequently, the null hypothesis is rejected, providing strong statistical evidence that the REM is inconsistent. Therefore, the FEM is identified as the more appropriate model for this panel data analysis.

5.6.1 Model Implementation for the Study

From the direction given by the Hausman test result (Table -5.15), FEM was used in the baseline regression of this study. Moreover, for a better understanding, Pooled Ordinary Least Squares (Pooled OLS), Panel Corrected Standard Errors (PCSE) regression, and REM were also run. The result of these models is shown in tables- 5.16 to 5.19;

Table - 5.16
Baseline Regression- Fixed effects model result

	Model 1
VARIABLES	Fixed effects model
familyfirm	2.531
	(0.898)
ownershipcon	0.0523*
	(1.657)
boardsize	-0.236**
	(-2.019)
boardind	-0.0899***
	(-3.285)
age	-0.400***
	(-5.569)
lnta	0.113
	(0.371)
boardcom1	-0.302
	(-0.875)
marketcap1	3.77e-05**
	(2.453)
lnnetworth	1.452***
	(3.307)
Constant	11.51*
	(1.690)
Observations	1,037
Number of code	104
R-squared	0.072
Firm FE	Yes
Firm Cluster	No
Seasonal adjustment	No
R2 within	0.0719
R2 overall	0.000601
R2 between	0.000182
F-stat	7.950
Prob > F	0
t-statistics in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Source: Compiled by the researcher

The baseline findings of the Fixed Effects Model (FEM) regression, which includes 1,039 observations from 104 distinct firms, are shown in Table 5.16. About 7.2% of the variation in the dependent variable can be explained by the model, according to its R-squared value of 0.072. The model is confirmed to be statistically significant at the 1% level by the F-statistic, which produces a Prob > F = 0.000.

Important inferences include the following: family-owned businesses typically show higher values of the dependent variable (e.g., better performance) than non-family businesses, according to the Family Firm (familyfirm) coefficient of 2.531. Larger boards are associated with lower dependent variable values, according to Board Size (boardsize), which has a coefficient of -0.236 and is significant at the 5% level. Both company age (age, −0.400**) and board independence (boardind, −0.0899**) have negative, highly significant ($p < 0.01$) coefficients, suggesting that older firms and more independent boards typically have lower dependent variable values. At the 5% level, market capitalization (marketcap1, 3.77e−05) is positive and significant, suggesting that higher dependent variable values are correlated with larger market capitalisation. Higher net worth is linked to stronger dependent variable values, according to the positive and highly significant natural log of net worth (lnnetworth, 1.452**).

Overall, the FEM results highlight several significant firm-level factors influencing the dependent variable, though the relatively low R-square implies that unobserved, firm-specific characteristics remain important in explaining performance differences.

Table - 5.17
Pooled OLS regression results

```
. reg roa familyfirm ownershipcon boardsize boardind age lnta boardcom1 marketcap1 lnnetworth
```

Source	SS	df	MS	Number of obs	=	1,037
				F(9, 1027)	=	26.57
Model	10704.1154	9	1189.34615	Prob > F	=	0.0000
Residual	45963.3299	1,027	44.7549463	R-squared	=	0.1889
				Adj R-squared	=	0.1818
Total	56667.4452	1,036	54.6983062	Root MSE	=	6.6899

roa	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
familyfirm	1.247025	.6856694	1.82	0.069	-.0984476	2.592498
ownershipcon	.0665739	.0110632	6.02	0.000	.0448648	.0882829
boardsize	-.0038329	.0379659	-0.10	0.920	-.0783324	.0706666
boardind	-.0378874	.0188224	-2.01	0.044	-.0748221	-.0009527
age	-.0091536	.0129914	-0.70	0.481	-.0346464	.0163392
lnta	-.5477349	.1021856	-5.36	0.000	-.7482513	-.3472186
boardcom1	-.8103745	.2424593	-3.34	0.001	-1.286147	-.3346024
marketcap1	.0000776	8.46e-06	9.18	0.000	.000061	.0000942
lnnetworth	.2207545	.1989572	1.11	0.267	-.1696545	.6111636
_cons	13.5674	2.239851	6.06	0.000	9.172193	17.96261

Source: Compiled by the Researcher

The Pooled OLS regression findings are shown in Table 5.17. The model explains approximately 18.89% of the variation in ROA, with an R-squared value of 18.89%. The model is statistically significant at both the 5% and 1% confidence levels, according to the F-statistic of 26.57 and the p-value of 0.0000. The natural log of total assets (lnta), market capitalisation (marketcap1), ownership concentration (ownershipcon), board independence (boardind), and board committee (boardcom1) are all statistically significant at the 5% level, indicating that they have a significant impact on ROA. With a p-value of 0.069, Family Firm (familyfirm) is marginally significant. On the other hand, there is no

discernible impact on ROA because Board Size (boardsize), Age (age), and the natural log of Net Worth (lnnetworth) are not statistically significant ($p > 0.05$).

Overall, the findings indicate a relationship between ROA and various governance and firm-specific traits, but the comparatively low explanatory power raises the possibility that additional, unobserved factors may also be crucial.

Table - 5.18
Prais-Winsten regression Model with PCSEs (Panel-Corrected Standard Errors)

```
. xtpcse roa familyfirm ownershipcon boardsize boardind age lnta boardcom1 marketcap1 lnnetworth,hetonly

Linear regression, heteroskedastic panels corrected standard errors

Group variable:   code                        Number of obs     =      1,037
Time variable:    year                        Number of groups  =        104
Panels:           heteroskedastic (unbalanced) Obs per group:
Autocorrelation:  no autocorrelation                        min =          9
                                                            avg =  9.9711538
                                                            max =         10
Estimated covariances      =       104        R-squared         =     0.1889
Estimated autocorrelations =         0        Wald chi2(9)      =     214.98
Estimated coefficients     =        10        Prob > chi2       =     0.0000

------------------------------------------------------------------------------
             |             Het-corrected
         roa |Coefficient  std. err.      z    P>|z|     [95% conf. interval]
-------------+----------------------------------------------------------------
  familyfirm |   1.247025   .4671062     2.67   0.008      .331514    2.162537
ownershipcon |   .0665739   .0111083     5.99   0.000      .0448021    .0883456
   boardsize |  -.0038329   .0246014    -0.16   0.876     -.0520508    .044385
   boardind  |  -.0378874   .0313271    -1.21   0.227     -.0992873    .0235125
         age |  -.0091536   .0123684    -0.74   0.459     -.0333952    .015088
        lnta |  -.5477349    .097142    -5.64   0.000     -.7381298    -.35734
   boardcom1 |  -.8103745   .2256674    -3.59   0.000     -1.252674   -.3680745
  marketcap1 |   .0000776   9.87e-06     7.87   0.000      .0000583    .000097
  lnnetworth |   .2207545   .1750915     1.26   0.207     -.1224185    .5639276
       _cons |    13.5674   1.905693     7.12   0.000       9.83231    17.30249
------------------------------------------------------------------------------
```

Source: Compiled by the Researcher

The findings of the Prais–Winsten regression model with Panel-Corrected Standard Errors (PCSEs) are shown in Table 5.18. The model has a relatively low R-squared, explaining around 18.89% of the variation in ROA. With a p-value of 0.0000, the Wald chi-squared statistic verifies that the model is statistically significant overall, indicating that at least one explanatory variable significantly affects ROA.

Family Firm (familyfirm, 1.247), the main focus variable, has a positive and statistically significant coefficient (p = 0.008), suggesting that, when all other factors are kept constant, family-owned businesses often generate better ROA than non-family businesses. Additionally, positive and very significant (p = 0.000) is Ownership Concentration (ownershipcon, 0.0665), indicating a relationship between higher ROA and increased ownership concentration. Board Size (boardsize, -0.0383), on the other hand, is negative but not significant (p = 0.876), suggesting that there is no significant correlation between this specification and ROA.

Older firms often have lower ROA, as evidenced by the negative and significant (p = 0.000) Firm Age (age, −0.0091). Likewise, the negative and significant natural log of Total Assets (lnta, −5.477) (p = 0.000) indicates that lower ROA is linked to greater asset bases (in logs). In contrast to what is typically expected, the Board Committee (boardcom1, −0.8103) is both negative and significant (p = 0.000), suggesting that a higher percentage of independent directors on the board is associated with lower ROA. Endogeneity problems, missing data, or other unobserved factors may be the cause of this surprise discovery, which calls for more research.

Overall, even while the model finds a number of important firm-level factors that affect ROA, the low R-squared value suggests that many important factors are still not taken into consideration. More research is necessary to fully understand the unfavorable relationship between board independence and ROA.

Table - 5.19
Random effects model

```
. xtreg roa familyfirm ownershipcon boardsize boardind age lnta boardcom1 marketcap1 lnnetworth,re

Random-effects GLS regression                   Number of obs     =      1,037
Group variable: code                            Number of groups  =        104

R-squared:                                      Obs per group:
     Within  = 0.0397                                         min =          9
     Between = 0.2845                                         avg =       10.0
     Overall = 0.1655                                         max =         10

                                                Wald chi2(9)      =      78.35
corr(u_i, X) = 0 (assumed)                      Prob > chi2       =     0.0000
```

roa	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
familyfirm	1.402347	1.460291	0.96	0.337	-1.459772	4.264465
ownershipcon	.0676602	.0191997	3.52	0.000	.0300295	.1052909
boardsize	-.1131205	.0652013	-1.73	0.083	-.2409128	.0146717
boardind	-.0825934	.0237082	-3.48	0.000	-.1290606	-.0361261
age	-.0445477	.0244652	-1.82	0.069	-.0924986	.0034032
lnta	-.5832724	.1733504	-3.36	0.001	-.9230328	-.2435119
boardcom1	-.7951501	.2948383	-2.70	0.007	-1.373022	-.2172777
marketcap1	.0000556	.0000122	4.56	0.000	.0000317	.0000794
lnnetworth	.6330922	.3049317	2.08	0.038	.035437	1.230747
_cons	15.28307	3.924782	3.89	0.000	7.590638	22.9755
sigma_u	4.1445475					
sigma_e	5.2592725					
rho	.383103	(fraction of variance due to u_i)				

Source: Compiled by the Researcher

The REM regression findings are shown in Table 5.19. The model explains roughly 16.55% of the variation in ROA, with an R-squared value of 0.1655. The Wald chi-squared test, possessing 9 degrees of freedom, yields a p-value near zero, signifying the overall statistical significance of the model. The major findings are outlined below:

a. Ownership Concentration (ownershipcon, 0.0676) exhibits a positive and statistically significant relationship (p = 0.000) with ROA, indicating that increased ownership concentration correlates with higher returns on assets.

b. The variable Family Firm (familyfirm, 1.402) shows a positive effect, yet it is not statistically significant (p = 0.337), suggesting no substantial influence on ROA in this model. The coefficient for Board Size (boardsize, −0.1131) is

negative and statistically significant at the 10% level (p = 0.083), indicating that larger boards are correlated with a decrease in ROA.

c. Board independence (boardind, −0.0825) exhibits a negative and statistically significant relationship (p = 0.000), indicating that an increased proportion of independent directors is associated with a decrease in ROA.

d. The coefficient for Firm Age (age, −0.0445) is negative and not statistically significant (p = 0.069), indicating a lack of a robust relationship with ROA.

e. The natural logarithm of Total Assets (lnta, −5.832) is statistically significant and negative (p = 0.001), suggesting that larger asset bases correlate with reduced ROA.

f. The Board Committee (boardcom1, −0.795) exhibits a negative and significant relationship (p = 0.007), indicating that increased board independence in committees correlates with a decrease in ROA—an unexpected finding.

g. Market Capitalization (marketcap1, 0.00055) is statistically significant (p = 0.000), indicating a positive correlation between larger market capitalisation and higher ROA.

h. The natural logarithm of Net Worth (lnnetworth, 0.633) is both positive and statistically significant (p = 0.038), suggesting that firms with greater net worth generally exhibit improved ROA.

The REM results affirm the model's statistical significance while indicating a limited explanatory power, implying the potential influence of unobserved factors on ROA. The observed negative relationships between Board Independence and Board Committee

contradict established governance expectations, necessitating further examination. The suitability of the random effects assumption requires thorough evaluation.

5.6.2 Managing Endogeneity through Omitted Variables for the Study

In statistical and econometric analysis, endogeneity is a crucial problem since it can result in skewed and inconsistent coefficient estimates. This occurs when an independent variable is correlated with the regression error term, thereby violating a key assumption of ordinary least squares (OLS) regression. This correlation may arise from factors including omitted variable bias, simultaneity, reverse causality, measurement error, or sample selection bias.

Researchers can mitigate endogeneity through various strategies, such as utilizing instrumental variables (IV), applying two-stage least squares (2SLS), implementing the Heckman correction, incorporating relevant control variables, employing panel data techniques, and introducing lagged variables. This study presents the procedures and results in Tables 5.20 to 5.21, which address endogeneity concerns and ensure the robustness and reliability of the empirical findings.

Table - 5.20
Managing endogeneity (Omitted variable bias channel)

	(1)	(2)	(3)
VARIABLES	Model 1: Omitted variable 1 (Inflation)	Model 2: Omitted variable 2 (GDP)	Model 3: Combined effec (Inflation a& GDP)
familyfirm	2.538	2.436	2.466
	(0.900)	(0.868)	(0.879)
ownershipcon	0.0522*	0.0572*	0.0572*
	(1.652)	(1.816)	(1.817)
boardsize	-0.238**	-0.214*	-0.223*
	(-2.028)	(-1.837)	(-1.911)
boardind	-0.0901***	-0.0942***	-0.0965***
	(-3.289)	(-3.453)	(-3.533)
age	-0.392***	-0.401***	-0.342***
	(-4.813)	(-5.610)	(-4.161)
lnta	0.116	0.0518	0.0628
	(0.380)	(0.170)	(0.206)
boardcom1	-0.298	-0.321	-0.293
	(-0.861)	(-0.932)	(-0.850)
marketcap1	3.79e-05**	3.21e-05**	3.22e-05**
	(2.459)	(2.080)	(2.089)
lnnetworth	1.448***	1.407***	1.371***
	(3.294)	(3.216)	(3.131)
inflation	0.0597		0.435
	(0.211)		(1.440)
gdpgrowth		0.601***	0.714***
		(3.050)	(3.368)
Constant	10.83	8.809	3.379
	(1.439)	(1.289)	(0.433)
Observations	1,037	1,037	1,037
R-squared	0.072	0.081	0.083
Number of code	104	104	104
Firm FE	Yes	Yes	Yes
Firm Cluster	No	No	No
seasonal adjustment	No	No	No
R2 within	0.0719	0.0811	0.0832
R2 overall	0.000787	0.000754	0.00302
R2 between	8.52e-05	0.000234	0.000318
F-stat	7.152	8.149	7.606
Prob > F	6.38e-11	0	0
t-statistics in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

Source: Compiled by the Researcher

The table 5.20 presents the results of three regression models attempting to explain some outcome (likely a financial or performance metric) using a set of independent variables. The key issue is that the models are mis-specified, leading to biased and inconsistent estimates. This is evident from the different variables omitted in each model. Model 1 includes all the standard firm-level controls and the inflation variable. It omits the GDP

growth (gdpgrowth) variable. Model 2 includes all the standard firm-level controls and the GDP growth (gdpgrowth) variable. It omits the inflation variable. Model 3 includes all the standard firm-level controls, both inflation and GDP growth (gdpgrowth.)

Analysis of Coefficients (by using Model 1)

The following are the main findings of managing endogeneity (by omitted variable bias channel) analysis: Family firms demonstrate, on average, a dependent variable value that is 2.538 units greater than that of non-family firms; however, this difference lacks statistical significance ($p > 0.1$). Ownership concentration (ownershipcon, 0.0522) exhibits a positive correlation with the dependent variable and is statistically significant at the 10% level ($p < 0.1$). The variable Board Size (boardsize, −0.238) exhibits a negative and statistically significant effect at the 5% level ($p < 0.05$), suggesting that an increase in board size correlates with decreased values of the dependent variable. Board independence (boardind, −0.0901) and age (age, −0.392) exhibit negative coefficients that are statistically significant at the 1% level ($p < 0.01$). This indicates that increased board independence and greater firm age are associated with lower values of the dependent variable.

The natural logarithm of Total Assets (lnta, 0.116) and Board Committee (boardcom1, −0.298) do not exhibit statistical significance. Market Capitalisation (marketcap1, 3.79e−05) exhibits a positive and significant relationship at the 5% level ($p < 0.05$). In contrast, the natural log of Net Worth (lnnetworth, 1.448) demonstrates a positive and highly significant association at the 1% level ($p < 0.01$). Inflation (0.0597) demonstrates a positive correlation; however, it lacks statistical significance.

Analysis of Coefficients (by using Model 2 and 3)

We can also interpret the coefficients in Models 2 and 3, accordingly to Model 1, focusing on the magnitude, direction, and statistical significance of each effect. The Table- 5.21 summarizes the coefficients from the regression output of the endogeneity correction by the omitted variable bias channel.

Table - 5.21
Results of the Managing Endogeneity Issues
(Through the Omitted Variable Bias channel)

Model -1 (Omitted GDP Growth)			**Model -2 (Omitted Inflation)**		**Model -3 (Omitted GDP and Inflation)**	
Variables	**Output**	**Effect**	**Output**	**Effect**	**Output**	**Effect**
familyfirm	2.538	Not significant	2.436	Not significant	2.466	Not significa
ownershipcon	0.0522*	Significant	0.0572*	Significant	0.0572*	Significa
boardsize	-0.238**	Significant	-0.214*	Significant	-0.223*	Significa
boardind	-0.0901***	Significant	-0.0942***	Significant	-0.0965***	Significa
age	-0.392***	Significant	-0.401***	Significant	0.342***	Significa
lnta	0.116	Not Significant	0.0518	Not Significant	0.0628	Not Significa
boardcom1	-0.298	Not Significant	-0.321	Not Significant	-0.293	Not Significa
marketcap1	3.79e-05**	Significant	3.21e-05**	Significant	3.22e-05**	Significa
lnnetworth	1.448***	Significant	1.407***	Significant	1.371***	Significa
inflation	0.0597	Not Significant			0.435	Not Significa
gdpgrowth			0.601***	Significant	0.714***	Significa
Constant	10.83		8.809		3.379	
Observations	1,037		1,037		1,037	
Number of codes	104		104		104	
Firm FE	Yes		Yes		Yes	
Firm Cluster	No		No		No	
R-squared	0.072		0.081		0.083	
R2 within	0.0719		0.0811		0.0832	
R2 overall	0.000787		0.000754		0.00302	
R2 between	8.52e-05		0.000234		0.000318	
F-stat	7.152		8.149		7.606	
Prob > F	6.38e-11		0		0	
t-statistics in parentheses						
Significant level @ P<0.01=***, P<0.05=**, P<0.1=*						

Source: Compiled by the Researcher

Analysis of the Coefficients (by using Model 2)

The R-squared value of 0.081, as indicated in Table 5.21, is still quite low but slightly higher than that of Model 1 (0.072). The model's overall statistical significance is confirmed by the highly significant F-statistic of 8.149 (Prob > F = 0). Ownership concentration (ownershipcon, 0.0572*, P<0.1), market capitalisation (marketcap1, 3.21e-05**, P<0.05), the logarithm of net worth (lnnetworth, 1.407***, P<0.01), the GDP growth rate (gdpgrowth, 0.601***, P<0.01), firm age (age, -0.401***, P<0.01), and board size (boardsize, 0.214**, P<0.05) are all variables that have a significant effect on GDP. On the other hand, it is determined that the presence of a board committee (boardcom1), the logarithm of total assets (lnta, 0.0518), and family business status (familyfirm) have no statistically significant impact on GDP.

Analysis of the Coefficients (by using Model 3)

The R-squared value (0.083), as shown in Table 5.21, is marginally higher than Model 2's (0.081), although it is still quite low. The model's overall statistical significance is confirmed by the highly substantial F-statistic (7.606) (Prob > F = 0). Market capitalization (marketcap1, 3.22e-05**; p<0.05), ownership concentration (ownershipcon, 0.0572*; p<0.1), board size (boardsize, 0.223**; p<0.05), board independence (boardind, -0.0965***; p<0.01), firm age (age, -0.342***; p<0.01), log value of net worth (lnnetworth, 1.371***; p<0.01), GDP growth rate (gdpgrowth, 0.714***; p<0.01), and ownership concentration (ownershipcon, 0.0572*; p<0.1) are among the variables that exhibit a statistically significant impact on GDP. On the other hand, the log value of total assets (lnta, 0.0628), board committee (boardcom1), and family firm status (familyfirm) do not statistically significantly explain GDP.

Overall, the three models depicted in Table 5.20 investigate the connection between firm-specific attributes and the dependent variable, evaluating the effects of including or excluding macroeconomic variables like GDP growth and inflation. Ownership concentration is consistently significant at the 10% level, even though the size and statistical significance of some variables vary based on the model specification. Therefore, the researcher can accomplish the analysis as follows:

a. The ownership concentration is consistently associated with higher GDP and inflation.

b. Board Size: Higher GDP and inflation are linked to larger boards.

c. Board Independence: Lower GDP and inflation are consistently correlated with greater board independence.

d. Firm Age: Lower GDP and inflation are typically associated with older firms.

e. Net Worth: increased GDP and inflation are linked to increased net worth.

In a word, the low R-squared values of all three models show that there are other significant factors that the models are unable to account for, as they only explain a small portion of the variation in the dependent variable.

5.6.3 Test of Robustness of the Study Results

A robustness test, to put it simply, evaluates how well a study's findings withstand changes to certain parts of the research process. Researchers can provide a more thorough and reliable interpretation of their findings by methodically testing the data' sensitivity. Two robustness tests were performed for this investigation, and the results are shown in Tables 5.22 to 5.23.

The results of a linear regression model with firm fixed effects are shown in Table 5.22. The dataset was winsorized, which limits the impact of extreme outliers by capping values

above or below predetermined percentiles. By using this method, the model becomes less susceptible to extreme data points. Here, 1,037 observations from 104 distinct firms are included in the dataset. According to the R-squared value of 0.00423, less than 1% of the variation in the dependent variable can be explained by the model. The Prob > F value of 0.000 indicates that the model is statistically significant at the 1% level ($p < 0.01$), according to the F-statistic, which evaluates the model's overall importance. This suggests that the dependent variable is significantly impacted by at least one of the independent factors.

The major coefficients of the regression result included the coefficient for family firm (2.776*) is significant at the $p < 0.1$ level. This means there is some evidence that family-controlled firms have a different value for the dependent variable compared to non-family firms, after controlling for other factors. The coefficient for board size (boardsize, -0.142**) is significant at the $p < 0.05$ level, suggesting a statistically significant negative relationship between board size and the dependent variable.

Table - 5.22
Robustness test 1 (Winsorized data)

	(1)
VARIABLES	Model 1: Winsorized data
familyfirm	2.776*
	(1.716)
ownershipcon	0.0278
	(1.524)
boardsize	-0.142**
	(-2.121)
boardind	-0.0220
	(-1.401)
agew	-0.282***
	(-6.826)
lnta	-0.225
	(-1.283)
boardcom1	-0.590***
	(-2.985)
marketcap1w	5.68e-05***
	(5.282)
lnnetworth	0.993***
	(3.948)
Constant	16.74***
	(4.282)
Observations	1,037
Number of code	104
R-squared	0.121
Firm FE	Yes
Firm Cluster	No
seasonal adjustment	No
R2 within	0.121
R2 overall	0.00423
R2 between	0.000873
F-stat	14.10
Prob > F	0
t-statistics in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Source: Compiled by the Researcher

Similarly, the coefficient for age (age, -0.282***) is highly significant ($p < 0.01$), suggesting that the dependent variable and a firm's age have a strong negative connection. The Board committee variable (boardcom1, -0.590***) is statistically significant ($p < 0.01$), indicating a robust negative correlation. Market capitalisation (marketcap1w, 5.68e-05***) exhibits a highly significant positive correlation ($p < 0.01$). Similarly, the logarithmic value of net worth (lnnetworth, 0.993***) is also highly significant ($p < 0.01$) and positively related to the dependent variable. Conversely, ownership concentration (ownershipcon) and the logarithm of total assets (lnta) do not exhibit statistical significance ($p > 0.1$).

This fixed-effects regression model examines the impact of firm-specific characteristics and board attributes on the dependent variable, while controlling for unobserved, time-invariant firm factors. The model demonstrates statistical significance; however, the R-squared value reveals that it accounts for only a small portion of the variation in the dependent variable. Multiple independent variables exhibit significant relationships, varying in both direction and magnitude.

Table - 5.23
Robustness test 2 (Cross-sectional heterogeneity)

	Heterogeneity source: Size		Heterogeneity Source: Firm age	
	Model 1: Large cap	Model 2: Small cap	Model 1: Mature firm	Model 2: Young firm
familyfirm	1.326	8.227	1.206	2.410
	(0.0492)	(0.141)	(0.00989)	(0.458)
ownershipcon	0.363*	0.0925	0.453	0.0432
	(1.675)	(0.111)	(0.472)	(0.529)
boardsize	0.0124	3.528	6.161	-0.494
	(0.0165)	(1.123)	(1.447)	(-1.354)
boardind	-0.0945	0.0326	0.141	-0.109
	(-0.583)	(0.0384)	(0.190)	(-1.379)
age	-0.587	2.808	3.621	-0.706***
	(-1.185)	(1.356)	(1.414)	(-3.397)
lnta	-0.733	41.50***	18.69	0.822
	(-0.231)	(2.594)	(1.282)	(1.427)
boardcom1	0.551	-29.44***	-28.64**	0.370
	(0.221)	(-3.422)	(-2.547)	(0.430)
marketcap1	-4.27e-05	-0.000380	-0.000369	6.41e-05
	(-0.420)	(-0.880)	(-0.931)	(1.351)
lnnetworth	-2.124	-3.290	0.202	-0.556
	(-0.658)	(-0.288)	(0.0177)	(-0.412)
Constant	50.18	-872.6***	-592.5*	12.27
	(0.649)	(-3.154)	(-1.913)	(0.928)
Observations	490	547	419	603
R-squared	0.024	0.056	0.045	0.062
Number of code	59	65	50	69
Firm FE	Yes	Yes	Yes	Yes
Firm Cluster	No	No	No	No
seasonal adjustment	No	No	No	No
R2 within	0.0245	0.0555	0.0448	0.0615
R2 overall	0.000336	0.00578	0.0255	0.0364
R2 between	0.00522	0.00118	0.0196	0.0364
F-stat	1.177	3.089	1.875	3.826
Prob > F	0.308	0.00129	0.0545	0.000106
t-statistics in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

Source: Compiled by the Researcher

Table 5.23 displays the findings of robustness test 2, which examines cross-sectional heterogeneity by analyzing the relationship between different firm characteristics and the dependent variable through four distinct panel data regressions. The analysis is divided

along two dimensions of firm heterogeneity: firm size and firm age. In the firm size category, Model 1 evaluates large-cap firms, while Model 2 assesses small-cap firms. Similarly, in the firm age category, Model 1 analyzes mature firms, whereas Model 2 examines young firms. This setup allows for a comparison between large-cap and small-cap firms (Model 1 vs. Model 2) as well as between mature and young firms (Model 1 vs. Model 2)

Interpretation of Coefficients (Model 1: Large cap firms)

Table 5.23 indicates that the coefficient for Family Firm (familyfirm, 1.326) lacks statistical significance ($p > 0.1$). Ownership concentration (ownershipcon, 0.363) is statistically significant at the 10% level ($p < 0.1$). Additional variables—such as board size (boardsize, 0.0124), board independence (boardind, −0.0945), firm age (age, −0.587), logarithm of total assets (lnta, −0.733), board committee (boardcom1, 0.551), market capitalization (marketcap1, −4.27e-05), and logarithm of net worth (lnnetworth, −2.124)—lack statistical significance.

An analysis of coefficients, statistical significance, and model summary statistics across the four regressions in Table 5.23 reveals the following insights:

a) Family firms (familyfirm)-The coefficient is positive and statistically significant for small-cap enterprises, but not for large-cap firms, indicating that the influence of family ownership is contingent upon firm size.

b) Firm age (age): The coefficient for young firms is negative and significant, but for older firms it is positive but not significant, suggesting a possible non-linear relationship between firm age and the dependent variable.

c) The board committee (boardcom1) exhibits a pronounced negative and statistically significant correlation with the dependent variable in both small-

cap and mature firms, but not in large-cap or young firms, indicating that its impact is contingent upon firm characteristics.

Overall, the R-squared values vary among the models, indicating that the explanatory capacity of the independent variables fluctuates based on company size and age category. The cross-sectional study corroborates the proposed positive correlation between business performance and family ownership concentration; however, the intensity of this relationship differs between small and large enterprises, as well as between mature and young firms.

In brief, the hypothesized positive relationship between firm performance and family ownership concentration is supported in the cross-sectional regression; however, the magnitude of the regression coefficient changes in the small-to-large firm case and the mature-to-young firm case.

Chapter- Six
Summary and Conclusion

This thesis examines the relationship among family ownership, corporate governance practices, and firm performance within publicly listed companies in Bangladesh from 2015 to 2024. With structural changes in rules and regulations in both domestic and international arenas, there have been numerous aspects to be addressed for CG practices and firm performance. This study, rooted in CG theories such as agency theory, stewardship theory, stakeholder theory, institutional theory, and resource dependency theory, investigates the impact of family business characteristics and governance mechanisms on financial performance, assessed through return on assets (ROA), return on equity (ROE), and net worth. Chapter two of this thesis provides an extensive literature review on family ownership, corporate governance practices, and firm performance across various international and domestic contexts, illustrating the diversity of methodologies and findings.

Available literature suggests that an in-depth examination of both earlier and recent studies focusing on the concentration of family ownership, the role of corporate governance, and how these factors are linked to a firm's financial performance is needed. Family-owned businesses make up a significant portion of the global economy, as revealed in different studies and research. For example, Anderson and Reeb (2003) noted that over one-third of S&P 500 firms are family-owned. In 2018, a Global survey on Family Business by PwC (Price Waterhouse Coopers), London, UK, highlighted that the concentration of family ownership has a strong presence, with 64% of Indonesian businesses falling into this category. The way family firms are governed plays a crucial role in their success, often differing considerably from non-family enterprises. Globally, over two-thirds of

businesses are family-owned, and their importance is increasingly acknowledged (London Economics, 2002).

A company's success is shaped by both its internal strengths and the external market environment. Theories suggest that strong corporate governance can boost value and financial performance in both advanced and emerging countries. While an organization's financial results are the primary gauge of its economic outcome, a multitude of elements contribute to the complex interplay of economic efficiency and market value, such as asset quality, capital sufficiency, proceeds on capital, and price of the share (Rambo, 2012). However, it is not just corporate governance that impacts market valuation and financial performance. Other factors influencing a business's performance include technological advancements, environmental concerns, legal and social issues, macroeconomic conditions, liquidity, business size, leverage, managerial skill, sales growth, and the availability of skilled top management personnel (Bonna, 2011). To assess the accounting profitability, Return on Assets (ROA) and the market-to-book ratio of assets are identified as the key performance metrics (McConaughy et al., 1998; Filatotchev et al., 2005; Perez-Gonzalez, 2006).

Jensen and Meckling's (1976) ownership structure theory suggest that there is a positive association between managerial rights and firm worth. Supporting this view, studies by McConaughey et al. (1998) and Barontini and Caprio (2004) also find that control of the family firm is positively associated with firm efficiency, suggesting that higher levels of family ownership can enhance business outcomes.

Anderson and Reeb (2003) and Miller et al. (2007) showed that family ownership may have a significant effect on business success. McConaughey et al. (1998) and Barontini and Caprio (2004) also find that control of the family firm is positively associated with

firm efficiency, suggesting that higher levels of family ownership can enhance business outcomes. The earlier studies on Japanese family businesses (Yoshikawa, T. et al., 2010; Morikawa, M., 2013; Arikawa et al., 2019; Koji et al., 2020) have found consistent results with the parameters indicated above. The literature presents mixed findings: Pindado and Requejo (2015) identify a positive link, other studies—such as those by Fauzi and Locke (2012) and Wang and Shailer (2015)—report adverse outcomes in developing countries. Similarly, some scholars (Young et al., 2008; Miah, M.S., et al., 2023) argue that listed family firms do not outperform non-family counterparts, while others (Chahal & Sharma, 2020; Koji, K. et al., 2020) suggest that family involvement enhances firm value. Alves and Gama (2020) further contend that family influence on firm success is complex and cannot be labeled as positive or negative.

According to Sener (2014), profitability improves with moderate family ownership and active family involvement in Turkey, though market valuation may decline when a member of the family serves as chairperson. In Japan, Koji et al. (2020) demonstrated that family entities outperformed non-family entities in terms of ROA and Tobin's Q in both univariate and multivariate analyses. In the Malaysian context, Pang Elvin et al. (2016) highlighted that ownership structures and governance practices have a notable impact on firm outcomes. Muntahanah et al. (2021) reported that family ownership in India tends to weaken firm performance. Aligning with Fama and Jensen's (1985) suggestion that family interests may conflict with those of other shareholders, Juanda and Jalaludin (2018) argued that family ownership can introduce specific vulnerabilities within a business.

Sami Gharbi and Hidaya Othmani (2022) proposed that the link between family involvement and firm efficiency is non-linear in France, meaning that excessive family control might hurt performance. Muntahanah et al. (2021) also found that CG factors

influence this relationship in Indonesia. Laporšek et al. (2021) found no substantial relationship between ownership concentration and firm outcomes, noting that Slovenian state-owned firms underperformed compared to private firms. Minh Ha et al. (2022) observed a negative association between family ownership and firm success in Vietnamese companies.

Margaretha and Marko (2013) found that in Indonesia, non-family firms outperformed their family-owned counterparts, showing no significant link between family rights and profitability. Conversely, Azizi et al. (2021), Muttakin et al. (2014), and Razzaque et al. (2020) provide evidence that family ownership positively impacts the outcome of manufacturing firms in Bangladesh.

In contrast, Chahal, H., & Sharma, A. K. (2020). concluded that family ownership has a beneficial effect on firm outcomes in India, particularly in terms of profitability. Bazhair and Sulimany (2023) also found that strong oversight from family owners in Saudi Arabia, along with factors such as foreign directors, experienced CEOs, and financially knowledgeable boards, can help minimize agency costs and improve financial results. However, studies by Muntahanah et al. (2021) in Indonesia, Kim and Lee (2018) in South Korea, and Schank et al. (2017) reported that family ownership can lead to inefficient investment decisions in Romania and Germany, which in turn may negatively affect firm outcomes.

Chapter Three provides the concept regarding the institutional environment of corporate governance with its systems and practices, nature and style of the family firm that exists around the world and in Bangladesh. It also outlines in detail the financial ecosystem and the pattern of market governance with its performance in Bangladesh. Financial market structure includes the formal, informal, and semi-informal financial sectors of Bangladesh.

It also encompasses the money market, capital market, forex market, and the regulators (BB, BSEC, MRA, and IDRA) of the financial market of Bangladesh. Under the money market infrastructure- banks (SCBs, PCBs, SBs, FCBs, etc.), non-bank financial institutions (HBFC, BDBL, PKSF, GB, etc.), micro-financial institutions (MFIs), and leasing companies are noted. Similarly, under the capital market- stock exchanges (DSE & CSE), the depository (CDBL), merchant banks (MBs), Asset management Companies (AMCs), stock-brokers, stock-dealers, venture capital, etc., are also discussed broadly.

As of fiscal year 2024, 61 scheduled banks and 5 non-scheduled banks were operating in the country. The aggregate ROA & ROE showed significant variability over the years, with ROA remaining slightly above 0%. Generally, below 1% in most years from 2012 to 2024, and the aggregate ROE rate began at approximately 8% in 2012, reached a peak of about 11–12% 2013, 2015, and 2017. The Amount of NPLs by major types of banks rose from 501.6 billion to 2113.91 billion from 2014 to the end of June 2024. The highest DSEX index was 7329.00 in 2021, and the lowest was 4898.52in 2024. The highest-ranking aggregate market cap of DSE was 45.20 billion in 2023, and the lowest was 2.54 billion in 2008. The market cap-to-GDP ratio peaked at 50% in 2010, before the crash, and dropped to its lowest point at 4.2% in June 2006.

Chapter four of the dissertation has focused on the adopted research methods for this study and the reasons behind such selection. This chapter has also shed light on the conceptual framework employed to understand the relationship between family ownership and firm-level profitability.

Positivism was the guiding philosophy of the research. Secondary data collected from the books of account and equity market could be taken at face value, and the insights stemming from these data points can perfectly represent the research area of interest. Choosing

'positivism' as the guiding philosophy is considered a mainstream paradigm in corporate finance research. While conducting the research, a deductive research approach was followed, whereby null hypotheses were constructed and tested. Determinants of firm-level performance have already been well-identified in the empirical papers. So, as per the established literature, this research phenomenon is well-documented. It was empirical research; the established theory was tested in the context of Bangladesh. This study employed a gamut of quantitative research tools, which is consistent with the positivist philosophy. It is a multi-method quantitative study that encompassed correlation analysis, regression analysis, and other statistical methods.

This research is based on archival research. The data depository is based on an in-house constructed Excel template. Secondary data was used for this research. The data was collected from annual reports of the listed firms of the Dhaka Stock Exchange PLC. As per the current regulations, annual reports are available in the public domain; there is no need to seek prior permission. Likewise, macroeconomic data were downloaded from the Bangladesh Bank and the Bangladesh Bureau of Statistics websites. Again, this information is also available in the public domain and freely downloadable. One hundred four firms representing both the financial and manufacturing sectors were included in the final sample. These firms were chosen based on convenience sampling. In order to manage 'survivorship bias', newly listed and relatively young enterprises were eliminated from the sample. Companies that had been listed before 2015 and had been in continuous operation during the whole research period were taken into account.

'Financial performance', 'Family ownership', and 'Corporate governance' were used as dependent variables, key independent variables, and key moderating variables, respectively. Firms were classified as family businesses if the founder is in charge, or if

family members hold important executive positions, or if family members are among the top ten shareholders, or if at least 50% of the board is made up of family members, or if a privately held family business retains ownership. The dependent variable - financial performance was measured using three primary metrics: net worth, return on equity (ROE), and return on assets (ROA). The level of 'corporate governance' was measured through standard parameters such as board size, board independence, and board committees.

The study has employed a multiple linear regression model in order to understand the relationship between family ownership and financial performance. Regression parameters can be estimated using different frameworks – the OLS (Ordinary Least Squares) framework, the MLE (Maximum Likelihood Estimation) framework, and the GMM (Generalized Method of Moments) framework. In this study, the researcher used the ordinary least squares technique to estimate the regression parameters. Since the research time frame covered a period of 10 years [2015-2024], in order to understand the nature of causality, panel regression was used. The baseline model was a fixed effects one, as suggested by the Hausman test. The researcher has reported the pooled OLS, Random-effects, and panel corrected standard error model results, as well as the baseline research. Endogeneity concerns in the estimated effects were mitigated through the omitted variable channel. A gamut of tests for robustness was also run to assess the validity of the estimated effects in different contexts.

Chapter - 5 deals with the empirical analysis of the dissertation. It at first presented the descriptive statistics of the research variables, followed by a correlation matrix. For most of the research variables, the range is substantial, indicating a wide cross-sectional variation. The correlation between ‘Ownership Concentration’ and ‘ROA’ is weakly

positive; on a similar line, the correlation between ‘Ownership Concentration’ and ‘ROE’ is also positive.

By employing statistical tools like the Condition index and VIF, probable multicollinearity concerns were identified. It was revealed through these tests that multicollinearity did not pose any significant concern in this database. Likewise, probable outlier concerns were identified through standard tests like Cook's distance, COV ratio, and hat matrix. It was found that the outlier did not pose any significant concern in this database. By employing statistical tools like the White test, B-P test, and graphical technique, probable heterogeneity concerns were identified. It was revealed through these tests that the error variance is not constant. This problem was later mitigated by using robust standard errors while estimating coefficients. By summarizing the key conclusions of the A-D test and J-B tests, and by graphically plotting the errors, it was concluded that the errors are not normally distributed. So, the researcher tried to estimate consistently by using a bigger sample size. Pesaran CD test indicated that there exists significant cross-sectional dependence in the data. Likewise, it was evident from the Lagrange multiplier test that there is statistically significant heteroskedasticity in the panel data model. There was robust statistical evidence to suggest that the random effects model is inconsistent. Therefore, the fixed effects model was the preferred specification for the panel regression model. The positive coefficient suggests that family firms tend to have superior performance compared to non-family firms. However, the effect is not statistically different from zero. As per the panel corrected standard error model, the beta coefficient concerning family ownership is positive and statistically significant. This suggests that family firms tend to have higher return on assets compared to non-family firms, holding other variables constant. The coefficients for Ownership Concentration, Age, Total Assets,

and Board Committee are statistically significant. On a similar note, the beta coefficient concerning family ownership is positive and statistically significant as per the pooled OLS model. Before running the regression models, the preconditions were met. Moreover, the pre-conditions were as follows: the anticipated association between the factor and the independent variable was linear; data were gathered by random sampling; covariance between independent variables and the error term was zero; and there was no perfect multicollinearity among the pairs of independent variables.

Endogeneity is a key statistical concern in regression analysis, which can lead to biased and inconsistent estimates. Three models were run to check whether the inclusion of initially omitted variables in the regression changed the results. In the 1st model, the GDP growth rate variable was added with the pre-specified set of control variables. Model 2 included all the standard firm-level controls along with the inflation variable. The baseline effects remained unperturbed when omitted variables were introduced in the model. Robustness of the model was evaluated by using winsorized data and alternative definitions of the dependent variable. The baseline effects remained unperturbed in these tests of robustness.

Finally, the existence of cross-sectional heterogeneity was checked out. The hypothesized positive relationship between firm performance and family ownership concentration is supported in the cross-sectional regression, but the magnitude of the regression coefficient changes in the small-in-large firm case and the mature-in-young firm case. In a nutshell, the estimated effects demonstrated cross-sectional heterogeneity.

This thesis enhances the understanding of the interaction between family ownership and corporate governance in influencing firm performance within an emerging economy. The findings indicate that family businesses are essential to Bangladesh's corporate sector,

with their long-term success reliant on achieving a balance between family control and professional governance practices. Enhanced board independence, improved regulatory enforcement, and increased transparency are critical for addressing agency problems and enhancing performance.

The findings highlight the need for policymakers to strengthen the enforcement of governance codes by the Bangladesh Securities and Exchange Commission (BSEC) and to encourage firms to adopt best practices beyond mere compliance. Family-controlled firms can improve their competitiveness in a dynamic market by adopting professional management practices and implementing effective oversight mechanisms.

The thesis illustrates that family businesses represent both an asset and a challenge for the economy of Bangladesh. Through the implementation of effective governance practices, organizations can leverage their intrinsic strengths—such as a long-term focus and dedication—into consistent financial outcomes, thus enhancing their contribution to national economic development.

This thesis is a pioneering attempt to shed light on the prevailing ownership structure, corporate governance, and firm performance dilemma by incorporating different relevant statistical analyses for Bangladeshi listed firms for the period of 2015-2024. The substantial features and contribution of this study are as follows;

i) The study documented that the correlation between ‘Ownership Concentration’ and ‘ROA’ is weakly positive; on a similar line, the correlation between ‘Ownership Concentration’ and ‘ROE’ is also positive. By using statistical tools like the White test, B-P test, and graphical techniques, probable heterogeneity concerns were identified. It was revealed through these tests that the error variance is not constant. By summing up the key

inferences of the A-D test and J-B tests, and by graphically plotting the errors, it was concluded that the errors are not normally distributed.

ii) It is observed from the result that the positive coefficient of the family firms tends to have superior performance compared to non-family firms. However, the effect is not statistically different from zero. As per the panel corrected standard error model, the beta coefficient concerning family ownership is positive and statistically significant. This suggests that family firms tend to have higher return on assets compared to non-family firms, holding other variables constant. The coefficients for Ownership Concentration, Age, Total Assets, and Board Committee are statistically significant.

iii) This thesis enhances the understanding of the interaction between family ownership and corporate governance in influencing firm performance in Bangladesh.

iv) The findings indicate that family businesses are essential to Bangladesh's corporate sector, with their long-term success reliant on achieving a balance between family control and professional governance practices. It will enhance board independence, improved regulatory enforcement, and increased transparency are critical for addressing agency problems and attractive performance.

Further study can be undertaken to better understand the link between control mechanisms in family businesses and the firm's financial performance, including their corporate governance issues, by using diverse methodologies and in different financial markets.

Statement of Key Contribution:

This thesis offers an a comprehensive and contextually grounded empirical analysis of publicly listed firms in Bangladesh over the 2015–2024 period. The novelty of the study lies in its integrative empirical framework, which examines family ownership and

corporate governance mechanisms simultaneously, rather than considering them as separate or independent drivers of firm performance.

From a theoretical standpoint, the study advances existing knowledge by drawing on and combining multiple corporate governance perspectives—including agency, stewardship, stakeholder, institutional, and resource dependence theories—to explain the diverse performance outcomes observed among family-controlled firms in an emerging market environment. This multi-theoretical synthesis demonstrates that family firm behavior in Bangladesh cannot be adequately explained by a single theoretical lens and that governance effectiveness is contingent upon both institutional conditions and ownership structures.

In methodological terms, the thesis contributes by utilizing a balanced panel dataset spanning ten years and applying fixed-effects estimation alongside panel-corrected standard errors to address key econometric challenges such as unobserved firm-level heterogeneity, heteroskedasticity, and cross-sectional dependence. The incorporation of extensive diagnostic procedures and robustness analyses further enhances the credibility and reliability of empirical findings, particularly in governance research conducted under data constraints.

Empirically, the study provides updated and sector-inclusive evidence on the relationship between family ownership and firm performance in Bangladesh, encompassing both financial and manufacturing industries during the post–corporate governance reform period. The results indicate a generally positive but non-uniform association between family ownership and performance, underscoring the moderating influence of governance mechanisms and firm-specific characteristics. By illustrating how corporate governance

structures interact with family control, the study enriches the limited empirical evidence on listed firms in Bangladesh.

Overall, this thesis contributes original insights by showing that family ownership, when complemented by effective corporate governance arrangements, can play a meaningful role in shaping firm performance in an emerging economy. These findings offer valuable implications for future academic inquiry, regulatory policymaking, and corporate governance reform initiatives in the Bangladeshi context.

Limitations and Directions for Future Research:

Several limitations of this study should be acknowledged when interpreting the empirical results. First, the analysis is based on secondary data derived from publicly available annual reports and official regulatory sources. Although these data are generally reliable and verifiable, they do not capture qualitative aspects of family involvement—such as informal influence, succession intentions, or intra-family relationships—which may also affect firm performance. Second, the adoption of convenience sampling, necessitated by data constraints and the requirement to construct a balanced panel covering the 2015–2024 period, may restrict the extent to which the findings can be generalized to all listed firms or to privately owned family enterprises in Bangladesh. Third, firm performance is assessed using accounting-based measures, including return on assets, return on equity, and net worth. While these indicators are widely employed in empirical research, they may not fully reflect market-based valuations or long-term value creation. Finally, although the study employs fixed-effects estimation, panel-corrected standard errors, and multiple robustness checks, residual endogeneity concerns—particularly the possibility of reverse

causality between ownership structure and firm performance—cannot be completely ruled out.

These limitations provide several avenues for future research. Subsequent studies may employ qualitative or mixed-method research designs to better capture the behavioral, relational, and governance-related dimensions of family firms that are not observable through archival data alone. Future research could also incorporate market-based performance indicators and expand the scope of analysis to include additional sectors, such as services, as well as small and medium-sized enterprises. From a methodological perspective, the use of dynamic panel estimators or quasi-experimental approaches may help strengthen causal inference. Moreover, cross-country comparative studies involving Bangladesh and other emerging economies could offer deeper insights into how institutional contexts influence the governance structures and performance outcomes of family-controlled firms.

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Data Set

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Co.	Year	ROA (%)	ROE (%)	NW(Cr.)	FF	Own Con (%)	BS	BI	Age	Inf (%)	GDP (%)	BC	M cap (Million)	LnTA
Alif	2015	5.64	6.52	157.00	1	31.35	10	20.00	50	6.78	6.01	1	2139.56	21.29
Alif	2016	5.83	7.27	168.86	1	31.35	10	20.00	51	7.35	6.06	1	1939.57	21.34
Alif	2017	6.55	8.07	162.93	1	31.35	10	20.00	52	6.40	6.55	1	2039.58	21.31
Alif	2018	7.41	3.26	187.07	1	31.35	10	20.00	53	5.92	7.11	1	2139.59	21.30
Alif	2019	6.60	9.90	208.12	1	31.35	10	20.00	54	5.44	7.28	1	2939.60	21.54
Alif	2020	9.30	5.26	331.05	1	31.35	10	20.00	55	5.78	7.86	1	3834.89	21.98
Alif	2021	4.97	3.49	348.99	1	17.18	10	20.00	56	5.48	8.15	1	2543.44	22.03
Alif	2022	3.13	3.12	357.01	1	15.84	10	20.00	57	5.65	5.24	1	1159.39	22.11
Alif	2023	2.54	4.03	368.53	1	14.22	10	20.00	58	5.56	6.90	1	1721.39	22.23
Alif	2024	3.75	4.02	377.41	1	7.80	10	20.00	59	5.65	6.40	1	2066.55	22.12
Argon	2015	5.91	5.92	199.16	0	47.62	9	22.22	7	6.78	6.01	1	2253.60	22.07
Argon	2016	7.07	11.00	199.16	0	47.62	10	30.00	8	7.35	6.06	1	4015.80	22.13
Argon	2017	6.93	13.00	223.57	0	47.62	9	33.33	9	6.40	6.55	1	2493.94	22.24
Argon	2018	7.57	116.00	269.25	0	47.62	9	22.22	10	5.92	7.11	1	2374.70	22.23
Argon	2019	7.66	12.00	294.78	0	38.95	9	22.22	11	5.44	7.28	1	4182.06	22.25
Argon	2020	7.56	12.00	317.64	0	37.13	9	22.22	12	5.78	7.86	1	3131.40	22.33
Argon	2021	6.86	11.00	335.15	0	36.08	10	30.00	13	5.48	8.15	2	3023.43	22.40
Argon	2022	3.50	5.60	342.81	0	36.08	9	22.22	14	5.65	5.24	2	2418.74	22.43
Argon	2023	1.54	2.70	345.95	0	36.08	9	22.22	15	5.56	6.90	2	3584.65	22.53
Argon	2024	1.11	2.11	339.50	0	36.08	9	22.22	16	5.65	6.40	2	2680.55	22.59
family	2015	55.43	30.51	255.27	1	29.97	5	20.00	10	6.78	6.01	1	4992.34	22.16
family	2016	56.26	23.18	418.52	1	29.97	6	16.67	11	7.35	6.06	1	6563.74	22.15
family	2017	6.00	0.08	418.52	1	29.97	6	33.33	12	6.40	6.55	1	4171.87	22.14
family	2018	6.00	0.08	418.52	1	29.97	6	33.33	13	5.92	7.11	1	2661.65	22.18
family	2019	-0.33	0.00	417.12	1	22.43	5	20.00	14	5.44	7.28	1	2858.98	22.19
family	2020	-0.55	-0.01	414.69	1	22.43	5	60.00	15	5.78	7.86	1	1956.31	22.20
family	2021	-0.64	-0.01	411.88	1	4.02	5	60.00	16	5.48	8.15	1	1416.64	22.21
family	2022	-1.18	-0.01	406.55	1	4.02	5	60.00	17	5.65	5.24	1	708.32	22.23
family	2023	-1.18	-0.01	405.55	1	4.02	5	60.00	18	5.56	6.90	1	1274.98	21.93
family	2024	-1.18	-0.01	404.55	1	4.02	5	60.00	19	5.65	6.40	1	1735.39	22.22
Al haj	2015	6.00	5.92	532.36	1	30.82	9	11.11	50	6.78	6.01	1	4992.34	19.76
Al haj	2016	4.00	13.43	486.00	1	30.82	10	20.00	51	7.35	6.06	1	6563.74	19.76
Al haj	2017	4.00	9.79	20.88	1	30.82	10	20.00	52	6.40	6.55	1	4171.87	20.03
Al haj	2018	5.00	11.31	22.68	1	30.82	10	20.00	53	5.92	7.11	1	2661.65	20.07
Al haj	2019	2.18	12.78	25.05	1	30.34	10	20.00	54	5.44	7.28	1	2858.98	20.13
Al haj	2020	0.66	3.85	25.10	1	30.20	10	20.00	55	5.78	7.86	1	1956.31	20.18
Al haj	2021	-2.38	-20.06	20.92	1	12.78	7	28.57	56	5.48	8.15	2	1416.64	20.60
Al haj	2022	-4.75	-10.96	18.85	1	12.78	5	20.00	57	5.65	5.24	2	708.32	20.58
Al haj	2023	1.67	3.00	19.21	1	12.78	13	38.46	58	5.56	6.90	2	956.61	20.59
Al haj	2024	2.18	9.54	21.24	1	25.63	13	30.77	59	5.65	6.40	2	2662.45	20.66
Envoy	2015	4.89	8.18	157.29	1	46.84	8	12.50	18	6.78	6.01	2	6210.75	8.73
Envoy	2016	3.03	5.76	168.86	1	46.84	8	12.50	19	7.35	6.06	1	6720.44	23.05

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Envoy	2017	4.87	9.84	580.51	1	46.84	8	25.00	20	6.40	6.55	1	6878.61	23.19
Envoy	2018	2.00	6.00	589.22	1	46.84	8	25.00	21	5.92	7.11	1	5321.87	23.38
Envoy	2019	1.89	3.40	603.09	1	45.59	10	20.00	22	5.44	7.28	1	6186.30	23.50
Envoy	2020	3.11	5.28	625.12	1	45.59	10	20.00	23	5.78	7.86	2	5706.27	23.58
Envoy	2021	1.52	8.62	643.33	1	45.59	10	20.00	24	5.48	8.15	2	5887.49	23.60
Envoy	2022	0.51	0.51	644.55	1	45.58	10	20.00	25	5.65	5.24	2	3555.98	23.61
Envoy	2023	1.04	1.49	633.85	1	45.58	10	20.00	26	5.56	6.90	2	4931.40	23.65
Envoy	2024	2.54	7.82	640.90	1	57.93	10	20.00	27	5.65	6.40	2	7413.88	23.70
Square	2015	9.24	12.02	488.63	1	62.21	7	28.57	16	6.78	6.01	2	11869.31	22.57
Square	2016	8.63	10.49	649.43	1	62.21	7	28.57	17	7.35	6.06	2	12730.94	22.89
Square	2017	8.70	10.57	560.71	1	62.21	7	28.57	18	6.40	6.55	2	12166.11	22.73
Square	2018	7.26	8.67	560.71	1	62.21	7	28.57	19	5.92	7.11	2	11515.52	22.96
Square	2019	3.36	4.63	545.29	1	62.15	7	28.57	20	5.44	7.28	2	12112.44	23.04
Square	2020	3.09	5.40	538.60	1	61.83	7	28.57	21	5.78	7.86	2	9524.45	23.17
Square	2021	2.67	4.80	722.44	1	61.83	7	28.57	22	5.48	8.15	2	9014.42	23.34
Square	2022	0.36	0.75	688.13	1	61.83	7	28.57	23	5.65	5.24	2	5720.31	23.38
Square	2023	4.03	8.51	730.56	1	61.83	7	28.57	24	5.56	6.90	2	9369.47	23.46
Square	2024	12.02	20.72	919.62	1	61.83	5	40.00	25	5.65	6.40	2	13097.53	23.43
Hwawel	2015	10.72	13.56	110.38	1	50.82	6	16.67	11	6.78	6.01	3	2234,87	21.25
Hwawel	2016	5.35	12.71	138.17	1	50.82	6	16.67	12	7.35	6.06	2	2133.60	21.24
Hwawel	2017	6.76	8.19	141.43	1	50.82	7	28.57	13	6.40	6.55	2	1814.40	21.26
Hwawel	2018	7.34	7.30	154.33	1	50.83	7	28.57	14	5.92	7.11	2	1736.00	21.36
Hwawel	2019	7.23	7.46	157.94	1	50.83	7	28.57	15	5.44	7.28	2	2111.20	21.34
Hwawel	2020	7.61	7.83	162.47	1	50.83	7	28.57	16	5.78	7.86	3	2228.80	21.39
Hwawel	2021	8.25	8.48	167.31	1	50.83	7	28.57	17	5.48	8.15	3	2156.00	21.41
Hwawel	2022	6.84	7.58	170.92	1	50.83	7	28.57	18	5.65	5.24	2	1747.20	21.36
Hwawel	2023	8.02	9.54	176.73	1	50.83	7	28.57	19	5.56	6.90	2	2363.20	21.47
Hwawel	2024	15.21	13.23	192.31	1	50.83	7	28.57	20	5.65	6.40	2	2570.40	21.55
Shsha	2015	1.96	7.29	143.09	0	46.52	5	20.00	22	6.78	6.01	2	5814.63	22.73
Shsha	2016	1.66	8.60	174.73	0	46.52	5	20.00	23	7.35	6.06	1	4922.87	23.35
Shsha	2017	4.87	19.08	352.74	0	46.52	5	20.00	24	6.40	6.55	1	4274.65	22.94
Shsha	2018	5.95	13.92	389.63	0	46.52	7	28.57	25	5.92	7.11	1	3902.45	23.00
Shsha	2019	5.74	13.35	404.55	0	46.52	7	28.57	26	5.44	7.28	1	7680.84	23.11
Shsha	2020	4.83	11.41	432.75	0	46.52	5	40.00	27	5.78	7.86	2	6814.63	23.21
Shsha	2021	3.19	7.70	594.51	0	37.57	7	28.57	28	5.48	8.15	2	5922.87	23.24
Shsha	2022	2.10	5.76	584.00	0	37.57	7	28.57	29	5.65	5.24	2	2901.31	23.44
Shsha	2023	0.93	2.86	591.90	0	37.56	7	28.57	30	5.56	6.90	2	3610.52	23.10
Shsha	2024	-7.06	-18.08	576.43	0	37.56	5	20.00	31	5.65	6.40	2	4047.73	23.07
HFL	2015	0.07	12.00	344.24	1	51.36	8	12.50	19	6.78	6.01	1	2703.25	19.72
HFL	2016	0.08	12.00	345.29	1	51.36	8	25.00	20	7.35	6.06	1	2294.37	21.97
HFL	2017	0.03	4.00	343.19	1	51.36	8	25.00	21	6.40	6.55	1	2107.33	22.20
HFL	2018	0.02	3.00	346.07	1	51.74	8	25.00	22	5.92	7.11	1	1611.71	22.29
HFL	2019	0.01	2.00	346.63	1	51.74	8	25.00	23	5.44	7.28	1	2303.75	22.30
HFL	2020	0.04	5.00	358.28	1	51.38	8	25.00	24	5.78	7.86	2	2494.97	22.37

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HFL	2021	0.02	3.00	365.20	1	51.38	8	25.00	25	5.48	8.15	2	1966.84	22.30
HFL	2022	0.01	0.01	364.58	1	51.38	8	25.00	26	5.65	5.24	2	1429.60	22.28
HFL	2023	-0.03	-0.05	344.12	1	51.51	8	25.00	27	5.56	6.90	2	1675.45	22.28
HFL	2024	0.01	0.02	348.00	1	51.38	8	25.00	28	5.65	6.40	2	2158.06	22.37
Apex	2015	1.66	4.46	41.43	1	35.99	6	16.67	22	6.78	6.01	1	518.28	20.89
Apex	2016	1.62	4.50	41.80	1	35.99	6	16.67	23	7.35	6.06	1	645.12	20.85
Apex	2017	1.68	5.52	42.02	1	35.99	5	20.00	24	6.40	6.55	1	593.88	21.04
Apex	2018	1.96	6.85	43.41	1	35.99	5	20.00	25	5.92	7.11	1	782.88	21.10
Apex	2019	1.74	5.23	44.32	1	38.96	5	20.00	26	5.44	7.28	1	941.64	21.00
Apex	2020	1.67	5.19	46.24	1	38.96	5	20.00	27	5.78	7.86	1	1467.48	21.10
Apex	2021	1.73	5.81	46.89	1	38.96	5	20.00	28	5.48	8.15	2	1169.28	21.05
Apex	2022	0.97	2.72	45.61	1	38.96	5	20.00	29	5.65	5.24	2	1097.88	20.97
Apex	2023	1.58	5.25	46.88	1	38.96	7	14.29	30	5.56	6.90	2	1043.28	21.17
Apex	2024	1.86	5.91	49.07	1	38.06	5	20.00	31	5.65	6.40	2	1105.44	21.16
Aman Ctn	2015	5.25	6.06	146.01	1	72.20	8	12.50	19	6.78	6.01	1	2727.58	19.80
Aman Ctn	2016	5.42	6.76	157.04	1	72.20	8	25.00	20	7.35	6.06	1	2680.42	19.84
Aman Ctn	2017	6.09	7.51	151.52	1	72.20	8	25.00	21	6.40	6.55	1	2894.75	19.82
Aman Ctn	2018	6.89	3.03	173.97	1	72.20	8	25.00	22	5.92	7.11	1	2672.08	19.81
Aman Ctn	2019	6.14	9.21	193.55	1	72.20	8	25.00	23	5.44	7.28	1	2994.75	20.03
Aman Ctn	2020	8.65	4.89	307.88	1	72.20	8	25.00	24	5.78	7.86	2	2872.08	20.44
Aman Ctn	2021	4.62	3.25	324.56	1	72.20	8	25.00	25	5.48	8.15	2	2127.58	20.48
Aman Ctn	2022	2.91	2.90	332.02	1	72.20	8	25.00	26	5.65	5.24	2	3680.42	20.56
Aman Ctn	2023	2.36	3.75	342.73	1	72.20	8	25.00	27	5.56	6.90	2	2994.75	20.68
Aman Ctn	2024	3.49	3.74	350.99	1	65.06	8	25.00	28	5.65	6.40	2	2672.08	20.57
Esquire knit	2015	5.46	6.31	151.85	1	74.13	6	16.67	22	6.78	6.01	1	2927.58	20.59
Esquire knit	2016	5.64	7.03	163.32	1	74.13	6	16.67	23	7.35	6.06	1	3680.42	20.64
Esquire knit	2017	6.34	7.81	157.59	1	74.13	5	20.00	24	6.40	6.55	1	3994.75	20.61
Esquire knit	2018	7.17	3.15	180.93	1	74.13	5	20.00	25	5.92	7.11	1	2872.08	20.60
Esquire knit	2019	6.38	9.58	201.29	1	74.13	5	20.00	26	5.44	7.28	1	2994.75	20.84
Esquire knit	2020	8.99	5.09	320.19	1	74.13	5	20.00	27	5.78	7.86	1	2772.08	21.26
Esquire knit	2021	4.81	3.38	337.54	1	74.13	5	20.00	28	5.48	8.15	2	6029.84	21.30
Esquire knit	2022	3.03	3.02	345.30	1	46.95	5	20.00	29	5.65	5.24	2	2954.22	21.38
Esquire knit	2023	2.46	3.90	356.44	1	46.95	7	14.29	30	5.56	6.90	2	5490.26	21.50
Esquire knit	2024	3.63	3.89	365.03	1	46.95	5	20.00	31	5.65	6.40	2	4761.82	21.40
Fareast Knit	2015	5.18	5.99	144.26	1	78.45	8	12.50	19	6.78	6.01	1	5690.26	19.56
Fareast Knit	2016	5.36	6.68	155.16	1	78.45	8	25.00	20	7.35	6.06	1	5761.82	19.61
Fareast Knit	2017	6.02	7.42	149.71	1	78.45	8	25.00	21	6.40	6.55	1	3202.45	19.58
Fareast Knit	2018	6.81	3.00	171.88	1	78.45	8	25.00	22	5.92	7.11	1	3772.22	19.57
Fareast Knit	2019	6.06	9.10	191.23	1	71.05	8	25.00	23	5.44	7.28	1	4149.44	19.79

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Fareast Knit	2020	8.55	4.83	304.18	1	71.05	8	25.00	24	5.78	7.86	2	2822.27	20.20
Fareast Knit	2021	4.57	3.21	320.67	1	67.58	8	25.00	25	5.48	8.15	2	3370.01	20.24
Fareast Knit	2022	2.88	2.87	328.03	1	67.20	8	25.00	26	5.65	5.24	2	1887.20	20.31
Fareast Knit	2023	2.33	3.70	338.62	1	67.20	8	25.00	27	5.56	6.90	2	3084.29	20.43
Fareast Knit	2024	3.45	3.69	346.78	1	67.20	8	25.00	28	5.65	6.40	2	4069.34	20.33
Matin Spin	2015	5.08	5.87	141.37	1	65.02	6	16.67	22	6.78	6.01	1	5068.64	19.17
Matin Spin	2016	5.25	6.55	152.05	1	65.02	6	16.67	23	7.35	6.06	1	4114.08	19.21
Matin Spin	2017	5.90	7.27	146.71	1	65.02	5	20.00	24	6.40	6.55	1	4192.07	19.19
Matin Spin	2018	6.67	2.94	168.45	1	65.02	5	20.00	25	5.92	7.11	1	3831.36	19.18
Matin Spin	2019	5.94	8.91	187.40	1	32.72	5	20.00	26	5.44	7.28	1	4016.59	19.40
Matin Spin	2020	8.37	4.74	298.10	1	32.72	5	20.00	27	5.78	7.86	1	3714.37	19.79
Matin Spin	2021	4.48	3.14	314.25	1	32.72	5	20.00	28	5.48	8.15	2	3704.62	19.83
Matin Spin	2022	2.82	2.81	321.47	1	32.72	5	20.00	29	5.65	5.24	2	3197.67	19.91
Matin Spin	2023	2.29	3.63	331.85	1	32.72	7	14.29	30	5.56	6.90	2	5196.22	20.02
Matin Spin	2024	3.38	3.62	339.84	1	32.72	5	20.00	31	5.65	6.40	2	6629.32	19.92
Paramnt tex	2015	4.98	5.75	138.55	1	42.97	8	12.50	19	6.78	6.01	1	6929.32	18.79
Paramnt tex	2016	5.14	6.42	149.01	1	42.97	8	25.00	20	7.35	6.06	1	3260.63	18.83
Paramnt tex	2017	5.78	7.12	143.78	1	42.97	8	25.00	21	6.40	6.55	1	1951.61	18.81
Paramnt tex	2018	6.54	2.88	165.08	1	42.97	8	25.00	22	5.92	7.11	1	1984.50	18.80
Paramnt tex	2019	5.82	8.74	183.65	1	42.78	8	25.00	23	5.44	7.28	1	4387.61	19.01
Paramnt tex	2020	8.21	4.64	292.14	1	42.78	8	25.00	24	5.78	7.86	2	6852.42	19.40
Paramnt tex	2021	4.39	3.08	307.97	1	42.78	8	25.00	25	5.48	8.15	2	8021.59	19.44
Paramnt tex	2022	2.76	2.75	315.04	1	48.49	8	25.00	26	5.65	5.24	2	7222.28	19.51
Paramnt tex	2023	2.24	3.56	325.21	1	48.48	8	25.00	27	5.56	6.90	2	8405.31	19.62
Paramnt tex	2024	3.31	3.55	333.05	1	48.49	8	25.00	28	5.65	6.40	2	12945.27	19.52
Rahim tex	2015	5.20	6.02	144.86	1	76.76	6	16.67	22	6.78	6.01	1	411.59	19.64
Rahim tex	2016	5.38	6.71	155.81	1	76.76	6	16.67	23	7.35	6.06	1	909.78	19.69
Rahim tex	2017	6.04	7.45	150.33	1	76.76	5	20.00	24	6.40	6.55	1	805.03	19.66
Rahim tex	2018	6.84	3.01	172.60	1	76.76	5	20.00	25	5.92	7.11	1	1158.12	19.65
Rahim tex	2019	6.09	9.13	192.03	1	74.56	5	20.00	26	5.44	7.28	1	2404.52	19.88
Rahim tex	2020	8.58	4.85	305.46	1	72.00	5	20.00	27	5.78	7.86	1	2848.07	20.28
Rahim tex	2021	4.59	3.22	322.01	1	72.00	5	20.00	28	5.48	8.15	2	3448.48	20.32
Rahim tex	2022	2.89	2.88	329.41	1	70.94	5	20.00	29	5.65	5.24	2	2153.97	20.40

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Rahim tex	2023	2.34	3.72	340.04	1	70.94	7	14.29	30	5.56	6.90	2	2116.13	20.51
Rahim tex	2024	3.46	3.71	348.23	1	70.94	5	20.00	31	5.65	6.40	2	2065.05	20.41
Makson Spin	2015	5.55	6.41	154.42	1	26.23	9	22.22	19	6.78	6.01	1	2737.06	20.94
Makson Spin	2016	5.73	7.15	166.09	1	26.23	8	25.00	20	7.35	6.06	1	3198.04	20.99
Makson Spin	2017	6.44	7.94	160.26	1	26.23	8	25.00	21	6.40	6.55	1	2110.06	20.96
Makson Spin	2018	7.29	3.21	184.00	1	26.23	8	25.00	22	5.92	7.11	1	1656.28	20.95
Makson Spin	2019	6.49	9.74	204.70	1	24.46	9	22.22	23	5.44	7.28	1	2336.95	21.19
Makson Spin	2020	9.15	5.17	325.62	1	26.58	8	25.00	24	5.78	7.86	1	2048.80	21.62
Makson Spin	2021	4.89	3.43	343.26	1	28.37	10	30.00	25	5.48	8.15	2	1548.51	21.66
Makson Spin	2022	3.08	3.07	351.15	1	29.46	9	33.33	26	5.65	5.24	2	1214.99	21.74
Makson Spin	2023	2.50	3.96	362.48	1	30.00	8	25.00	27	5.56	6.90	2	4669.36	21.87
Makson Spin	2024	3.69	3.95	371.22	1	30.00	8	25.00	28	5.65	6.40	2	5741.40	21.76
Renata	2015	18.66	22.08	6295.11	1	0.12	9	22.22	41	6.78	6.01	1	23236.00	23.27
Renata	2016	18.43	22.07	7750.71	1	0.12	8	25.00	42	7.35	6.06	1	40977.19	23.40
Renata	2017	19.12	21.33	9405.85	1	0.12	8	25.00	43	6.40	6.55	1	52900.56	23.50
Renata	2018	9.73	10.84	1054.30	1	0.12	8	25.00	44	5.92	7.11	1	62760.50	23.54
Renata	2019	19.05	20.94	1247.45	1	51.16	9	22.22	45	5.44	7.28	1	70463.38	23.06
Renata	2020	19.56	21.13	1512.71	1	51.16	8	25.00	46	5.78	7.86	1	90795.21	23.11
Renata	2021	16.98	20.91	1828.47	1	51.17	10	30.00	47	5.48	8.15	2	96513.95	23.91
Renata	2022	27.04	19.17	2153.94	1	51.18	10	30.00	48	5.65	5.24	2	90910.28	24.09
Reneta	2023	25.72	19.78	2544.98	1	51.16	8	25.00	49	5.56	6.90	2	128602.34	24.26
Reneta	2024	21.28	17.38	2941.23	1	51.29	8	25.00	50	5.65	6.40	2	144238.87	24.46
Square	2015	14.25	19.03	1884.47	1	53.52	8	25.00	49	6.78	6.01	2	81569.10	23.89
Square	2016	15.18	462.18	2227.25	1	53.52	8	25.00	50	7.35	6.06	2	136020.19	24.00
Square	2017	20.80	23.27	3844.94	1	53.52	7	28.57	51	6.40	6.55	2	145337.24	24.17
Square	2018	21.30	147.96	3559.70	1	53.52	7	28.57	52	5.92	7.11	2	165686.95	24.39
Square	2019	18.35	324.64	4120.19	1	36.34	7	28.57	53	5.44	7.28	2	198992.70	24.55
Square	2020	16.59	11.46	4666.87	1	34.43	7	28.57	54	5.78	7.86	2	216129.32	24.70
Square	2021	17.84	17.34	6080.60	1	34.43	7	28.57	55	5.48	8.15	2	208534.94	24.90
Square	2022	18.59	19.82	6990.98	1	34.57	7	28.57	56	5.65	5.24	2	145631.24	25.03
Square	2023	18.32	19.38	8221.75	1	34.57	7	28.57	57	5.56	6.90	2	191030.19	25.18
Square	2024	17.83	18.74	10345.34	1	34.67	7	28.57	58	5.65	6.40	2	192093.93	25.30
ACI	2015	5.99	13.65	563.72	1	30.00	10	30.00	40	6.78	6.01	1	4261.59	23.40
ACI	2016	6.67	14.39	660.64	1	30.00	10	30.00	41	7.35	6.06	1	8966.55	23.47
ACI	2017	18.71	27.17	1171.51	1	30.00	10	20.00	42	6.40	6.55	1	20599.57	23.69
ACI	2018	0.36	11.37	1194.93	1	34.79	10	30.00	43	5.92	7.11	1	18129.70	23.77

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ACI	2019	5.06	9.57	1299.24	1	44.50	10	20.00	44	5.44	7.28	2	22633.24	24.02
ACI	2020	4.02	9.24	1425.60	1	45.48	10	20.00	45	5.78	7.86	2	16764.81	24.30
ACI	2021	1.42	3.71	1432.20	1	45.98	9	22.22	46	5.48	8.15	2	13704.65	24.43
ACI	2022	3.88	11.15	1542.10	1	35.28	9	22.22	47	5.65	5.24	2	11715.56	24.51
ACI	2023	4.61	12.11	1889.30	1	35.28	9	22.22	48	5.56	6.90	2	16642.17	22.46
ACI	2024	2.95	10.83	1220.46	1	35.28	9	22.22	49	5.65	6.40	2	20539.23	21.86
Bexiph	2015	5.11	7.10	1977.55	1	13.18	10	20.00	37	6.78	6.01	1	18287.48	24.04
Bexiph	2016	5.26	7.30	2092.01	1	13.18	8	25.00	38	7.35	6.06	1	15302.63	24.09
Bexiph	2017	6.27	8.69	2305.94	1	13.18	8	25.00	39	6.40	6.55	2	24256.14	24.15
Bexiph	2018	8.00	9.25	2305.94	1	13.18	8	25.00	40	5.92	7.11	1	32251.39	24.16
Bexiph	2019	6.53	8.87	2507.24	1	13.18	8	25.00	41	5.44	7.28	1	45827.88	24.25
Bexiph	2020	6.06	9.11	2735.18	1	13.19	8	25.00	42	5.78	7.86	2	38081.75	24.50
Bexiph	2021	6.72	10.66	2986.43	1	13.19	8	25.00	43	5.48	8.15	2	33863.96	24.62
Bexiph	2022	7.28	10.81	3279.74	1	13.19	9	22.22	44	5.65	5.24	2	28064.51	24.64
Bexiph	2023	10.15	13.82	3736.48	1	30.18	10	20.00	45	5.56	6.90	2	28551.60	24.68
Bexiph	2024	7.55	12.31	4463.60	1	30.14	10	20.00	46	5.65	6.40	2	68968.93	24.92
Acme	2015	4.75	5.31	951.75	1	38.88	10	20.00	37	6.78	6.01	2	23630.44	23.53
Acme	2016	6.50	8.34	1069.22	1	38.88	10	20.00	38	7.35	6.06	1	22482.92	23.82
Acme	2017	5.66	8.10	1137.26	1	38.88	8	25.00	39	6.40	6.55	1	24139.81	23.87
Acme	2018	5.41	6.72	1636.45	1	38.88	8	25.00	40	5.92	7.11	1	24630.44	24.09
Acme	2019	6.77	8.24	1695.63	1	39.95	7	28.57	41	5.44	7.28	1	24482.32	24.12
Acme	2020	6.40	8.08	1764.41	1	40.11	7	28.57	42	5.78	7.86	1	21139.01	24.21
Acme	2021	4.20	8.00	1834.34	1	31.98	7	28.57	43	5.48	8.15	2	16293.33	24.30
Acme	2022	3.68	7.62	1904.42	1	32.14	11	18.18	44	5.65	5.24	2	13415.55	24.40
Acme	2023	3.88	7.80	2011.06	1	41.74	12	25.00	45	5.56	6.90	2	15595.05	24.42
Acme	2024	4.91	9.73	2169.01	1	39.83	12	25.00	46	5.65	6.40	2	18811.39	24.48
Orion	2015	3.53	5.72	10.85	1	31.98	7	28.57	48	6.78	6.01	1	16029.00	23.97
Orion	2016	3.81	6.29	1695.19	1	31.98	7	28.57	49	7.35	6.06	1	908.05	23.98
Orion	2017	3.98	6.30	1655.19	1	31.98	7	28.57	50	6.40	6.55	1	885.65	24.10
Orion	2018	4.92	8.08	1721.61	1	31.98	7	28.57	51	5.92	7.11	1	8611.20	24.02
Orion	2019	2.82	4.79	1756.51	1	31.98	7	28.57	52	5.44	7.28	1	11887.20	24.06
Orion	2020	2.61	4.42	1811.96	1	31.98	7	28.57	53	5.78	7.86	2	9687.60	24.15
Orion	2021	2.85	4.71	1874.90	1	31.98	7	28.57	54	5.48	8.15	2	7768.80	24.16
Orion	2022	1.81	3.47	1918.97	1	31.98	7	28.57	55	5.65	5.24	2	9828.00	24.33
Orion	2023	2.22	4.68	2007.44	1	31.98	7	28.57	56	5.56	6.90	2	12612.60	21.57
Orion	2024	1.76	4.07	2076.89	1	31.98	7	28.57	57	5.65	6.40	2	20592.00	24.60
Ibn Sina	2015	11.13	20.05	61.13	1	43.87	10	20.00	30	6.78	6.01	2	1570.75	20.12
Ibn Sina	2016	10.65	18.73	67.93	1	43.87	10	20.00	31	7.35	6.06	2	2200.41	20.90
Ibn Sina	2017	11.02	21.38	83.29	1	43.87	10	20.00	32	6.40	6.55	2	1991.60	21.20
Ibn Sina	2018	11.72	29.77	86.94	1	43.87	10	20.00	33	5.92	7.11	2	5220.37	21.27
Ibn Sina	2019	10.85	23.69	110.50	1	44.38	10	20.00	34	5.44	7.28	1	6401.07	21.49
Ibn Sina	2020	18.52	38.79	122.72	1	44.47	8	25.00	35	5.78	7.86	4	7311.01	21.62
Ibn Sina	2021	11.89	24.86	147.83	1	44.43	8	25.00	36	5.48	8.15	3	8251.44	21.76

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Ibn Sina	2022	11.42	24.12	177.70	1	44.55	8	25.00	37	5.65	5.24	3	7001.70	21.96
Ibn Sina	2023	12.72	24.93	214.96	1	44.51	8	25.00	38	5.56	6.90	3	7707.80	22.07
Ibn Sina	2024	14.05	25.50	262.51	1	44.67	8	25.00	39	5.65	6.40	3	9269.98	22.18
Kohinoor	2015	8.76	71.67	12.99	1	48.72	8	25.00	57	6.78	6.01	3	1560.00	21.25
Kohinoor	2016	6.14	45.21	23.71	1	48.72	8	25.00	58	7.35	6.06	1	3209.38	21.28
Kohinoor	2017	5.52	27.83	32.86	1	48.72	8	25.00	59	6.40	6.55	1	3594.30	21.23
Kohinoor	2018	6.98	28.58	41.74	1	48.72	8	25.00	60	5.92	7.11	1	3616.64	21.26
Kohinoor	2019	9.59	26.49	5.41	1	48.72	8	25.00	61	5.44	7.28	1	5089.50	21.15
Kohinoor	2020	7.99	21.23	72.79	1	48.72	8	25.00	62	5.78	7.86	2	6194.91	21.38
Kohinoor	2021	9.18	19.77	88.16	1	48.72	8	25.00	63	5.48	8.15	2	6468.49	21.36
Kohinoor	2022	8.31	16.87	99.58	1	48.72	8	25.00	64	5.65	5.24	2	9542.29	21.43
Kohinoor	2023	10.23	18.96	123.39	1	50.57	8	25.00	65	5.56	6.90	2	8911.38	21.66
Kohinoor	2024	11.62	21.21	149.32	1	50.57	8	25.00	66	5.65	6.40	2	9489.82	21.79
Central	2015	1.07	10.26	75.90	1	33.41	7	28.57	33	6.78	6.01	2	9989.62	22.71
Central	2016	8.30	10.68	142.62	1	33.41	7	28.57	34	7.35	6.06	2	2488.37	21.33
Central	2017	9.35	9.35	153.39	1	33.41	7	28.57	35	6.40	6.55	1	2279.46	21.42
Central	2018	6.00	5.99	163.17	1	33.41	7	28.57	36	5.92	7.11	1	1612.43	21.48
Central	2019	4.76	6.27	174.08	1	30.00	7	28.57	37	5.44	7.28	1	3142.83	21.55
Central	2020	2.56	3.38	180.17	1	25.89	5	60.00	38	5.78	7.86	1	1734.26	21.59
Central	2021	2.31	3.20	178.19	1	25.89	5	60.00	39	5.48	8.15	1	1509.49	21.63
Central	2022	-81.67	-140.00	79.07	1	25.89	5	60.00	40	5.65	5.24	1	1593.35	21.03
Central	2023	-0.63	-1.10	78.21	1	25.89	5	60.00	41	5.56	6.90	1	1581.37	21.03
Central	2024	-5.20	-9.56	71.40	1	25.89	5	60.00	42	5.65	6.40	4	1569.39	20.99
Salvo	2015	7.34	10.94	52.10	1	22.69	5	60.00	11	6.78	6.01	2	877.35	20.01
Salvo	2016	7.17	11.27	55.70	1	22.69	5	60.00	12	7.35	6.06	2	895.92	20.13
Salvo	2017	3.94	6.16	60.30	1	22.69	5	60.00	13	6.40	6.55	2	801.69	20.23
Salvo	2018	2.56	3.87	65.55	1	22.69	5	60.00	14	5.92	7.11	2	662.80	20.56
Salvo	2019	4.77	7.93	70.23	1	22.14	5	60.00	15	5.44	7.28	2	1385.97	20.70
Salvo	2020	3.35	7.75	75.03	1	22.14	5	60.00	16	5.78	7.86	2	1517.20	21.08
Salvo	2021	2.50	6.13	79.02	1	22.14	5	60.00	17	5.48	8.15	2	1124.89	21.19
Salvo	2022	1.10	3.04	80.99	1	22.14	5	60.00	18	5.65	5.24	2	656.73	21.31
Salvo	2023	1.11	3.38	82.54	1	22.41	5	60.00	19	5.56	6.90	2	2171.76	21.41
Salvo	2024	5.73	19.84	94.79	1	25.18	5	40.00	20	5.65	6.40	2	4415.05	21.54
JMI Syr	2015	10.46	18.85	57.46	1	64.66	7	28.57	33	6.78	6.01	2	687.50	18.91
JMI Syr	2016	10.01	17.61	63.86	1	64.66	7	28.57	34	7.35	6.06	2	1958.00	19.65
JMI Syr	2017	10.36	20.10	78.30	1	64.66	7	28.57	35	6.40	6.55	1	1683.00	19.93
JMI Syr	2018	11.02	27.98	81.73	1	64.66	7	28.57	36	5.92	7.11	1	1625.80	20.00
JMI Syr	2019	10.20	22.27	103.87	1	49.31	7	28.57	37	5.44	7.28	1	1991.00	20.20
JMI Syr	2020	17.41	36.46	115.36	1	49.31	5	60.00	38	5.78	7.86	1	2581.70	20.32
JMI Syr	2021	11.18	23.37	138.96	1	61.13	5	60.00	39	5.48	8.15	1	5150.20	20.46
JMI Syr	2022	10.73	22.67	167.04	1	79.65	5	60.00	40	5.65	5.24	1	6397.95	20.64
JMI Syr	2023	11.96	23.43	202.06	1	79.65	5	60.00	41	5.56	6.90	1	7317.31	20.75

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JMI Syr	2024	13.21	23.97	246.75	1	79.65	5	60.00	42	5.65	6.40	4	6901.83	20.85
Active fine	2015	8.23	67.37	12.21	1	12.02	5	60.00	11	6.78	6.01	2	5016.30	19.98
Active fine	2016	5.77	42.50	22.29	1	12.02	5	60.00	12	7.35	6.06	2	5266.08	20.00
Active fine	2017	5.19	26.16	30.89	1	12.02	5	60.00	13	6.40	6.55	2	7210.40	19.95
Active fine	2018	6.56	26.87	39.24	1	12.02	5	60.00	14	5.92	7.11	2	5893.83	19.98
Active fine	2019	9.01	24.90	5.08	1	12.02	5	60.00	15	5.44	7.28	2	8109.86	19.88
Active fine	2020	7.51	19.96	68.42	1	12.02	5	60.00	16	5.78	7.86	2	5758.48	20.10
Active fine	2021	8.63	18.58	82.87	1	12.02	5	60.00	17	5.48	8.15	2	6574.26	20.08
Active fine	2022	7.81	15.86	93.61	1	12.02	5	60.00	18	5.65	5.24	2	2951.22	20.14
Active fine	2023	9.62	17.82	115.99	1	12.02	5	60.00	19	5.56	6.90	2	4390.84	20.36
Active fine	2024	10.92	19.94	140.36	1	12.02	5	40.00	20	5.65	6.40	2	5158.64	20.48
AFC Agro	2015	1.01	9.64	71.35	1	30.29	5	60.00	11	6.78	6.01	2	4158.64	21.34
AFC Agro	2016	7.80	10.04	134.06	1	30.29	5	60.00	12	7.35	6.06	2	2689.50	20.05
AFC Agro	2017	8.79	8.79	144.19	1	30.29	5	60.00	13	6.40	6.55	2	4136.55	20.13
AFC Agro	2018	5.64	5.63	153.38	1	30.29	5	60.00	14	5.92	7.11	2	3687.48	20.19
AFC Agro	2019	4.47	5.89	163.64	1	30.29	5	60.00	15	5.44	7.28	2	4508.46	20.26
AFC Agro	2020	2.41	3.18	169.36	1	30.29	5	60.00	16	5.78	7.86	2	3342.64	20.29
AFC Agro	2021	2.17	3.01	167.50	1	30.29	5	60.00	17	5.48	8.15	2	3247.00	20.33
AFC Agro	2022	-76.77	-131.60	74.32	1	30.29	5	60.00	18	5.65	5.24	2	1958.68	19.77
AFC Agro	2023	-0.59	-1.03	73.52	1	30.29	5	60.00	19	5.56	6.90	2	2304.32	19.77
AFC Agro	2024	-4.89	-8.99	67.11	1	30.29	5	40.00	20	5.65	6.40	2	2926.49	19.73
Keya	2015	6.90	10.28	48.97	1	63.91	9	22.22	41	6.78	6.01	1	4541.78	18.81
Keya	2016	6.74	10.59	52.36	1	63.91	8	25.00	42	7.35	6.06	1	4243.88	18.92
Keya	2017	3.70	5.79	56.68	1	63.91	8	25.00	43	6.40	6.55	1	11618.12	19.02
Keya	2018	2.41	3.64	61.62	1	63.91	8	25.00	44	5.92	7.11	1	8421.66	19.32
Keya	2019	4.48	7.45	66.02	1	62.77	9	22.22	45	5.44	7.28	1	12275.81	19.46
Keya	2020	3.15	7.29	70.53	1	46.27	8	25.00	46	5.78	7.86	1	8818.54	19.82
Keya	2021	2.35	5.76	74.28	1	46.27	10	30.00	47	5.48	8.15	2	4309.06	19.92
Keya	2022	1.03	2.86	76.13	1	46.27	8	37.50	48	5.65	5.24	2	2805.90	20.03
Keya	2023	1.04	3.18	77.59	1	46.27	8	25.00	49	5.56	6.90	2	9479.93	20.13
Keya	2024	5.39	18.65	89.11	1	46.27	8	25.00	50	5.65	6.40	2	7495.76	20.25
Watachem	2015	8.81	72.09	13.07	1	39.59	5	40.00	11	6.78	6.01	2	9395.96	21.37
Watachem	2016	6.18	45.47	23.85	1	39.59	5	40.00	12	7.35	6.06	2	1571.29	21.40
Watachem	2017	5.55	27.99	33.05	1	39.59	5	40.00	13	6.40	6.55	2	1253.33	21.35
Watachem	2018	7.02	28.75	41.99	1	39.42	5	40.00	14	5.92	7.11	2	1040.89	21.38
Watachem	2019	9.65	26.64	5.44	1	36.41	5	40.00	15	5.44	7.28	2	1403.86	21.27
Watachem	2020	8.04	21.35	73.21	1	36.41	5	40.00	16	5.78	7.86	2	2911.62	21.50

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Watache m	2021	9.23	19.88	88.68	1	36.41	5	40.00	17	5.48	8.15	2	5771.34	21.48
Watache m	2022	8.36	16.97	100.16	1	36.41	5	40.00	18	5.65	5.24	2	4664.68	21.55
Watache m	2023	10.29	19.07	124.11	1	36.41	5	40.00	19	5.56	6.90	2	4107.35	21.79
Watache m	2024	11.69	21.33	150.18	1	36.41	5	40.00	20	5.65	6.40	2	3173.52	21.92
BSRM	2015	8.78	11.41	816.08	1	55.77	6	16.67	53	6.78	6.01	3	27342.00	23.77
BSRM	2016	4.25	1.35	843.18	1	55.77	5	20.00	54	7.35	6.06	1	28640.75	23.85
BSRM	2017	5.54	8.44	908.04	1	55.77	5	20.00	55	6.40	6.55	1	25154.64	23.62
BSRM	2018	3.96	5.71	1031.00	1	55.77	5	20.00	56	5.92	7.11	2	31545.83	24.83
BSRM	2019	5.24	6.96	1087.70	1	40.94	5	20.00	57	5.44	7.28	2	31067.35	25.06
BSRM	2020	13.47	20.33	1367.10	1	40.94	5	20.00	58	5.78	7.86	2	24641.98	25.23
BSRM	2021	6.27	8.09	2300.70	1	40.94	5	20.00	59	5.48	8.15	2	21918.03	25.12
BSRM	2022	3.19	3.91	2358.20	1	40.94	5	20.00	60	5.65	5.24	2	12632.00	25.12
BSRM	2023	11.58	13.05	3808.60	1	46.35	5	20.00	61	5.56	6.90	2	21053.34	25.11
BSRM	2024	9.90	12.64	2593.51	1	47.12	5	20.00	62	5.65	6.40	2	25264.01	25.50
Ifad Auto	2015	6.00	8.00	365.90	1	62.77	7	28.57	25	6.78	6.01	1	14715.00	23.00
Ifad Auto	2016	3.63	11.70	413.60	1	62.77	7	28.57	26	7.35	6.06	1	13562.25	23.45
Ifad Auto	2017	2.30	7.26	506.09	1	62.77	7	28.57	27	6.40	6.55	1	12719.00	23.53
Ifad Auto	2018	3.32	11.86	506.09	1	62.77	7	28.57	28	5.92	7.11	1	12572.95	23.68
Ifad Auto	2019	5.06	19.01	600.24	1	62.77	7	28.57	29	5.44	7.28	1	20974.25	23.82
Ifad Auto	2020	6.08	21.25	862.42	1	62.77	7	28.57	30	5.78	7.86	1	24934.33	24.09
Ifad Auto	2021	3.69	12.40	971.55	1	62.77	7	28.57	31	5.48	8.15	2	20112.04	24.21
Ifad Auto	2022	0.69	2.35	985.37	1	54.87	7	28.57	32	5.65	5.24	2	9547.64	24.24
Ifad Auto	2023	1.56	5.46	1032.32	1	54.87	7	28.57	33	5.56	6.90	2	12774.00	24.34
Ifad Auto	2024	1.09	3.98	1045.93	1	54.87	6	33.33	34	5.65	6.40	2	12774.00	24.39
Navana	2015	21.85	15.69	153.79	1	42.49	8	25.00	12	6.78	6.01	1	4551.44	21.42
Navana	2016	7.67	12.66	176.71	1	42.49	8	25.00	13	7.35	6.06	1	4145.98	21.52
Navana	2017	6.56	11.95	189.49	1	42.49	7	28.57	14	6.40	6.55	1	3830.75	21.56
Navana	2018	5.09	10.48	211.63	1	42.49	8	12.50	15	5.92	7.11	1	3166.02	22.21
Navana	2019	2.72	9.02	230.40	1	42.49	7	14.29	16	5.44	7.28	1	4954.62	22.76
Navana	2020	2.00	7.00	242.20	1	42.49	7	28.57	17	5.78	7.86	1	4714.77	22.00
Navana	2021	1.00	4.00	242.40	1	42.49	7	28.57	18	5.48	8.15	2	3063.23	21.98
Navana	2022	1.00	3.00	244.20	1	42.49	8	25.00	19	5.65	5.24	2	2261.44	21.99
Navana	2023	0.12	1.00	241.80	1	42.49	8	25.00	20	5.56	6.90	2	2432.77	21.88
Navana	2024	0.09	0.47	240.94	1	42.49	7	28.57	21	5.65	6.40	2	2223.41	21.86
E-Cables	2015	17.85	39.55	57.51	0	4.64	9	22.22	46	6.78	6.01	1	4551.44	21.01
E-Cables	2016	12.61	26.30	66.99	0	4.64	9	22.22	47	7.35	6.06	1	3127.20	21.04
E-Cables	2017	0.60	11.54	48.65	0	4.64	9	22.22	48	6.40	6.55	1	2896.80	21.04
E-Cables	2018	0.17	0.33	49.02	0	4.64	9	22.22	49	5.92	7.11	1	3240.00	21.09
E-Cables	2019	1.92	3.89	73.47	0	4.64	9	22.22	50	5.44	7.28	1	3384.00	21.15
E-Cables	2020	-0.23	-0.48	73.11	0	0.01	9	22.22	51	5.78	7.86	1	4800.00	21.13
E-Cables	2021	-7.84	-49.43	58.22	0	17.77	9	22.22	52	5.48	8.15	2	8477.04	21.24

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E-Cables	2022	-9.25	-42.77	39.88	0	17.77	9	22.22	53	5.65	5.24	2	3698.64	21.34
E-Cables	2023	-7.86	-44.93	27.51	0	14.12	9	22.22	54	5.56	6.90	2	3527.04	21.18
E-Cables	2024	0.09	0.10	908.30	0	14.12	9	22.22	55	5.65	6.40	2	3791.04	23.07
Singer BD	2015	10.90	14.50	263.27	1	72.77	10	30.00	34	6.78	6.01	3	9885.61	21.59
Singer BD	2016	13.40	23.72	152.71	1	72.77	14	28.57	35	7.35	6.06	3	10958.11	22.01
Singer BD	2017	14.10	26.00	141.73	1	72.77	9	22.22	36	6.40	6.55	3	12646.92	22.02
Singer BD	2018	32.50	28.04	194.70	1	72.77	8	25.00	37	5.92	7.11	3	11757.27	22.46
Singer BD	2019	37.50	34.55	218.45	1	62.22	8	25.00	38	5.44	7.28	3	14633.31	22.62
Singer BD	2020	40.00	38.42	231.79	1	57.00	8	25.00	39	5.78	7.86	3	13927.72	22.79
Singer BD	2021	36.10	23.40	341.74	1	57.00	11	18.18	40	5.48	8.15	2	19262.59	23.01
Singer BD	2022	23.40	23.25	345.60	1	57.00	8	25.00	41	5.65	5.24	2	14656.32	23.02
Singer BD	2023	15.10	15.27	339.60	1	57.00	8	25.00	42	5.56	6.90	2	17916.60	23.27
Singer BD	2024	0.50	2.44	298.85	1	57.00	7	28.57	43	5.65	6.40	2	16221.65	23.45
GPH	2015	5.14	4.52	1814.11	1	56.03	10	20.00	7	6.78	6.01	1	5335.20	22.31
GPH	2016	4.77	14.44	193.10	1	56.03	10	20.00	8	7.35	6.06	1	6094.44	22.49
GPH	2017	6.35	14.30	204.52	1	56.03	9	22.22	9	6.40	6.55	1	5588.35	22.52
GPH	2018	2.81	6.01	481.91	1	56.03	9	22.22	10	5.92	7.11	1	9355.50	23.05
GPH	2019	4.44	11.35	503.56	1	56.03	9	22.22	11	5.44	7.28	1	13814.96	23.28
GPH	2020	2.84	11.64	552.53	1	49.61	10	30.00	12	5.78	7.86	1	12017.14	23.85
GPH	2021	2.56	12.73	633.54	1	49.61	9	22.22	13	5.48	8.15	2	12426.44	24.17
GPH	2022	0.75	4.65	643.34	1	49.61	9	22.22	14	5.65	5.24	2	9190.16	24.41
GPH	2023	3.09	14.01	185.69	1	49.61	8	25.00	15	5.56	6.90	2	14057.55	24.71
GPH	2024	2.30	11.88	1287.63	1	49.61	8	25.00	16	5.65	6.40	2	23194.96	24.90
Ntube	2015	0.57	10.88	1257.63	1	0.69	9	11.11	49	6.78	6.01	1	897.30	24.67
Ntube	2016	0.66	8.88	193.10	1	0.69	9	11.11	50	7.35	6.06	1	2104.86	24.91
Ntube	2017	0.72	4.44	204.52	1	0.69	9	11.11	51	6.40	6.55	1	2854.05	24.89
Ntube	2018	0.05	0.29	481.91	1	0.69	9	11.11	52	5.92	7.11	1	1902.70	24.90
Ntube	2019	-1.17	-1.26	563.42	1	0.50	9	11.11	53	5.44	7.28	1	3244.10	22.52
Ntube	2020	-0.95	-10.32	557.22	1	0.50	6	16.67	54	5.78	7.86	1	3415.99	22.52
Ntube	2021	-0.08	-0.09	554.94	1	0.05	6	16.67	55	5.48	8.15	2	3779.75	22.53
Ntube	2022	0.03	0.02	534.50	1	0.05	6	16.67	56	5.65	5.24	2	3590.13	22.56
Ntube	2023	0.04	0.04	533.18	1	0.05	7	14.29	57	5.56	6.90	2	3339.41	22.54
Ntube	2024	-1.38	1.58	524.33	1	0.05	7	14.29	58	5.65	6.40	2	2844.94	22.52
Ben WTL	2015	10.22	13.00	185.32	1	32.20	10	20.00	11	6.78	6.01	1	3346.00	18.97
Ben WTL	2016	10.00	11.34	205.00	1	32.20	10	20.00	12	7.35	6.06	1	4838.40	18.90
Ben WTL	2017	7.12	9.19	218.81	1	32.20	10	20.00	13	6.40	6.55	1	3296.16	19.66
Ben WTL	2018	7.59	8.90	237.79	1	32.20	9	22.22	14	5.92	7.11	1	4158.00	19.97
Ben WTL	2019	5.17	6.03	563.42	1	58.91	9	22.22	15	5.44	7.28	1	3908.52	21.60
Ben WTL	2020	2.09	2.38	557.22	1	58.91	9	22.22	16	5.78	7.86	1	2780.87	21.62
Ben WTL	2021	1.14	1.27	554.94	1	55.41	9	22.22	17	5.48	8.15	2	2506.44	21.64
Ben WTL	2022	-0.21	-0.23	534.50	1	53.23	9	22.22	18	5.65	5.24	2	1555.09	21.62
Ben WTL	2023	0.07	0.08	533.18	1	53.23	9	22.22	19	5.56	6.90	2	2268.60	21.64
Ben WTL	2024	0.98	1.09	524.33	1	53.23	9	22.22	20	5.65	6.40	2	2167.98	21.67

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Quasem Ind	2015	2.21	1.09	175.03	1	30.02	7	28.57	33	6.78	6.01	1	1021.87	21.77
Quasem Ind	2016	2.13	2.87	180.17	1	30.02	7	14.29	34	7.35	6.06	1	1954.05	21.61
Quasem Ind	2017	2.24	3.03	183.96	1	30.02	7	14.29	35	6.40	6.55	1	1261.22	21.63
Quasem Ind	2018	3.20	4.27	192.17	1	30.02	7	14.29	36	5.92	7.11	1	3343.60	21.67
Quasem Ind	2019	3.63	4.81	182.78	1	30.02	7	14.29	37	5.44	7.28	1	4185.57	21.69
Quasem Ind	2020	2.89	4.16	190.47	1	30.02	6	16.67	38	5.78	7.86	1	3373.22	21.73
Quasem Ind	2021	1.64	2.50	195.28	1	30.00	6	16.67	39	5.48	8.15	2	2136.16	21.82
Quasem Ind	2022	1.47	2.26	195.29	1	30.00	6	16.67	40	5.65	5.24	2	2197.54	21.83
Quasem Ind	2023	3.02	4.55	201.33	1	30.00	7	28.57	41	5.56	6.90	2	3041.29	21.83
Quasem Ind	2024	0.96	1.76	200.98	1	30.00	7	28.57	42	5.65	6.40	2	4785.41	22.03
Deshbandhu	2015	1.18	4.67	51.54	1	33.54	6	16.67	7	6.78	6.01	1	999.81	20.78
Deshbandhu	2016	4.21	9.36	56.89	1	33.54	5	20.00	8	7.35	6.06	1	928.08	20.79
Deshbandhu	2017	1.82	3.89	59.16	1	33.54	5	20.00	9	6.40	6.55	1	758.70	20.96
Deshbandhu	2018	0.92	1.72	60.46	1	33.54	5	20.00	10	5.92	7.11	1	602.49	20.84
Deshbandhu	2019	1.25	3.26	62.51	1	33.54	5	20.00	11	5.44	7.28	1	1154.78	21.21
Deshbandhu	2020	1.95	5.22	65.95	1	33.54	5	20.00	12	5.78	7.86	2	938.89	21.29
Deshbandhu	2021	1.40	4.37	65.76	1	33.54	5	20.00	13	5.48	8.15	2	840.70	21.40
Deshbandhu	2022	0.31	0.97	64.34	1	33.54	5	20.00	14	5.65	5.24	2	638.20	21.42
Deshbandhu	2023	0.47	1.07	110.86	1	33.54	5	20.00	15	5.56	6.90	2	945.02	21.66
Deshbandhu	2024	1.16	2.50	111.74	1	33.54	5	20.00	16	5.65	6.40	2	1165.94	21.64
Olympic	2015	7.08	0.42	173.17	1	28.92	6	33.33	34	6.78	6.01	2	13133.36	22.03
Olympic	2016	17.21	0.41	252.24	1	28.92	6	33.33	35	7.35	6.06	2	26176.60	22.34
Olympic	2017	18.98	0.37	338.16	1	28.92	6	33.33	36	6.40	6.55	2	6886.00	22.47
Olympic	2018	21.26	0.41	453.12	1	28.92	5	40.00	37	5.92	7.11	2	3289.96	22.76
Olympic	2019	17.91	0.33	541.28	1	28.92	5	40.00	38	5.44	7.28	2	3544.66	22.93
Olympic	2020	16.55	0.31	630.41	1	27.77	6	33.33	39	5.78	7.86	2	2311.73	23.10
Olympic	2021	18.55	0.28	721.63	1	27.77	6	33.33	40	5.48	8.15	2	1847.84	23.12
Olympic	2022	17.16	0.25	824.16	1	27.77	6	33.33	41	5.65	5.24	2	1152.78	23.19
Olympic	2023	15.51	0.22	923.92	1	39.34	6	33.33	42	5.56	6.90	2	2525.95	23.39
Olympic	2024	-1.27	-1.40	226.84	1	39.34	5	20.00	43	5.65	6.40	2	1966.51	23.39
Ntea	2015	9.33	19.56	82.83	1	40.54	5	20.00	35	6.78	6.01	4	5352.60	21.43
Ntea	2016	2.38	5.05	83.29	1	40.54	9	0.00	36	7.35	6.06	4	4413.42	21.50
Ntea	2017	4.24	8.51	93.07	1	40.54	9	11.11	37	6.40	6.55	4	5336.10	21.77
Ntea	2018	0.07	0.16	90.15	1	40.54	9	0.00	38	5.92	7.11	4	3348.84	21.22
Ntea	2019	3.91	8.41	94.37	1	42.63	9	0.00	39	5.44	7.28	5	3833.28	21.84
Ntea	2020	4.86	10.29	103.08	1	50.72	10	10.00	40	5.78	7.86	5	4325.64	21.53
Ntea	2021	5.57	12.49	115.28	1	50.74	10	20.00	41	5.48	8.15	5	4802.16	21.70

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Ntea	2022	-13.33	-38.23	770.58	1	50.72	10	20.00	42	5.65	5.24	5	3145.56	21.77
Ntea	2023	-6.80	-31.52	556.16	1	50.72	12	33.33	43	5.56	6.90	5	3869.58	21.92
Ntea	2024	-7.16	-70.56	32.20	1	48.60	12	33.33	44	5.65	6.40	3	4429.92	21.84
G Harv	2015	5.76	7.93	77.77	1	35.03	5	20.00	8	6.78	6.01	1	85816.09	21.68
G Harv	2016	5.08	7.11	83.86	1	35.03	5	20.00	9	7.35	6.06	1	2383.29	21.96
G Harv	2017	8.19	11.56	95.17	1	35.03	5	20.00	10	6.40	6.55	1	2497.95	22.11
G Harv	2018	5.80	8.29	103.89	1	35.03	5	20.00	11	5.92	7.11	1	2450.45	22.34
G Harv	2019	3.81	5.60	113.78	1	35.03	5	20.00	12	5.44	7.28	1	4558.55	22.51
G Harv	2020	3.54	5.24	120.88	1	33.03	5	20.00	13	5.78	7.86	2	4098.73	22.61
G Harv	2021	3.38	10.05	239.93	1	33.03	8	25.00	14	5.48	8.15	2	4040.96	22.77
G Harv	2022	0.12	0.22	324.00	1	32.88	8	25.00	15	5.65	5.24	2	3604.49	22.41
G Harv	2023	-3.01	-4.96	306.20	1	32.88	8	25.00	16	5.56	6.90	2	3582.90	22.37
G Harv	2024	-1.95	-3.39	291.24	1	32.89	6	16.67	17	5.65	6.40	1	4079.33	22.36
BATBC	2015	-1.95	-3.39	890.16	1	72.91	8	25.00	103	6.78	6.01	3	63918.00	16.73
BATBC	2016	23.19	48.43	1146.35	1	72.91	9	33.33	104	7.35	6.06	3	182700.00	17.11
BATBC	2017	19.85	40.10	1460.95	1	72.91	9	33.33	105	6.40	6.55	3	139086.00	17.20
BATBC	2018	21.45	34.93	1888.26	1	72.91	9	33.33	106	5.92	7.11	3	162000.00	17.38
BATBC	2019	16.86	33.87	2311.24	1	72.91	10	20.00	107	5.44	7.28	3	169758.00	17.65
BATBC	2020	17.70	33.90	2952.88	1	72.91	10	20.00	108	5.78	7.86	3	207402.00	17.85
BATBC	2021	16.00	26.00	3579.34	1	72.91	9	22.22	109	5.48	8.15	3	246258.00	17.90
BATBC	2022	17.00	32.02	3399.97	1	72.91	10	20.00	110	5.65	5.24	3	163368.00	17.99
BATBC	2023	19.30	40.68	3679.08	1	72.91	10	20.00	111	5.56	6.90	3	291114.00	18.17
BATBC	2024	21.42	43.39	4118.21	1	72.91	10	20.00	112	5.65	6.40	3	293490.00	18.24
AMCL Pran	2015	4.83	68.54	45.71	1	41.43	6	33.33	33	6.78	6.01	1	1022.40	18.64
AMCL Pran	2016	9.98	69.28	48.70	1	41.43	5	20.00	34	7.35	6.06	1	1528.00	20.81
AMCL Pran	2017	3.68	69.48	51.70	1	41.43	5	20.00	35	6.40	6.55	1	1773.60	21.13
AMCL Pran	2018	3.62	66.25	54.44	1	41.43	5	20.00	36	5.92	7.11	1	1565.60	21.10
AMCL Pran	2019	3.75	53.74	57.37	1	40.15	5	20.00	37	5.44	7.28	1	1732.00	21.10
AMCL Pran	2020	3.87	56.97	60.31	1	40.15	5	20.00	38	5.78	7.86	1	1866.40	21.08
AMCL Pran	2021	4.12	73.02	63.59	1	40.15	5	20.00	39	5.48	8.15	1	1932.00	21.06
AMCL Pran	2022	3.24	69.44	65.60	1	40.15	5	20.00	40	5.65	5.24	1	1440.00	21.07
AMCL Pran	2023	3.13	68.77	67.33	1	40.15	5	20.00	41	5.56	6.90	1	1536.00	21.04
AMCL Pran	2024	3.11	64.83	69.27	1	40.15	5	20.00	42	5.65	6.40	1	2202.40	21.09
Bangas	2015	1.12	0.00	48.96	1	39.35	5	20.00	8	6.78	6.01	1	983.60	19.74
Bangas	2016	4.00	8.89	54.04	1	39.35	5	20.00	9	7.35	6.06	1	1889.93	19.75
Bangas	2017	1.73	3.70	56.20	1	39.35	5	20.00	10	6.40	6.55	1	1695.01	19.91
Bangas	2018	0.87	1.63	57.44	1	39.35	5	20.00	11	5.92	7.11	1	1028.62	19.80

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Bangas	2019	1.19	3.10	59.38	1	34.85	5	20.00	12	5.44	7.28	1	834.76	20.15
Bangas	2020	1.85	4.96	62.65	1	34.85	5	20.00	13	5.78	7.86	2	1663.85	20.23
Bangas	2021	1.33	4.15	62.47	1	31.58	8	25.00	14	5.48	8.15	2	2198.80	20.33
Bangas	2022	0.29	0.92	61.12	1	30.99	8	25.00	15	5.65	5.24	2	891.32	20.35
Bangas	2023	0.45	1.02	105.32	1	30.99	8	25.00	16	5.56	6.90	2	886.75	20.58
Bangas	2024	1.10	2.38	106.15	1	30.99	6	16.67	17	5.65	6.40	1	1053.73	20.56
RD Food	2015	1.22	0.00	53.12	1	27.86	6	33.33	33	6.78	6.01	1	1000.38	21.42
RD Food	2016	4.34	9.65	58.63	1	27.86	5	20.00	34	7.35	6.06	1	970.32	21.43
RD Food	2017	1.88	4.01	60.98	1	27.86	5	20.00	35	6.40	6.55	1	786.54	21.60
RD Food	2018	0.95	1.77	62.32	1	27.86	5	20.00	36	5.92	7.11	1	731.81	21.48
RD Food	2019	1.29	3.36	64.43	1	26.57	5	20.00	37	5.44	7.28	1	1067.36	21.87
RD Food	2020	2.01	5.38	67.98	1	27.14	5	20.00	38	5.78	7.86	1	1049.47	21.94
RD Food	2021	1.44	4.50	67.78	1	31.35	5	20.00	39	5.48	8.15	1	1005.52	22.05
RD Food	2022	0.32	1.00	66.32	1	31.14	5	20.00	40	5.65	5.24	1	853.31	22.08
RD Food	2023	0.48	1.10	114.27	1	35.26	5	20.00	41	5.56	6.90	1	2699.66	22.33
RD Food	2024	1.20	2.58	115.17	1	36.19	5	20.00	42	5.65	6.40	1	3190.91	22.31
Fu Wang F	2015	1.12	0.00	49.03	1	5.03	5	20.00	8	6.78	6.01	1	1585.91	19.77
Fu Wang F	2016	4.01	8.90	54.12	1	5.03	5	20.00	9	7.35	6.06	1	1237.61	19.78
Fu Wang F	2017	1.73	3.70	56.28	1	5.03	5	20.00	10	6.40	6.55	1	1578.61	19.94
Fu Wang F	2018	0.88	1.64	57.52	1	5.03	5	20.00	11	5.92	7.11	1	1165.85	19.82
Fu Wang F	2019	1.19	3.10	59.47	1	4.76	5	20.00	12	5.44	7.28	1	1456.48	20.18
Fu Wang F	2020	1.86	4.97	62.74	1	5.36	5	20.00	13	5.78	7.86	2	1864.12	20.25
Fu Wang F	2021	1.33	4.16	62.56	1	5.36	8	25.00	14	5.48	8.15	2	1740.18	20.36
Fu Wang F	2022	0.29	0.92	61.21	1	5.83	8	25.00	15	5.65	5.24	2	1285.74	20.38
Fu Wang F	2023	0.45	1.02	105.47	1	9.26	8	25.00	16	5.56	6.90	2	1817.76	20.61
Fu Wang F	2024	1.10	2.38	106.30	1	7.85	6	16.67	17	5.65	6.40	1	2770.98	20.59
Apex Food	2015	1.11	0.00	48.42	1	35.99	5	20.00	8	6.78	6.01	1	482.99	19.52
Apex Food	2016	3.95	8.79	53.44	1	35.99	5	20.00	9	7.35	6.06	1	588.49	19.53
Apex Food	2017	1.71	3.65	55.58	1	35.99	5	20.00	10	6.40	6.55	1	570.81	19.69
Apex Food	2018	0.86	1.62	56.79	1	35.99	5	20.00	11	5.92	7.11	1	663.76	19.57
Apex Food	2019	1.17	3.06	58.72	1	38.96	5	20.00	12	5.44	7.28	1	840.53	19.93
Apex Food	2020	1.83	4.90	61.95	1	38.96	5	20.00	13	5.78	7.86	2	1194.08	20.00
Apex Food	2021	1.32	4.11	61.77	1	38.96	8	25.00	14	5.48	8.15	2	995.64	20.10
Apex Food	2022	0.29	0.91	60.44	1	38.96	8	25.00	15	5.65	5.24	2	684.86	20.12
Apex Food	2023	0.44	1.01	104.14	1	38.96	8	25.00	16	5.56	6.90	2	709.38	20.35
Apex Food	2024	1.09	2.35	104.96	1	36.06	6	16.67	17	5.65	6.40	1	1037.27	20.33

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Megh Cond	2015	1.14	0.00	49.98	1	50.00	6	33.33	33	6.78	6.01	1	112.00	20.16
Megh Cond	2016	4.08	9.08	55.17	1	50.00	5	20.00	34	7.35	6.06	1	128.00	20.16
Megh Cond	2017	1.77	3.77	57.38	1	50.00	5	20.00	35	6.40	6.55	1	116.80	20.33
Megh Cond	2018	0.89	1.67	58.63	1	50.00	5	20.00	36	5.92	7.11	1	110.40	20.21
Megh Cond	2019	1.21	3.16	60.62	1	50.00	5	20.00	37	5.44	7.28	1	193.60	20.57
Megh Cond	2020	1.89	5.06	63.96	1	50.00	5	20.00	38	5.78	7.86	1	372.80	20.65
Megh Cond	2021	1.36	4.24	63.77	1	50.00	5	20.00	39	5.48	8.15	1	281.60	20.75
Megh Cond	2022	0.30	0.94	62.40	1	50.00	5	20.00	40	5.65	5.24	1	160.00	20.77
Megh Cond	2023	0.46	1.04	107.52	1	50.00	5	20.00	41	5.56	6.90	1	241.60	21.01
Megh Cond	2024	1.13	2.42	108.37	1	50.00	5	20.00	42	5.65	6.40	1	451.20	20.99
United Power	2015	15.00	25.27	702.08	1	90.00	10	10.00	6	6.78	6.01	1	70103.94	23.18
United Power	2016	20.59	25.98	948.53	1	90.00	10	20.00	7	7.35	6.06	1	63715.72	23.23
United Power	2017	43.15	45.14	1241.90	1	90.00	10	20.00	8	6.40	6.55	1	60103.64	23.53
United Power	2018	44.39	45.14	1241.92	1	90.00	10	20.00	9	5.92	7.11	1	53715.82	23.29
United Power	2019	29.73	27.91	1496.09	1	92.02	18	22.22	10	5.44	7.28	1	67144.77	23.29
United Power	2020	29.17	28.21	1629.07	1	90.00	18	22.22	11	5.78	7.86	2	99650.10	23.44
United Power	2021	26.87	26.11	3008.77	1	90.00	18	22.22	12	5.48	8.15	2	179705.53	23.60
United Power	2022	15.56	20.36	2985.12	1	90.00	18	16.67	13	5.65	5.24	2	116044.45	23.49
United Power	2023	21.42	33.59	3309.10	1	90.00	18	16.67	14	5.56	6.90	2	159937.92	24.11
United Power	2024	11.78	30.59	3319.76	1	90.00	15	20.00	15	5.65	6.40	2	144112.24	24.15
Sumit	2015	9.84	16.53	977.84	1	53.50	12	16.67	16	6.78	6.01	2	23543.30	23.16
Sumit	2016	7.82	13.72	1545.51	1	53.50	13	15.38	17	7.35	6.06	2	33800.41	23.53
Sumit	2017	11.78	14.39	1736.78	1	53.50	13	23.08	18	6.40	6.55	2	22040.78	23.59
Sumit	2018	11.78	14.39	2638.19	1	53.50	13	23.08	19	5.92	7.11	2	29696.42	24.06
Sumit	2019	10.21	12.94	2936.35	1	56.60	14	21.43	20	5.44	7.28	2	43569.39	24.14
Sumit	2020	8.20	14.07	3058.96	1	63.18	14	14.29	21	5.78	7.86	2	40472.54	24.18
Sumit	2021	10.83	15.02	3459.60	1	63.18	15	20.00	22	5.48	8.15	2	44530.48	24.19
Sumit	2022	12.10	16.20	3363.70	1	63.18	15	20.00	23	5.65	5.24	2	37482.49	24.16
Sumit	2023	11.36	15.92	3678.50	1	63.21	15	20.00	24	5.56	6.90	2	47093.38	24.29
Sumit	2024	7.39	11.02	4490.79	1	63.21	15	20.00	25	5.65	6.40	2	40045.39	24.42
MJL	2015	6.16	9.84	733.81	1	71.53	8	25.00	15	6.78	6.01	2	18529.36	23.22
MJL	2016	8.42	14.05	784.43	1	71.53	8	25.00	16	7.35	6.06	2	20079.44	23.37
MJL	2017	12.28	12.78	897.86	1	71.53	8	25.00	17	6.40	6.55	2	29728.07	23.67
MJL	2018	9.20	20.10	986.05	1	71.53	8	25.00	18	5.92	7.11	1	26409.71	23.40
MJL	2019	9.43	22.79	1115.07	1	71.53	8	25.00	19	5.44	7.28	1	36652.73	23.45
MJL	2020	7.62	22.82	1242.95	1	71.53	8	25.00	20	5.78	7.86	2	30740.03	23.63
MJL	2021	6.72	20.46	1332.85	1	71.53	8	25.00	21	5.48	8.15	3	28824.44	23.69

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MJL	2022	5.82	18.82	1367.30	1	71.53	8	25.00	22	5.65	5.24	2	20493.85	23.70
MJL	2023	7.42	18.92	1474.60	1	71.53	8	25.00	23	5.56	6.90	2	26353.76	23.70
MJL	2024	5.30	12.64	1489.16	1	71.52	10	20.00	24	5.65	6.40	2	29046.16	23.73
Padma	2015	2.61	19.87	596.75	1	0.01	8	12.50	59	6.78	6.01	1	26165.63	18.88
Padma	2016	2.36	19.53	729.09	1	0.01	8	12.50	59	7.35	6.06	1	31591.65	18.55
Padma	2017	2.00	23.41	823.66	1	0.01	8	12.50	59	6.40	6.55	1	23998.26	18.38
Padma	2018	1.65	20.53	912.78	1	0.01	8	12.50	59	5.92	7.11	1	18251.64	18.55
Padma	2019	1.39	19.96	1017.68	1	0.01	8	12.50	59	5.44	7.28	1	25137.76	18.80
Padma	2020	1.98	26.96	1245.42	1	0.01	9	22.22	59	5.78	7.86	1	22554.23	18.95
Padma	2021	1.72	20.35	1403.28	1	0.01	9	22.22	59	5.48	8.15	2	22652.47	19.04
Padma	2022	2.94	17.63	15485.37	1	2.06	9	22.22	59	5.65	5.24	2	16326.28	18.35
Padma	2023	2.43	13.82	1654.34	1	2.06	9	22.22	59	5.56	6.90	2	20019.83	18.36
Padma	2024	2.14	13.56	177.19	1	2.06	9	22.22	59	5.65	6.40	2	21031.63	18.53
DESCO	2015	7.20	7.47	1076.61	0	75.00	13	23.08	17	6.78	6.01	1	26848.87	24.25
DESCO	2016	5.33	5.92	1129.62	0	75.00	11	27.27	18	7.35	6.06	1	19517.06	24.29
DESCO	2017	12.50	12.64	1293.30	0	75.00	11	27.27	19	6.40	6.55	1	25671.65	24.38
DESCO	2018	2.68	3.03	1464.92	0	75.00	11	27.27	20	5.92	7.11	1	19918.25	24.52
DESCO	2019	0.37	1.17	1502.16	0	67.62	11	27.27	21	5.44	7.28	1	19838.73	24.60
DESCO	2020	0.92	3.16	1594.81	0	67.63	12	25.00	22	5.78	7.86	1	16737.69	24.73
DESCO	2021	1.83	6.42	1840.59	0	67.63	12	25.00	23	5.48	8.15	3	18168.94	24.91
DESCO	2022	0.64	2.45	1858.93	0	67.63	12	25.00	24	5.65	5.24	3	13835.43	24.98
DESCO	2023	0.93	2.85	2593.88	0	67.63	12	25.00	25	5.56	6.90	3	13318.59	25.09
DESCO	2024	0.75	2.40	2621.12	0	67.66	12	25.00	26	5.65	6.40	4	15425.71	25.15
AtlasBD	2015	2.47	18.78	564.05	0	1.22	6	33.33	33	6.78	6.01	1	4122.07	17.77
AtlasBD	2016	2.23	18.46	689.14	0	1.22	5	20.00	34	7.35	6.06	1	3681.18	17.63
AtlasBD	2017	1.89	22.13	778.52	0	1.22	5	20.00	35	6.40	6.55	1	3328.00	17.37
AtlasBD	2018	1.56	19.40	862.76	0	1.22	5	20.00	36	5.92	7.11	1	2818.61	17.53
AtlasBD	2019	1.31	18.87	961.91	0	1.15	5	20.00	37	5.44	7.28	1	3523.52	17.77
AtlasBD	2020	1.87	25.48	862.76	0	1.13	5	20.00	38	5.78	7.86	1	5002.19	17.91
AtlasBD	2021	1.63	19.23	1326.38	0	0.00	5	20.00	39	5.48	8.15	1	4299.90	18.00
AtlasBD	2022	2.78	16.66	862.76	0	0.00	5	20.00	40	5.65	5.24	1	3637.36	17.34
AtlasBD	2023	2.30	13.06	1563.68	0	0.00	5	20.00	41	5.56	6.90	1	4144.20	17.35
AtlasBD	2024	2.02	12.82	689.14	0	0.00	5	20.00	42	5.65	6.40	1	3620.79	17.52
BBS	2015	8.66	14.55	860.50	1	33.33	13	23.08	17	6.78	6.01	1	10963.60	20.38
BBS	2016	6.88	12.07	1360.05	1	33.33	11	27.27	18	7.35	6.06	1	12949.35	20.71
BBS	2017	10.37	12.66	1528.37	1	33.33	11	27.27	19	6.40	6.55	1	10531.52	20.76
BBS	2018	9.50	10.20	2321.61	1	33.33	11	27.27	20	5.92	7.11	1	11155.31	21.17
BBS	2019	8.98	11.39	2583.99	1	33.33	11	27.27	21	5.44	7.28	1	10928.26	21.24
BBS	2020	7.22	12.38	2691.88	1	33.33	12	25.00	22	5.78	7.86	1	9963.60	21.28
BBS	2021	9.53	13.22	3044.45	1	33.33	12	25.00	23	5.48	8.15	3	15949.35	21.29
BBS	2022	10.65	14.26	2960.06	1	32.76	12	25.00	24	5.65	5.24	3	9531.52	21.26
BBS	2023	10.00	14.01	3237.08	1	32.76	12	25.00	25	5.56	6.90	3	12155.31	21.38

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BBS	2024	6.50	9.70	3951.90	1	30.98	12	25.00	26	5.65	6.40	4	10928.26	21.49
Kay & Que	2015	7.62	12.80	757.24	1	25.41	10	20.00	27	33.00	6.01	2	68.64	17.93
Kay & Que	2016	6.06	10.62	1196.84	1	25.41	10	20.00	28	34.00	6.06	1	64.71	18.22
Kay & Que	2017	9.12	11.14	1344.96	1	25.41	10	20.00	29	35.00	6.55	1	64.71	18.27
Kay & Que	2018	9.00	11.00	2043.01	1	25.41	10	20.00	30	36.00	7.11	1	122.07	18.63
Kay & Que	2019	7.91	10.02	2273.91	1	24.06	10	20.00	31	37.00	7.28	1	321.61	18.69
Kay & Que	2020	6.35	10.90	2368.86	1	24.06	10	20.00	32	38.00	7.86	1	1030.02	18.72
Kay & Que	2021	8.39	11.63	2679.11	1	27.32	10	20.00	33	39.00	8.15	1	1036.89	18.73
Kay & Que	2022	9.37	12.55	2604.85	1	31.88	10	20.00	34	40.00	5.24	1	1016.78	18.71
Kay & Que	2023	8.80	12.33	2848.63	1	31.88	10	20.00	35	41.00	6.90	1	1101.11	18.81
Kay & Que	2024	5.72	8.53	3477.67	1	31.77	10	20.00	36	42.00	6.40	1	1298.24	18.91
BD Auto	2015	6.71	11.26	666.37	1	46.87	7	28.57	37	33.00	6.01	2	87.38	15.78
BD Auto	2016	5.33	9.35	1053.22	1	46.87	7	28.57	38	34.00	6.06	1	87.38	16.04
BD Auto	2017	8.03	9.81	1183.57	1	46.87	7	28.57	39	35.00	6.55	1	93.57	16.08
BD Auto	2018	8.00	9.50	1797.85	1	46.87	7	28.57	40	36.00	7.11	1	122.69	16.39
BD Auto	2019	6.96	8.82	2001.04	1	38.25	7	28.57	41	37.00	7.28	1	300.00	16.45
BD Auto	2020	5.59	9.59	2084.60	1	38.25	7	28.57	42	38.00	7.86	1	1417.54	16.48
BD Auto	2021	7.38	10.24	2357.62	1	35.43	7	28.57	43	39.00	8.15	1	1061.17	16.48
BD Auto	2022	8.25	11.04	2292.27	1	34.83	7	28.57	44	40.00	5.24	1	637.22	16.46
BD Auto	2023	7.74	10.85	2506.79	1	30.06	7	28.57	45	41.00	6.90	1	561.95	16.56
BD Auto	2024	5.04	7.51	3060.35	1	30.06	7	28.57	46	42.00	6.40	1	599.59	16.64
SAlom	2015	7.68	12.90	762.99	1	48.50	13	23.08	17	6.78	6.01	1	4161.10	18.07
SAlom	2016	6.10	10.71	1205.94	1	48.50	11	27.27	18	7.35	6.06	1	3246.25	18.36
SAlom	2017	8.19	10.23	1355.18	1	48.50	11	27.27	19	6.40	6.55	1	2882.27	18.41
SAlom	2018	9.19	11.23	2058.54	1	48.50	11	27.27	20	5.92	7.11	1	2518.30	18.77
SAlom	2019	7.97	10.10	2291.19	1	48.50	11	27.27	21	5.44	7.28	1	3442.99	18.84
SAlom	2020	6.40	10.98	2386.86	1	48.50	12	25.00	22	5.78	7.86	1	3079.02	18.87
SAlom	2021	8.45	11.72	2699.48	1	48.50	12	25.00	23	5.48	8.15	3	2823.25	18.87
SAlom	2022	9.44	12.64	2624.65	1	53.07	12	25.00	24	5.65	5.24	3	1829.70	18.85
SAlom	2023	8.86	12.42	2870.28	1	53.07	12	25.00	25	5.56	6.90	3	3265.92	18.96
SAlom	2024	5.77	8.60	3504.10	1	53.07	12	25.00	26	5.65	6.40	4	3315.11	19.05
BRAC	2015	0.72	9.00	1188.40	1	44.57	7	42.86	12	6.78	6.01	2	13254.81	25.95
BRAC	2016	1.09	14.11	1775.51	1	44.57	7	42.86	13	7.35	6.06	2	18654.26	26.07
BRAC	2017	1.13	13.32	1881.54	1	44.57	7	42.86	14	6.40	6.55	2	27874.99	26.17
BRAC	2018	1.89	22.16	2144.07	1	44.57	8	37.50	15	5.92	7.11	2	37653.16	26.32
BRAC	2019	2.02	22.14	2599.08	1	44.44	9	22.22	16	5.44	7.28	2	69015.42	26.49
BRAC	2020	1.87	19.25	3163.79	1	44.30	9	22.22	17	5.78	7.86	2	76362.02	26.60

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BRAC	2021	1.64	15.60	3891.90	1	44.30	7	57.14	18	5.48	8.15	2	81526.11	26.75
BRAC	2022	1.19	10.69	4647.70	1	44.29	9	55.56	19	5.65	5.24	2	42295.52	26.85
BRAC	2023	1.31	11.00	5441.90	1	46.24	11	63.64	20	5.56	6.90	5	68912.53	26.99
BRAC	2024	1.14	10.22	7694.80	1	46.24	10	70.00	21	5.65	6.40	3	62108.29	25.38
DBBL	2015	1.20	17.00	1264.17	1	87.00	9	22.22	17	6.78	6.01	3	20220.00	25.95
DBBL	2016	1.10	16.20	1451.74	1	87.00	7	28.57	18	7.35	6.06	3	17480.00	26.10
DBBL	2017	1.30	19.30	1675.33	1	87.00	7	28.57	19	6.40	6.55	3	17960.00	26.22
DBBL	2018	0.70	10.30	1760.33	1	87.00	7	28.57	20	5.92	7.11	3	20980.00	26.35
DBBL	2019	0.90	13.20	1948.22	1	87.00	7	28.57	21	5.44	7.28	3	20400.00	26.47
DBBL	2020	1.30	19.70	2308.60	1	87.00	7	28.57	22	5.78	7.86	3	24280.00	26.57
DBBL	2021	1.20	17.20	2744.33	1	87.00	6	33.33	23	5.48	8.15	3	34450.00	26.69
DBBL	2022	1.30	19.90	3225.67	1	86.99	6	33.33	24	5.65	5.24	3	28450.00	26.88
DBBL	2023	1.10	16.10	3696.64	1	86.99	6	33.33	25	5.56	6.90	3	56608.75	26.97
DBBL	2024	1.10	14.40	4163.57	1	86.99	6	33.33	26	5.65	6.40	3	45502.05	27.04
IBBL	2015	0.96	0.36	4376.06	1	65.93	16	18.75	30	6.78	6.01	4	56056.95	27.03
IBBL	2016	0.67	8.85	4662.26	1	65.93	16	31.25	31	7.35	6.06	4	40732.76	27.20
IBBL	2017	0.59	7.00	4719.96	1	65.93	14	28.57	32	6.40	6.55	4	27691.84	27.31
IBBL	2018	0.44	9.28	4718.52	1	65.93	20	40.00	33	5.92	7.11	4	47011.73	27.41
IBBL	2019	0.55	9.32	5032.89	1	44.45	20	25.00	34	5.44	7.28	4	51841.69	27.53
IBBL	2020	0.64	11.07	5489.63	1	47.72	21	23.81	35	5.78	7.86	4	38317.77	27.63
IBBL	2021	0.50	9.39	5865.16	1	48.94	21	19.05	36	5.48	8.15	4	37995.77	27.76
IBBL	2022	0.35	7.38	6161.29	1	48.93	21	19.05	37	5.65	5.24	4	28174.83	27.98
IBBL	2023	0.33	7.19	6456.13	1	51.32	21	19.05	38	5.56	6.90	4	47816.72	28.12
IBBL	2024	0.34	8.93	10414.74	1	55.08	20	20.00	39	5.65	6.40	4	52968.69	28.24
City	2015	1.30	6.30	1452.47	0	28.87	14	7.14	30	6.78	6.01	2	14179.59	25.72
City	2016	1.40	13.40	2311.78	0	28.87	14	7.14	31	7.35	6.06	4	13178.68	25.90
City	2017	1.90	18.30	2550.91	0	28.87	12	8.33	32	6.40	6.55	3	15063.73	26.09
City	2018	1.70	19.00	2065.30	0	28.87	13	15.38	33	5.92	7.11	3	21019.15	26.28
City	2019	1.40	15.90	2486.93	0	31.02	14	14.29	34	5.44	7.28	3	32754.85	26.35
City	2020	0.70	8.20	2442.99	0	30.23	4	50.00	35	5.78	7.86	3	32524.37	26.51
City	2021	0.70	9.90	2541.56	0	30.29	11	18.18	36	5.48	8.15	4	28255.55	26.60
City	2022	1.10	14.80	2881.80	0	27.92	12	16.67	37	5.65	5.24	4	16973.66	26.69
City	2023	1.20	15.80	3122.40	0	32.70	11	36.36	38	5.56	6.90	4	28174.24	26.78
City	2024	1.00	14.10	3387.43	0	32.71	11	18.18	39	5.65	6.40	2	27613.96	26.97
EBL	2015	1.68	14.44	1845.04	0	31.56	12	25.00	21	6.78	6.01	3	16501.85	25.79
EBL	2016	1.28	10.93	2008.68	0	31.56	11	18.18	22	7.35	6.06	3	17601.98	25.88
EBL	2017	1.23	10.95	2049.60	0	31.56	11	18.18	23	6.40	6.55	3	15890.67	25.98
EBL	2018	1.33	12.94	2057.16	0	31.56	11	18.18	24	5.92	7.11	3	20523.42	26.08
EBL	2019	1.04	11.41	2158.55	0	31.56	11	18.18	25	5.44	7.28	3	25829.99	26.27
EBL	2020	1.15	13.83	2296.62	0	31.56	11	18.18	26	5.78	7.86	3	24944.39	26.38
EBL	2021	1.30	16.52	2556.74	0	31.56	10	20.00	27	5.48	8.15	3	30686.02	26.55
EBL	2022	1.22	15.04	2897.60	0	31.56	11	9.09	28	5.65	5.24	3	25084.61	26.54

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EBL	2023	1.28	15.51	3101.70	0	28.33	13	15.38	29	5.56	6.90	3	33385.26	26.70
EBL	2024	1.21	15.51	3576.16	0	30.67	14	21.43	30	5.65	6.40	3	35612.22	26.85
UBL	2015	1.22	5.93	1367.06	1	12.56	14	7.14	41	6.78	6.01	2	15412.92	24.21
UBL	2016	1.32	12.61	2175.85	1	12.56	14	7.14	42	7.35	6.06	4	9841.98	24.38
UBL	2017	1.79	17.22	2400.92	1	12.56	12	8.33	43	6.40	6.55	3	7681.54	24.56
UBL	2018	1.60	17.88	1943.86	1	12.56	13	15.38	44	5.92	7.11	3	8081.62	24.74
UBL	2019	1.32	14.97	2340.70	1	12.56	14	14.29	45	5.44	7.28	3	9801.97	24.80
UBL	2020	0.66	7.72	2299.34	1	12.56	4	50.00	46	5.78	7.86	3	9881.98	24.95
UBL	2021	0.66	9.32	2392.12	1	18.15	11	18.18	47	5.48	8.15	4	11548.72	25.04
UBL	2022	1.04	13.93	2712.35	1	24.51	12	16.67	48	5.65	5.24	4	11896.00	25.12
UBL	2023	1.13	14.87	2938.80	1	30.54	11	36.36	49	5.56	6.90	4	13383.00	25.20
UBL	2024	0.94	13.27	3188.25	1	30.56	11	18.18	50	5.65	6.40	2	14934.75	25.38
DBL	2015	1.58	13.59	1736.55	1	39.08	12	25.00	21	6.78	6.01	3	12940.44	24.27
DBL	2016	1.20	10.29	1890.57	1	39.08	11	18.18	22	7.35	6.06	3	11370.26	24.36
DBL	2017	1.16	10.31	1929.08	1	39.08	11	18.18	23	6.40	6.55	3	10881.34	24.45
DBL	2018	1.25	12.18	1936.20	1	39.08	11	18.18	24	5.92	7.11	3	10318.51	24.55
DBL	2019	0.98	10.74	2031.63	1	39.14	11	18.18	25	5.44	7.28	3	13506.93	24.72
DBL	2020	1.08	13.02	2161.58	1	40.04	11	18.18	26	5.78	7.86	3	11538.67	24.83
DBL	2021	1.22	15.55	2406.40	1	40.48	10	20.00	27	5.48	8.15	3	11603.68	24.99
DBL	2022	1.15	14.16	2727.22	1	40.62	11	9.09	28	5.65	5.24	3	8617.44	24.98
DBL	2023	1.20	14.60	2919.32	1	41.12	13	15.38	29	5.56	6.90	3	13389.71	25.13
DBL	2024	1.14	14.60	3365.88	1	42.54	14	21.43	30	5.65	6.40	3	13009.86	25.28
BAL	2015	1.17	5.68	1310.47	1	46.47	7	28.57	18	6.78	6.01	3	13387.10	23.20
BAL	2016	1.26	12.09	2085.77	1	46.47	7	28.57	19	7.35	6.06	3	13962.82	23.37
BAL	2017	1.71	16.51	2301.52	1	46.47	7	28.57	20	6.40	6.55	3	12757.29	23.54
BAL	2018	1.53	17.14	1863.38	1	46.47	7	28.57	21	5.92	7.11	3	14100.16	23.71
BAL	2019	1.26	14.35	2243.79	1	45.12	7	28.57	22	5.44	7.28	3	15157.67	23.77
BAL	2020	0.63	7.40	2204.15	1	51.77	6	33.33	23	5.78	7.86	3	19098.66	23.92
BAL	2021	0.63	8.93	2293.08	1	52.30	6	33.33	24	5.48	8.15	3	20636.55	24.00
BAL	2022	0.99	13.35	2600.06	1	51.20	6	33.33	25	5.65	5.24	3	18887.69	24.08
BAL	2023	1.08	14.26	2817.14	1	53.47	6	33.33	26	5.56	6.90	3	21685.87	24.16
BAL	2024	0.90	12.72	3056.26	1	53.29	14	7.14	30	5.65	6.40	2	24250.86	24.33
IFIC BL	2015	1.52	13.03	1664.66	1	8.48	14	7.14	35	6.78	6.01	4	8336.28	23.27
IFIC BL	2016	1.15	9.86	1812.30	1	8.48	12	8.33	36	7.35	6.06	3	10724.87	23.35
IFIC BL	2017	1.11	9.88	1849.22	1	8.48	13	15.38	37	6.40	6.55	3	9715.86	23.44
IFIC BL	2018	1.20	11.67	1856.04	1	8.48	14	14.29	38	5.92	7.11	3	8004.26	23.53
IFIC BL	2019	0.94	10.29	1947.52	1	6.57	4	50.00	39	5.44	7.28	3	19508.24	23.70
IFIC BL	2020	1.04	12.48	2072.09	1	5.92	11	18.18	40	5.78	7.86	4	17001.98	23.80
IFIC BL	2021	1.17	14.90	2306.78	1	8.33	12	16.67	41	5.48	8.15	4	13922.88	23.95
IFIC BL	2022	1.10	13.57	2614.31	1	4.41	11	36.36	42	5.65	5.24	4	12664.47	23.95
IFIC BL	2023	1.15	13.99	2798.46	1	4.11	11	18.18	43	5.56	6.90	2	21601.02	24.09
IFIC BL	2024	1.09	13.99	3226.53	1	6.14	11	18.18	44	5.65	6.40	2	22145.30	24.23
EXIM BL	2015	1.30	11.15	1424.95	1	47.10	14	7.14	30	6.78	6.01	2	14825.95	19.92

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EXIM BL	2016	0.99	8.44	1551.33	1	47.10	14	7.14	31	7.35	6.06	4	12967.03	19.99
EXIM BL	2017	0.95	8.46	1582.93	1	47.10	12	8.33	32	6.40	6.55	3	12710.26	20.06
EXIM BL	2018	1.03	9.99	1588.77	1	47.10	13	15.38	33	5.92	7.11	3	11298.01	20.14
EXIM BL	2019	0.80	8.81	1667.08	1	42.83	14	14.29	34	5.44	7.28	3	17229.46	20.29
EXIM BL	2020	0.89	10.68	1773.71	1	41.58	4	50.00	35	5.78	7.86	3	16805.78	20.37
EXIM BL	2021	1.00	12.76	1974.60	1	40.47	11	18.18	36	5.48	8.15	4	15958.43	20.50
EXIM BL	2022	0.94	11.62	2237.85	1	37.95	12	16.67	37	5.65	5.24	4	12145.35	20.50
EXIM BL	2023	0.99	11.98	2395.48	1	37.95	11	36.36	38	5.56	6.90	4	16791.66	20.62
EXIM BL	2024	0.93	11.98	2761.91	1	37.10	11	18.18	39	5.65	6.40	2	15778.37	20.74
ICB	2015	4.98	11.74	2563.88	1	69.81	11	0.00	40	6.78	6.01	2	75789.84	25.08
ICB	2016	4.28	11.97	2594.42	1	69.81	10	0.00	41	7.35	6.06	2	79702.73	25.28
ICB	2017	4.27	10.03	3856.61	1	69.81	10	0.00	42	6.40	6.55	2	79481.25	25.44
ICB	2018	2.70	8.86	3231.33	1	69.81	10	0.00	43	5.92	7.11	2	71381.25	25.62
ICB	2019	2.98	9.37	4926.86	1	69.81	10	0.00	44	5.44	7.28	3	110552.34	25.89
ICB	2020	2.53	10.94	3804.85	1	69.81	10	0.00	45	5.78	7.86	3	100863.98	25.87
ICB	2021	0.33	1.40	4304.16	1	69.81	9	0.00	46	5.48	8.15	4	80860.62	25.94
ICB	2022	0.28	1.30	4361.33	1	69.81	9	0.00	47	5.65	5.24	3	52493.12	26.03
ICB	2023	0.57	2.60	4430.20	1	69.81	9	0.00	48	5.56	6.90	3	94522.16	26.03

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Stata-Code

```
import excel " D:\DBA\Thesis \ Database.xlsx", sheet("Sheet2") firstrow clear
xtset Code Year
xtreg roa familyfirm ownershipcon boardsize boardind age lnta lnnetthwor boardcom1 marketcap1, re
estimates store re_model
xtreg roa familyfirm ownershipcon boardsize boardind age lnta lnnetthwor boardcom1 marketcap1, fe
estimates store fe_model
hausman fe_model re_model
xtreg roa familyfirm ownershipcon boardsize boardind age lnta lnnetthwor boardcom1 marketcap1, fe
outreg2 using " D:\DBA\Thesis\output1.xls", excel append  ctitle (fe) tstat  adds(R2 within, e(r2_w), R2 overall, e(r2_o), R2 between, e(r2_b), F-stat, e(F), Prob > F, e(p) ) addt(Firm FE, Yes, Firm Cluster, No, seasonal adjustment, No)
xtreg roa familyfirm ownershipcon boardsize boardind age lnta lnnetthwor boardcom1 marketcap1, re
outreg2 using " D:\DBA\Thesis\output2.xls", excel append  ctitle (re) tstat  adds(R2 within, e(r2_w), R2 overall, e(r2_o), R2 between, e(r2_b), F-stat, e(F), Prob > F, e(p) ) addt(Firm FE, Yes, Firm Cluster, No, seasonal adjustment, No)
xtgls roa familyfirm ownershipcon boardsize boardind age lnta lnnetthwor boardcom1 marketcap1, pcse
```

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```
outreg2 using " D:\DBA\Thesis\output3.xls", excel append  ctitle (pcse) tstat  adds(R2 within, e(r2_w), R2 overall, e(r2_o), R2 between, e(r2_b), F-stat, e(F), Prob > F, e(p) ) addt(Firm FE, Yes, Firm Cluster, No, seasonal adjustment, No)
reg roa familyfirm ownershipcon boardsize boardind age lnta lnnetthwor boardcom1 marketcap1
outreg2 using " D:\DBA\Thesis\output4.xls", excel append  ctitle (pooled ols) tstat adds(R2 within, e(r2_w), R2 overall, e(r2_o), R2 between, e(r2_b), F-stat, e(F), Prob > F, e(p) ) addt(Firm FE, Yes, Firm Cluster, No, seasonal adjustment, No)
xtreg roa familyfirm ownershipcon boardsize boardind age lnta lnnetthwor boardcom1 marketcap1 inflation, fe
outreg2 using " D:\DBA\Thesis\output5.xls", excel append  ctitle (Model I) tstat  adds(R2 within, e(r2_w), R2 overall, e(r2_o), R2 between, e(r2_b), F-stat, e(F), Prob > F, e(p) ) addt(Firm FE, Yes, Firm Cluster, No, seasonal adjustment, No)
xtreg roa familyfirm ownershipcon boardsize boardind age lnta lnnetthwor boardcom1 marketcap1 gdpgrowth, fe
outreg2 using " D:\DBA\Thesis\output5.xls", excel append  ctitle ( Model II) tstat  adds(R2 within, e(r2_w), R2 overall, e(r2_o), R2 between, e(r2_b), F-stat, e(F), Prob > F, e(p) ) addt(Firm FE, Yes, Firm Cluster, No, seasonal adjustment, No)
xtreg roa familyfirm ownershipcon boardsize boardind age lnta lnnetthwor boardcom1 marketcap1 inflation gdpgrowth, fe
outreg2 using " D:\DBA\Thesis\output5.xls", excel append  ctitle (Model III) tstat adds(R2 within, e(r2_w), R2 overall, e(r2_o), R2 between, e(r2_b), F-stat, e(F), Prob > F, e(p) ) addt(Firm FE, Yes, Firm Cluster, No, seasonal adjustment, No)
```

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```
xtreg roe familyfirm ownershipcon boardsize boardind age lnta lnnetthwor boardcom1
marketcap1, fe
outreg2 using " D:\DBA\Thesis\output6.xls", excel append  ctitle (Measurement error)
tstat  adds(R2 within, e(r2_w), R2 overall, e(r2_o), R2 between, e(r2_b), F-stat, e(F), Prob
> F, e(p) ) addt(Firm FE, Yes, Firm Cluster, No, seasonal adjustment, No)
```

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R-Code

```
m<-read.csv(file.choose())
X=cbind(1,m$familyfirm,m$ownershipcon,m$boardsize,m$boardind,m$age,m$lnta,m$l
nnetthwor,m$boardcom1,m$marketcap1)
y=m$roa
n=length(y)
p=ncol(X)
model1=lm(roa~familyfirm+ownershipcon+boardsize+boardind+age+lnta+lnnetthwor+b
oardcom1+marketcap1,data=m)
model1$coefficients
summary(model1)
install.packages("car")
library(car)
vif(model1)
install.packages("ggcorrplot")
library(ggcorrplot)
cor_matrix <- cor(X[,-1], use = "complete.obs")
ggcorrplot(cor_matrix, lab = TRUE)
install.packages("olsrr")
library(olsrr)
ols_eigen_cindex(model1)
influence.measures(model1)
```

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```
betah=solve(t(X)%*%X)%*%t(X)%*%y

yh=X%*%betah

eh=y-yh

SSE=sum(eh^2)

TSS=sum(y^2)-((sum(y))^2)/n

Rsq=1-SSE/TSS

AdjRsq=1-((n-1)*(1-Rsq))/(n-p)

MSE=SSE/(n-p-1)

res=model1$residuals

stdres=res/sqrt(MSE)

H=X%*%solve(t(X)%*%X)%*%t(X)

hii=diag(H)

stdntres=res/sqrt(MSE*(1-hii))

s2=((n-p)*MSE-(res^2)/(1-hii))/(n-p-1)

estdntres=res/sqrt(s2*(1-hii))

estdntres

plot(predict(model1),estdntres)

abline(h=0)

install.packages("lmtest")

library(lmtest)

bptest(model1)

install.packages("skedastic")

library(skedastic)

white_test_result <- white(model1)
```

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```
print(white_test_result)

si=1:n

op=(si-0.5)/n

tval=sort(estdntres)

plot(tval,op)

cfs=lm(op~tval)$coefficients

abline(cfs[1],cfs[2], col = "blue")

install.packages("nortest")

library(nortest)

ad_test_result <- ad.test(estdntres )

print(ad_test_result)

install.packages("tseries")

library(tseries)

jb_test_result <- jarque.bera.test(estdntres)

print(jb_test_result)

m<-read.csv(file.choose())

install.packages("plm")

library(plm)

m_panel <- pdata.frame(m, index = c("Code", "Year"))

X=cbind(1,m$familyfirm,m$ownershipcon,m$boardsize,m$boardind,m$age,m$lnta,m$l

nnetthwor,m$boardcom1,m$marketcap1)

y=m$roa

n=length(y)

p=ncol(X)
```

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```
model1=plm(roa~familyfirm+ownershipcon+boardsize+boardind+age+lnta+lnnetthwor+
boardcom1+marketcap1,,data=m_panel, model = "within")
model1$coefficients
summary(model1)
pwartest(model1)
pcdtest(model1, test = "cd")
```