Nexus between Corporate Governance and Financial Performance of Listed Commercial Banks at the Nairobi Securities Exchange

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Abstract: The study sought to examine the effect of Corporate Governance (CG) on the financial performance of listed commercial banks in Kenya. The research was based on descriptive research design with the target population being all the 11 commercial banks that have offered their shares at the NSE. The per annum panel data was sourced from end-year statements of banks the study focuses on. The secondary data used covered a period of 10 years from 2012 to 2021. The sourced data on data collection sheets was transferred to Excel sheets before being exported to STATA version 15. The study employed the Panel Correlated Standard Errors (PCSE) model. The overall p-value associated with the models used in the study showed that CG variables (board gender diversity, board independence, board experience, board ownership and board size) and bank size had a significant effect on the financial performance (ROA) of listed commercial banks in Kenya. The effect of board size on ROA and ROE was direct but weak. However, board size inversely and weakly affected P/B. Further, board gender diversity inversely affected performance measured by ROA, ROE and P/B. However, only board gender diversity had a strong effect on ROA. Board independence strongly and directly affected financial performance (ROA, ROE and P/B) of the banks studied. Board experience had a direct but weak effect on financial performance. Further, there was a direct and major impact of board ownership on financial performance (ROA and ROE). However, the effect of board ownership on P/B was inverse and statistically significant. Finally, the results revealed a direct impact of bank size on financial performance (ROA and ROE). However, bank size effect on ROE was weak. Further, bank size impact on P/B was inverse and weak.

Keywords: Corporate Governance, Financial Performance, Board Gender Diversity, Board Independence, Board Experience, Board Ownership, Board Size and Bank Size.

1. Introduction

Corporate governance is a key pillar in all organizations to guide investment strategy, proper management of the firm, limit risks and fraud, and hence improve profitability. Many researchers across the world have examined the nexus between corporate governance (CG) and firms' financial performance. The majority of studies have tended to reveal a direct link between CG mechanisms and financial performance. Karanja (2017) revealed there is a direct link between CG measures (CEO duality, gender diversity, board independence and size) and the performance of banks that have floated common stock at the NSE. CG occupies a central role in achieving stockholder optimization. Good CG is crucial in improving firms' market value (Azeez, 2015). The concept of CG has been defined differently by scholars, practitioners and capital market authorities. CG is an avenue through which firms and organizations are controlled and directed. It is a collection of systems, rules and associations by which a firm applies authority and control. According to Capital Markets ACT 485A, (2012), CG are structures

and processes adopted to organise, manage and direct the affairs of the firm to improve performance, transparency and accountability with the overall aim of achieving the optimization of stockholder welfare as well as interest of other stakeholders. Further, the Basel committee held that CG is a collection of associations existing among the board of directors, the executive, stockholders and other stakeholders such that a structure is made available upon which the aims and goals of the firm are formulated, achieved and measured. The concept of CG as used in banking institutions is critical for the financial intermediation role of commercial banks. CG ensures that the banking sector is safeguarded via the application of good governance tools. According to The Banking Act of Kenya (2013), CG is the way by which the issues of institutions that are banking in nature are governed by the executive and board of directors. Further, CG avails the structures needed to accomplish the goals of banking institutions. They also provide the mechanism for achieving the goals set as well as monitoring and evaluation of performance targets. According to the Basel Committee, (2015), CG seeks to establish a manner in which responsibility and authority are allocated among the directors and senior management responsible for the affairs of banking institutions. Financial performance is the profit generation capability of the firm. Financial performance is the analysis of a firm's financial status as segregated in terms of liabilities, assets, expenses, equity, revenue, and overall profitability. Financial performance is a kind of scorecard for determining the success of a business organization in utilizing its assets to generate revenues (Zabri, Ahmad & Wah, 2016). Financial performance is a firm's quantification of financial health within a specific period and is useful for comparison with other organizations of similar stature and operations. Financial performance is also critical when making comparisons across industries. The financial performance of a firm can be captured by various indicators including ROA, ROE, sales growth, liquidity, and solvency (Rasheed & Nisar, 2018). These ratios measure different categories of performance. Liquidity ratios capture the capability of the business to settle short-term obligations as they arise. The firm must determine its ability to pay short-term liabilities as failure to do so may hurt normal business operations. Solvency ratios such as equity ratios, measure the amount of debt in comparison to the net worth of the firms' owners (Detthamrong, Chancharat & Vithessonthi, 2017). The management of the firm should also be able to determine its long-term survival chances measured via the solvency ratios. Profitability ratios capture the capability of the business firm to generate profit. The higher the profitability ratios the higher the financial performance (Akbar, Jiang, Qureshi & Akbar, 2021).

The commercial banking institutions in Kenya are regulated by the CBK acting on authority accorded by the CBK Act, Companies Act, Banking Act and various prudential guidelines made available by CBK. As of December 2021, there were 41 commercial banks, 1 mortgage firm, 3 Credit Reference Bureaus (CRBs), 14 deposit-taking MFBs, 8 non-operating holding companies, 9 representative offices of foreign banks, 17 Money Remittance Providers (MRPs), 66 forex bureaus and 1 Mortgage Refinance Company. Of the 41 commercial banks, only 11 have floated their shares at the NSE. The Banks in Kenya are members of the Kenya Bankers Association (KBA) which is a body that lobbies in matters regarding regulations impacting on affairs of the members (CBK,2021). The listed banks in Kenya are further regulated by the Capital Market Authority (CMA) before they can float shares at the NSE. The listed banks licensed as of 31 December 2021 included ABSA, Equity, I& M, Kenya Commercial Bank, Stanbic, National Bank, NCBA, Co-operative Bank, Standard Chartered, Diamond Trust Bank Kenya and HF (CMA,2022). Their shares are readily available in the secondary market. The listed banks occupy the tire one of the commercial banks in Kenya. In 2021, all listed banks recorded strong financial performance with all of them being in the profitability. Of the 11 listed commercial banks, 8 recorded an ROA of 3% and above with only national bank, DTB and HF recording an ROA below 3% (CBK, 2021). Commercial banks that have floated shares in Kenya are regulated by the CBK and CMA and have to submit quarterly reports to the regulators. Listed commercial banks in Kenya have been exposed to various shocks in the last 10 years including the interest rate regulations in 2016 and the COVID-19 pandemic in 2020. During such shocks, the financial performance has been impacted majorly. In 2017, most listed commercial banks reported a slump in financial performance as measured by ROA and ROE (CBK 2017, 2021). Listed commercial banks in Kenya have been adopting various corporate governance mechanisms including board gender diversity, size, experience, executive stock ownership and independence. Based on reviewed research papers, knowledge gaps still exist that inform the current study. First, there is scanty research on the nexus between CG on the Market price per share, compared to the book value of firms listed in NSE. Secondly, most of the studies have focused on a 5-year timeline to conclude. Therefore, the current study sought to bridge the gap in the literature by examining the impact of CG on the market share price, compared to book value as well as seek to update on the impact of corporate governance implementation over the last 10 years on performance at banks at the NSE. The study thus sought an answer to the research question, what is the impact of corporate governance on the financial performance of banks listed in NSE?

2. Literature Review

2.1. Theoretical Review

This section covers the theories that this study is based on including Agency, stakeholders and stewardship theories. The theories inform the link between CG and financial performance.

2.1.1 Agency Theory

The theory was first postulated by Berle, (1932) who explained that control and ownership of PLC ought to be separated. The agency theory was further refined by Jensen and Meckling (1976) who defined the agency relationship as that one that obtains between the shareholders and the executive such that the executive does things that ensure that the welfare of the shareholder is optimised. The theory works on the premise that the management who is the agent of the stockholders will carry out the business of managing the firm in such a way that the welfare of stockholders is optimised. However, in most cases agency problem arises when the executive decides to achieve their interests as opposed to that of the stockholders (Jensen and Meckling, 1976). Davis, Schoorman and Donaldson (1997) further supported the theory regarding agency problem results from PLC companies having their ownership and control separated. To solve the agency problem, shareholders incur agency costs. Agency costs are those expenses incurred in employing a board of directors, auditor and motivation of management. The shareholders elect and remunerate directors to help in monitoring the function of management who are employed to run the affairs of the company on a day-to-day basis (Bhimani, 2008). In addition to directors, the shareholders are involved in the services of external auditors who examine books of accounts and ensure that the income statement, statement of financial position and cash flow statements reflect the true status of the financial status of the business. In getting the services of an external auditor, the shareholders incur auditing fees payable to the auditor (Holmstrom & Milgrom, 1994). Finally, the shareholders may incur additional costs in terms of remuneration for the management to discourage them from pursuing interests that conflict with those of the shareholders. The shareholders may tie the compensation of senior managers to the performance of the corporation such that there is convergence between the interests of shareholders and managers. The agency theory has been criticized for concentrating on the interest of shareholders that is wealth maximization. This view is myopic in that there are other stakeholders whose interests are important for the sustainability of the corporation. For instance, a business that does not pay taxes to the government or pay employees may soon find itself closed out of business (Panda & Leepsa, 2017). The theory also assumes that managers cannot be entrusted with running the affairs of the company hence, their work must be closely monitored by directors and external auditors. The theory thus underscores the importance of having managers who are given the freedom to take actions that they see fit for the sustainability of the firm even if the action is not in line with shareholder wealth maximization (Hill & Jones, 1992). The theory informs the nexus between CG and financial performance. The directors are employed by the shareholders to ensure that the management team are running the affairs of the company in such a way that the welfare of the shareholders is maximized. Through corporate governance practices, the directors are critical in bringing a convergence between the interests of the shareholders and the management of the company. When the conflict between interests and goals of agents and principals is eliminated or reduced, the key goal remaining is financial performance.

2.1.2 Stakeholders Theory

The Stakeholders' theory was first advanced by Freeman (1984) to examine the role of firms' stakeholders in the achievement of the goal of the firm. The stakeholder goes a step further beyond the agency theory by examining the interests of multiple stakeholders whose needs and interests are critical in the long-term survival of the company beyond the shareholders (Freeman, 1984). The theory describes stakeholders as groups and individuals who have an interest in the affairs of the corporation and can determine its long-term survival. The stakeholders include suppliers, customers, political action groups, employees, environmental groups, the media, financiers, government agencies and local communities. The theory holds that the achievement of the goals of the business cannot be achieved without meeting the needs and interests of key stakeholders. Beyond the goal of shareholder wealth maximization, the company must maximize the welfare of other broader stakeholder groups. The company is required to identify its key stakeholders as well as their interests and find a way of meeting their needs and interests (Freeman, 1984). The management must find a way to balance the competing needs of key stakeholders for it to be successful (Jensen., 2002). The stakeholder theory has been criticized for assuming that the management can meet the needs and interests of stakeholders. In reality, some of the needs and interests of stakeholders are in conflict. For instance, the goal of maximizing the welfare of employees can only be achieved through salary and other benefits increments (Phillips, 1997). However, increasing salaries and other benefits can only be achieved through increased operational expenses of the corporation hence reduction in profits that the shareholders seek to maximize. The theory also just like agency theory, assumes that managers are people who cannot be entrusted to act in the best interest of the corporation hence must be controlled via incurring agency costs (Bailur, 2006). The theory is critical in the current study on the nexus between financial performance and CG practices. The theory informs the role of directors through CG in balancing the interests of the key stakeholders to ensure the sustainable running of the firm. The directors must ensure that the corporation meets the interests and needs of other key stakeholders apart from the shareholders.

2.2 Empirical Review

Kimani (2020) evaluated the contribution of CG to the ROE of firms that have offered shares at NSE. The descriptive design was based on a census of sixty-four corporations. Annual panel data was sourced from books of accounts from 2015 to 2019. The study adopted a multiple-panel data regression model. The effect of the director's remuneration and board gender on ROE was direct. Further, the controlling for firm size effects showed a major impact on performance. A study by Kimani (2020)

was however on all listed firms and a study focusing on listed commercial banks would provide a more focused application of the study findings in the banking sector. Karanja (2017) examined whether CG influences firm performance among commercial banks that had offered their common stock at the NSE. The study focused on aspects of CG including gender diversity, Board size, directors' independence, CEO duality, and board composition. The research sourced data from annual reports for the period from 2006-2013. The study adopted a panel regression model with findings revealing that CG had a major contribution indicator of performance. The research is reliable to conclude the topic due to a longer duration of study of 8 years, compared to other studies that use a 5-year timeline. Karanja (2017) did not explore all the key metrics it had stated under the conceptual framework as a measure of financial performance. The impact of corporate governance on the price-to-earnings ratio is left out of the analysis and conclusion. This, therefore, presents a conceptual gap in the study. Ahmed and Rugami (2019) evaluated the causal effect link between CG and Sacco's performance in Kilifi County. The descriptive research type was based on a target population of 200 directors derived from 40 SACCOs. The research adopted purposive sampling to pick 30 SACCOs that had at least 5 directors. The OLS regression revealed that CG was critical in explaining financial performance. Further, the study revealed that firms having small and highly experienced boards tended to perform better. Ahmed and Rugami (2019) were limited to using primary data collected via questionnaires that do not adequately capture all aspects of CG. Further the study was based on SACCOS and another study on banks would extend the breadth of the applicability of the study. In another study, Kisare, (2016) evaluated whether CG elements had a causal effect relationship with financial performance. Aspects of CG included transparency, shareholder's rights, disclosure and board operation. The study adopted secondary data sourced from financial statements. The analysis based on regression showed that CG contributed to financial performance in a major way. Therefore, good CG contributed to adequate risk management, translating to improved bank performance. There is a conceptual gap in this study as it did not take into account control variables which might affect the outcome of the study. The study also used ROA as the only measure of bank financial performance, which is not a conclusive indicator of company financial performance. Kisare, (2016) did not exhaustively examine all aspects of CG hence another study concentrating on aspects left out would expand the applicability of the parameter estimates in decision-making.

Kimeu (2017) sought to evaluate whether CG influences the performance of banks that have offered shares at NSE. The census study focused on CG aspects including board diversity, board size, frequency of board meetings and board independence. The study measured financial performance using ROA with annual secondary data being analysed using a regression model. The study established that the frequency of board meetings, the size of the committee, independence of the board had a direct contribution to commercial banks' financial performance. However, the effect of board diversity and board size was weak. Stdu by Kimeu (2017) was carried out five years ago and there have been changes in the banking industry hence another study ought to be carried out based on current data. Among listed commercial banks at the NSE, Njenga (2017) evaluated whether CG impacts on financial performance. The study targeted all listed commercial banks with data being sourced from annual published financial statements from 2012 to 2016. The study adopted a multiple regression model with findings revealing that board composition, board size and CEO duality majorly affected banks' financial performance. Njenga (2017) did not exhaustively analyse key CG aspects hence another study with additional aspects of CG will be useful in improving the model for decision-making. Further, the study was based on the 5-year period which is not long enough to examine structural breaks in data. In a study of insurance firms operating in Kenya, Mwamburi (2017) evaluated the causal effect link between financial performance and CG. The study was a cross-sectional study sourcing secondary data from forty-nine firms from 2011 to 2015. The research adopted multiple regression analyses with findings revealing that CEO duality, board composition, board size, and board sub-committees have a major direct effect on financial performance. In a study among banks in Nigeria, Okoye et.al. (2020) evaluated the causal effect link between CG practices and profitability. The CG was measured using directors' share ownership and board size. The study used bank size as the control variable. The research adopted a generalized method of moments with the study revealing that firm size, board size and directors' stock ownership had a major impact on profitability. A critical analysis of Okoye et.al. (2020) showed that there is a contextual gap emanating from the study, as it was carried out in Nigeria with different operating environments.

In a study of banks in the East and North Africa region, El-Chaarani et.al, (2022) evaluated how external and internal CG mechanisms influence financial performance. The study was based on the Orbis Bankscope Database. The study revealed that executive stock ownership and institutional investors had a direct effect on performance. The study further revealed that independent directors were valuable during the pandemic in monitoring banks' risks. The research used. El-Chaarani et.al, (2022) was limited to one year which cannot enable the examination of break analysis. Further, the study was carried out in the Kenyan context and hence may not be readily applied in the Kenyan context hence there is a need for another study among Kenyan listed commercial banks. In an analysis of insurance firms that had publicly traded shares in Slovakia, Grofcikova (2020) evaluated the causal effect relationship between CG aspects and performance. The research adopted correlation analysis with findings revealing that financial performance was majorly explained by CG practices. Grofcikova (2020) was carried out in Slovakia hence may not be readily applied in the Kenyan context the a need for another study locally. Kyere and Ausloos (2020) evaluated the causal effect link obtaining between financial performance and corporate governance mechanisms. The study focused on CG aspects including board size, executive shareholding, CEO duality, independent directors and frequency of audit committee meetings. The research targeted one hundred and fifty-two firms listed on the London Stock Exchange. The

study data was analysed based on a regression model with the findings revealing board independence and board size explained ROA and Tobin Q. Further, the audit committee meetings frequency affected ROA but not Tobin's Q. CEO duality did not influence financial performance at all. Kyere and Ausloos (2020) were carried out in the context of the UK with a different regulatory environment hence may not be readily applied in the Kenya context. Among firms operating in India, Mohan and Chandramohan (2018) examined whether CG influences firm performance. Financial performance was captured using proxies such as ROE, and Price to Book (PB) ratio while CG was measured using aspects such as CEO duality, board composition and board size. The study adopted a panel data model with secondary annual data being sourced from 30 firms that have their common stock floated at the Bombay Stock Exchange. Mohan and Chandramohan (2018) were based on all listed firms and not just listed commercial banks, besides, the study was not carried out in a Kenyan context and hence may not be readily applied to management decision-making.

In a study of banks in Nigeria, Ayoola and Obokoh (2018) evaluated the causal effect link obtaining between financial distress and CG. The study focused on aspects of CG including executive management, audit committee and auditor. The study relied on annual secondary data sourced between 2005 and 2015 from twenty banks. The research adopted a generalized quantile regression model. The finding showed that financially distressed banks, had large board sizes, had inexperienced boards of directors and the CEO and board chair had significant stock ownership. Among listed firms in Tanzania, Assenga, Aly and Hussainey (2018) examined whether the financial performance of the firm was impacted by board composition. Aspects of the board examined included board size, board skills, and female directors among others. The study was based on panel data from 80 firms with annual data being sourced between 2006 to 2013 from annual reports and structured interviews were performed. The study adopted a panel regression model for parameter estimations. The research established that CEO duality had a major effect on financial performance. Assenga, Aly and Hussainey (2018) were carried out among listed firms in general in Tanzania hence the parameter estimates may not be readily applied to decision making in Kenyan banking sectors. Eissa et al (2019) evaluated how CG mechanisms affected the financial performance of hotel businesses in India. The research focused on aspects of CG including board characteristics, audit committee characteristics and institutional ownership. The research was a descriptive study based on panel data of 30 firms with secondary data being sourced from 2013 to 2016. The study adopted a panel data regression model with findings showing that board and audit committee size and institutional ownership had a major effect on financial performance measured by ROA. Further, the composition of the board and audit committee and firm age did not influence ROA. Eissa et al (2019) were carried out in the hotel sectors in India that have different operating environments from banking firms. Further, the study was based on a 4-year period that cannot capture structural breaks in data.

3. Methodology

3.1 Research Design, Target Population and Data Collection

The research was based on a descriptive research design to examine the impact of CG mechanisms on financial performance. The target population was all the eleven commercial banks that have offered their shares at the NSE. The selection of listed banks was informed by the fact that listed banks have a clear distinction between ownership and management. Since all banks listed in NSE will be studied, there will be no need for sampling. The per annum panel data was sourced from end-year statements of banks the study focuses on. The data regarding the variable board size was the number of board directors. The data regarding variable board gender diversity included No. of directors who are of female gender and board size. Regarding the variable board experience, the average number of years the directors have been on the board was extracted. Concerning board independence, the study collected data on No. of independent directors and board size. The study also collected data on shares held by the directors. Firm size saw the researcher collect data on the total assets of the bank. Regarding financial performance, data to be collected included after-tax income, liabilities, total assets, shareholders' funds and market price of shares. The secondary data used covered a period of 10 years (2012 – 2021).

3.2 Diagnostic Tests

The estimation model was subjected to diagnostic tests for robustness. Before parameters are estimated, certain assumptions mustn't be violated to generate reliable estimates. The study specifically examined assumptions including normality, linearity, collinearity, homoscedasticity, stationarity, and autocorrelation among others. Linearity is said to exist when independent (X) and dependent (Y) variables are related to each other strongly in the form of Y=bX+c, such that c is the intercept and b is the slope of the function. The study used R to measure the extent of linearity with linearity nearing 1 signifying a strong linear relationship (Gujarati, 2008). Normality describes the quality of data such that the mean and median are equal and the data depicts a symmetric bell shape when plotted on a normal curve (Garson, 2012). The normality of the residuals is a necessary condition when adopting the ordinary least squares model. The study adopted the Shapiro-Wilk test to examine the normality

of the residuals. For normal data, the p-values on the test should be greater than 0.05 signifying that there is no significant difference between the characteristics of the population and the sample. Autocorrelation as used in statistics describes the feature of data such that current values of a variable is highly correlated with lagged values of the same variable. Autocorrelation is associated with an inflated coefficient of determination and misleading parameter estimates (Garson,2012). The research adopted the Wooldridge Drukker test to examine the presence of serial correlation. P-values lower than 0.05 level of significance depict the presence of serial correlation. In the presence of autocorrelation, the study may adopt contemporaneous panel data model variants such as panel correlated standard errors (PCSEs) or the Feasible Generalised least squares (FGLS) model to eliminate autocorrelation. The ordinary least squares model is based on the assumption of constant and finite error variances in the data that describe homoscedasticity. The opposite of homoscedasticity is heteroscedasticity. Heteroscedasticity describes a lack of constant error variance (Gujarati, 2008). Heteroscedasticity results in misleading standard errors leading to misleading parameter estimates that cannot be relied on. The study adopted the Modified Wald test Gujarati (2008) to examine the presence of heteroscedasticity such that p-values lower than 0.05 level of significance signify the presence of heteroscedasticity. In the absence of homoscedasticity, the study can either adopt robust standard errors if there is no serial correlation or panel-correlated standard errors (PCSEs) if the model also suffers from autocorrelation. Multicollinearity is said to exist in the model when explanatory variables are highly correlated among themselves (Burns & Burns, 2008). Multicollinearity problem leads to inflated parameter estimates and should be avoided or eliminated. Variance Inflation Factor was used to determine the presence of multicollinearity among explanatory variables. VIF values higher than 10 signify the presence of multicollinearity (Gujarati, 2008). In the presence of multicollinearity, the study would drop the variable causing multicollinearity. In statistics, stationarity describes the feature of data to depict variance, autocorrelation and mean that does not change significantly with time. The data that is stationary is said to lack unit roots (Gujarati, 2008). The research deployed Augmented Dickey-Fuller (ADF) unit root test to examine the stationarity of the model. If the P-value associated with the test is larger than 0.05 level of significance, then it means that the model and data have unit roots. In the presence of unit roots, the study will adopt panel-correlated standard errors (PCSEs). To choose between fixed effect and random effect models, the study will adopt the Hausman test. When the time-invariant error term capturing the unobserved variables that also affect the dependent variable is highly correlated with the observed explanatory variables, the OLS model is said to be inconsistent. Generally, the researcher should adopt REM unless the null hypothesis of no significant differences between the parameter estimates is rejected. In such cases, FEM is more appropriate (Meryem, 2011). In the presence of serial correlation and group heteroskedasticity, the study would adopt panel-correlated standard errors (PCSEs) that correct for serial correlation and heteroskedasticity.

3.3 Data Analysis

The sourced data on data collection sheets was transferred to Excel sheets before being exported to STATA version 15. The study employed descriptive statistics analysis and a panel data regression model. Descriptive statistics were used to measure mean, standard deviation, minimum and maximum. A panel regression model was adopted to examine the nexus between CG practices and financial performance. The regression models presented in equations [1-3] will be adopted to examine the nexus between the regressors and regressand. The following panel regression model was estimated;

$$ROA_{it}= \alpha + \beta_1 SIZE_{it} + \beta_2 GEND_{it} + \beta_3 IND_{it} + \beta_4 EXP_{it} + \beta_5 OWN_{it} + B_6 BS_{it} + \epsilon …………………………………Equation\ 1$$
$$ROE_{it}= \alpha + \beta_1 SIZE_{it} + \beta_2 GEND_{it} + \beta_3 IND_{it} + \beta_4 EXP_{it} + \beta_5 OWN_{it} + B_6 BS_{it} + \epsilon …………………………………Equation\ 2$$
$$P/B_{it}= \alpha + \beta_1 SIZE_{it} + \beta_2 GEND_{it} + \beta_3 IND_{it} + \beta_4 EXP_{it} + \beta_5 OWN_{it} + B_6 BS_{it} + \epsilon …………….…………………………Equation\ 3$$

Where:
ROA = Return on Assets, BFP = Bank Financial Performance, P/B = Price to book value ratio, ROA = Return on Assets
ROE= Return on Equity, α = Intercept Term, β1 – β6 = Parameter Estimates , SIZE = Board Size, GEND = Board diversity
IND = Board Independence, EXP = board experience, OWN = board ownership, BS = Bank size
i…cross-sectional units (1-11), t = Current time and ϵ = error term, t is the current period, i is correctional units

Table 1: Operationalization of Study Variables

Variable	Notation	Measurement
Bank Financial Performance	ROA	After-tax profit to Total Assets ratio
	ROE	After-tax profit to total equity ratio
	P/B	Market Price to Book Value per Share
Board Size	SIZE	Ln of total No. of directors on the board
Board Gender Diversity	GEND	No. of Female Directors to board size
Board Independence	IND	No. Independent Directors to Board size
Board Experience	EXP	No. of years as a board member
Board Ownership	OWN	No. of shares held by directors to Total company shares.
Bank Size	BS	Ln of total bank assets

4 Results

4.1 Descriptive Statistics

The descriptive analysis was carried out to observe the general movement in study variables and identify outliers that would impair the inferential analysis. The finding is presented in Table 2.

Table 2: Summary of Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
roa	100	.0410614	.0250843	-.017677	.221698
roe	100	.2528568	.1046898	-.11677	.493752
pb	100	1.252567	.9324356	.01234	4.54518
size	100	10.47	1.654226	7	14
gend	100	.2278822	.1297545	0	.5
ind	100	.5765366	.188156	.076923	.909091
exp	100	4.2032	.5113003	2.1	4.75
own	100	.0368417	.0560704	8.50e-06	.197666
bs	100	288.0354	171.0161	4.0686	877.415

Roa = Return on assets, **roe** = Return on equity, **pb**= Price to book value, **gend** = board gender diversity, **ind**= board independence, **exp** = board experience, **own**= board ownership, **bs** = bank size and **size** = board size.

The findings [Table 2] showed that the number of observations was 100. The observations were derived from 10 listed commercial banks for 10 years. One Bank (National Bank of Kenya) was dropped from the study given that it was acquired by Kenya Commercial Bank in 2019 becoming part of KCB. Financial Performance for the commercial banks listed at the NSE was measured using three proxies including ROA, ROE and P/B. The mean for ROA was .0410 implying that profit after tax was about 4.1% of the total assets of the listed commercial banks in Kenya within the study period. The standard deviation was .025 meaning, the ROA for individual banks was spread around the mean of all the 10 commercial banks by 2.5%. Further, the minimum capturing the bank with the lowest ROA was -.017 showing loss-making. The maximum capturing the bank with the highest ROA was .22. The mean ROE was .2528 implying that the listed commercial banks had an average ROE of 25.2% of the shareholder's funds. The standard deviation was .1049 implying individual banks' ROE was spread around the mean ROE by 10.49%. The minimum capturing bank with the lowest ROE was -.1167 and the maximum capturing bank with the highest ROE was .4937. The price to book value had a mean of 1.25 implying that on average, the market price per share during the study period was more than 1.25 times the book value per share. The standard deviation showed that individual bank P/B spread around the mean by .9324. The minimum was .012 showing the bank with the lowest P/V and the maximum was 4.54 revealing the bank with the highest P/V. Board size as captured by the number of directors on the board showed a mean of 10.47 revealing that on average, the listed commercial banks had about 10 directors on the board. The standard deviation was 1.65 hence on average, individual banks' board sizes were spread around the mean for all listed banks by about 2 directors. The minimum board size was 7 directors and the maximum board size was 14 directors. The board gender diversity captured by the ratio of female directors to total board size had a mean of .227 meaning that the listed commercial banks in Kenya had about 23% of their boards being occupied by female directors. The standard deviation for gender diversity revealed

that individual banks' board gender diversity was distributed around the mean gender diversity by .1297. The minimum capturing the bank with the lowest gender diversity was zero implying that the board had no female director during that year. The maximum capturing the bank with the highest board gender diversity was .5 meaning half of the board was occupied by female directors in that year. The board independence measured by the ratio of independent non-executive directors to total board size had a mean of .5765 meaning the listed commercial banks on average had 57% of their boards occupied by independent non-executive directors. The standard deviation showed that individual banks had their board independence spread around the mean board independence by .1881. The minimum capturing the bank with the lowest board independence was .076 meaning there were just about 7.6% independent non-executive directors in the board in that year. The maximum capturing the bank with the highest board independence was .9090 implying that the specific listed bank in that year had about 90% of the board occupied by independent non-executive directors. Board experience measured by average length of stay of all directors had a mean of 4.20 meaning that the whole board for the listed banks had stayed for about 4 years in the board. The standard deviation was .511 implying that the board experience of individual banks was spread around the mean board experience by about 0.51. The minimum board experience was 2.1 and the maximum was 4.75. The board ownership measured as the ratio of shares owned by the directors to all shares fully paid had a mean of .03684 meaning that the directors of the listed commercial banks owned about 3.6% of the shares. The standard deviation was .056 capturing the spread of board ownership of individual banks from the mean board ownership of all banks. The minimum was .0000085 capturing the bank with the lowest board ownership and the maximum was .1976 capturing the bank with the highest board ownership of about 19.7%. Finally, bank size measured by total assets in billion Kenyan shillings showed a mean of ksh.288.03 billion. The standard deviation for bank size was Ksh. 171.01. The minimum capturing the smallest bank was Ksh. 4.06 billion and the maximum capturing the largest bank was Ksh. 877.41 billion.

4.2 Diagnostic Tests

The estimation model was subjected to diagnostic tests for robustness. Before parameters are estimated, certain assumptions ought not be violated to generate reliable estimates. The study specifically examined assumptions including normality, linearity, collinearity, homoscedasticity, stationarity, and autocorrelation among others. The study used R to measure the extent of linearity with linearity nearing 1 signifying a strong linear relationship (Gujarati, 2008). ROA, ROE and P/V values were regressed against CG variables. The ROA, ROE and P/B value models had R values of 0.7380, 0.6244 and 0.6953 respectively. The values showed strong linearity.

Table 3: Variance Inflation Factor test for Multicollinearity

Variable	VIF	1/VIF
bs	1.95	0.513215
size	1.67	0.599011
gend	1.64	0.608388
own	1.39	0.718686
ind	1.28	0.782241
exp	1.10	0.911087
Mean VIF	1.50	

gend = board gender diversity, **ind**= board independence, **exp** = board experience, **own**= board ownership, **bs** = bank size and **size** = board size.

The finding presented in Table 3 showed that all the VIF values were lower than 10 hence it was concluded that the models that used parameter estimation did not suffer from collinearity problems. The study used adopt Shapiro-wilk test to examine the normality of the residuals. For normal data, the p-values on the test would be greater than 0.05 signifying that there is no significant difference between the characteristics of the population and the sample. The results [Table 4] showed that the variables used in the study were normal given that all the p-values were higher than 0.05 level of significance.

Table 4: Shapiro-wilk test for Normality

Variable	Obs	W	V	z	Prob>z
roa	100	0.97546	2.008	1.555	0.05470
roe	100	0.97641	1.955	1.359	0.08527
pb	100	0.93362	2.001	1.474	0.04908
size	100	0.97543	2.029	1.570	0.05826
gend	100	0.97767	1.844	1.357	0.08736
ind	100	0.98466	1.818	1.345	0.08770
exp	100	0.97417	2.001	1.530	0.05400
own	100	0.97873	1.985	1.399	0.07501
bs	100	0.98782	1.808	1.327	0.08510

Roa = Return on assets, **roe** = Return on equity, **pb**= Price to book value, **gend** = board gender diversity, **ind**= board independence, **exp** = board experience, **own**= board ownership, **bs** = bank size and **size** = board size.

The study adopted the Modified Wald test Gujarati (2008) to examine the presence of heteroscedasticity such that p-values lower than 0.05 level of would signify the presence of heteroscedasticity. In the absence of homoscedasticity, the study can adopt robust standard errors if there is no serial correlation or panel-correlated standard errors (PCSEs) if the model also suffers from autocorrelation. The finding presented in Table 5 showed that the three models used in the analysis suffered from heteroskedasticity problems from the ROA, ROE and P/B models. The study thus adopted panel-correlated standard errors (PCSEs).

Table 5: Modified Wald test for Heteroskedasticity

```
Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2 (10)  =      70.08
Prob>chi2 =      0.0000
```
```
Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2 (10)  =      526.93
Prob>chi2 =      0.0000
```
```
Modified Wald test for groupwise heteroskedasticity
in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2 (10)  =      364.97
Prob>chi2 =      0.0000
```

The research adopted the Wooldridge Drukker test to examine the presence of serial correlation. P-values lower than 0.05 level of significance would depict the presence of serial correlation. In the presence of autocorrelation, the study may adopt contemporaneous panel data model variants such as panel correlated standard errors (PCSEs) or the Feasible Generalised least

squares (FGLS) model to eliminate autocorrelation. The finding [Table 6] showed that the three models used in the analysis suffered from serial correlation problems. The study thus adopted PCSEs to eliminate serial correlation.

Table 6: Wooldridge Drukker Test for Serial Correlation

```
Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
    F(  1,        9) =      11.421
             Prob > F =       0.0081

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
    F(  1,        9) =      10.202
             Prob > F =       0.0104

Wooldridge test for autocorrelation in panel data
H0: no first order autocorrelation
    F(  1,        9) =       9.905
             Prob > F =       0.0118
```

The research deployed Augmented Dickey-Fuller (ADF) unit root test to examine the stationarity of the model. If the P-value associated with the test is larger than 0.05 level of significance, then it means that the model and data have unit roots. In the presence of unit roots, the study would adopt panel-correlated standard errors (PCSEs). The results [Table 7] revealed that the ROA model suffered from the presence of unit units given that the p-value was greater than 0.05, however, the ROE and P/B models were stationary as p-values were lower than 0.05 level of significance.

Table 7: Augmented Dickey-Fuller (ADF) unit root test

Model	Unadjusted t	Adjusted t*	p-value
ROA	-3.7476	0.3454	0.6351
ROE	-4.1002	-1.8231	0.0341
P/B	-7.2549	-5.7798	0.0000

4.3 Regression Analysis

The study adopted the Panel Correlated Standard Errors (PCSEs) model given that the estimation models suffered from the problem of group heteroskedasticity and serial correlation. The regression models have various outputs including coefficient of determination, regression coefficients and t-test as presented in Tables [8 - 10].

4.3.1 Effect of Corporate Governance on Return on Assets

The research examined the effect of CG and Bank size on the financial performance of listed commercial banks in Kenya. The financial performance was measured using ROA with the Panel Correlated Standard Errors regression model being adopted as shown by findings in Table 8. The finding [Table 8] showed that the coefficient of determination (R-squared) for the ROA model was 0.5447 implying that corporate governance variables (board gender diversity, board independence, board experience, board ownership and board size) and bank size explained 54.4% of the total variation in financial performance measured by ROA. The residual variation of 45.6% was explained by unobserved variables that were not components of the estimation model. Further, the overall p-value (p= .0042) was less than .05 implying that the CG had a significant effect on the financial performance of listed commercial banks in Kenya. The effect of board size on financial performance measured by ROA was direct but not significant ($\beta1 = .01785$, t=.96 and p= .336>.05). The effect of board gender diversity on ROA was inverse and significant ($\beta2 = -.0737$, t = - 2.15 and p = .032<.05). Board independence had a direct and major effect on ROA ($\beta3 = .02721$, t = 1.96 and p= .05). The study also established that the effect of board experience on ROA was direct but not significant ($\beta4 = .00042$, t= .49 and p= .621>.05). Board ownership had a direct and significant effect on ROA ($\beta5 = .1599$, t= 3.05 and p=.002 <.05). Finally, the effect of bank size on ROA was direct and significant ($\beta6 = .0188$, t= 2.19 and p=.025<.05). The intercept term ($\alpha = .4829$) showed that when CG variables and bank size were held constant at zero, the financial performance of listed commercial banks as measured by ROA was .48. The model was thus estimated as shown in equation 4.

Table 8: Panel Correlated Standard Errors (ROA Model)

```
Group variable:    id                        Number of obs    =         100
Time variable:     year                      Number of groups =          10
Panels:            correlated (balanced)     Obs per group:
Autocorrelation:   panel-specific AR(1)                min =          10
                                                        avg =          10
                                                        max =          10
Estimated covariances     =        55        R-squared        =      0.5447
Estimated autocorrelations =       10        Wald chi2(6)     =       18.99
Estimated coefficients    =         7        Prob > chi2      =      0.0042
```

roa	Coef.	Panel-corrected Std. Err.	z	P>|z|	[95% Conf. Interval]	
size	.017852	.0185508	0.96	0.336	-.0185069	.0542108
gend	-.0737479	.0343332	-2.15	0.032	-.1410398	-.006456
ind	.0272161	.0138692	1.96	0.050	-.0001631	.0545952
exp	.0004297	.0008698	0.49	0.621	-.0012751	.0021345
own	.1599819	.0523811	3.05	0.002	.0573168	.262647
bs	.0188491	.0086192	2.19	0.029	-.0357425	.0219557
_cons	.4829989	.2159576	2.24	0.025	.0597298	.9062679
rhos =	.4714936	.6313139 .1565483	.9382338	.1846689 ...	-.164208	

Dependent Variable: Roa = Return on assets,

Predictors: gend = board gender diversity, ind= board independence, exp = board experience, own= board ownership, bs = bank size and size = board size.

$ROA_{it} = .4829 + 01785\ SIZE_{it} -.0737 GEND_{it} + .02721\ IND_{it} + .00042\ EXP_{it} + .1599\ OWN_{it} + .0188\ BS_{it}$ …………………………………………………………………………….………..... (Equation 4)

4.3.2 Effect of Corporate Governance on Return on Equity

The research examined the effect of CG and Bank size on the financial performance of listed commercial banks in Kenya. The financial performance was measured using ROE with the Panel Correlated Standard Errors regression model being adopted as shown by findings in Table 9. The finding [Table 9] showed that the coefficient of determination (R-squared) for the ROE model was 0.3900 implying that corporate governance variables (board gender diversity, board independence, board experience, board ownership and board size) and bank size explained 39 % of the variation in financial performance measured by ROE. The residual variation of 61% was explained by unobserved variables that were not components of the estimation model. Further, the overall p-value (p= .0061) was less than .05 implying that the CG had a significant effect on the financial performance of listed commercial banks in Kenya. The effect of board size on financial performance measured by ROE was direct but not significant (β_1 = .0112, t=.19 and p= .851>.05). The effect of board gender diversity on ROE was inverse and not significant (β_2= -.0565, t = -.68 and p = .50<.05). Board independence had a direct and significant effect on ROE (β_3= .0228, t = 2.77 and p= .007<.05). The study also established that the effect of board experience on ROE was direct but not significant (β_4= .0059, t= 1.83 and p= .068>.05). Board ownership had a direct and significant effect on ROE (β_5= .3246, t= 2.36 and p=.018<.05). Finally, the effect of bank size on ROE was direct but not significant (β_6= .010, t= 1.74 and p=.081>.05). The intercept term (α = -.1187) showed that when CG variables and bank size were held constant at zero, the financial performance of listed commercial banks as measured by ROE was -.11. The model was thus estimated as

$ROE_{it} = -.11 + .0112\ SIZE_{it} -.0565\ GEND_{it} + 0228\ IND_{it} + .0059\ EXP_{it} + .3246\ OWN_{it} +.010\ BS_{it}$ ……………………………………………………………………………….…..... (Equation 5)

Table 9: Panel Correlated Standard Errors (ROE Model)

```
Group variable:    id                    Number of obs     =        100
Time variable:     year                  Number of groups  =         10
Panels:            correlated (balanced) Obs per group:
Autocorrelation:   panel-specific AR(1)                    min =        10
                                                           avg =        10
                                                           max =        10

Estimated covariances      =      55     R-squared         =     0.3900
Estimated autocorrelations =      10     Wald chi2(6)      =      13.64
Estimated coefficients     =       6     Prob > chi2       =     0.0061
```

	Panel-corrected					
roe	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
size	.0112066	.0597183	0.19	0.851	-.1282523	.1058391
gend	-.0565147	.0837019	-0.68	0.500	-.2205674	.107538
ind	.0228675	.0082500	2.77	0.007	-.0865671	.140832
exp	.0059616	.0032665	1.83	0.068	-.0004406	.0123639
own	.3246818	.1378121	2.36	0.018	.0545751	.5947884
bs	.0103633	.0059487	1.74	0.081	-.001296	.0220226
_cons	-.1187999	.5968163	-0.20	0.842	-1.288538	1.050938

```
rhos =   .5284865   .4063695   .5319619   .7054963   .8104928 ... -.1924549
```

Dependent Variable: roe = Return on equity,
Predictors: **gend** = board gender diversity, **ind**= board independence, **exp** = board experience, **own**= board ownership, **bs** = bank size and **size** = board size.

4.3.3 Effect of Corporate Governance on Price to Book Value

The research examined the effect of CG and Bank size on the financial performance of listed commercial banks in Kenya. The financial performance was measured using ROE with the Panel Correlated Standard Errors regression model being adopted as shown by findings in Table 10. The finding [Table 10] showed that the coefficient of determination (R-squared) for the P/B model was 0.4835 implying that corporate governance variables (board gender diversity, board independence, board experience, board ownership and board size) and bank size explained 48.35% of the variation in financial performance measured by P/B. The residual variation of 51.65% was explained by unobserved variables that were not components of the estimation model. Further, the overall p-value (p= .0050) was less than .05 implying that the CG had a significant effect on the financial performance of listed commercial banks in Kenya.

The effect of board size on financial performance measured by P/B was inverse and not significant (β_1 = -.1744708, t= -0.44 and p= 0.656 >.05). The effect of board gender diversity on P/B was inverse and not significant (β_2= -.3264507, t = -0.48 and p = 0.628>.05). Board independence had a direct and significant effect on P/B (β_3= .2871165, t = 2.05 and p= 0.023<.007). The study also established that the effect of board experience on P/B was direct but not significant (β_4= .0076445, t= 0.24 and p= 0.807 >.05). Board ownership had an inverse and significant effect on P/B (β_5= -1.718351, t= -2.41 and p= 0.016 <.05). Finally, the effect of bank size on P/B was inverse and not significant (β_6= -.0214297, t= -0.54 and p= 0.592>.05). The intercept term (α = 1.52) showed that when CG variables and bank size were held constant at zero, the financial performance of listed commercial banks as measured by P/B was -.11. The model was thus estimated as

$$P/B_{it} = 1.52 + -.174 \text{ } SIZE_{it} -.326 \text{ } GEND_{it} + .287 \text{ } IND_{it} + .0076EXP_{it} + -1.71 \text{ } OWN_{it} + -.021 \text{ } BS_{it} \text{ ....(Equation 6)}$$

Table 10: Panel Correlated Standard Errors (P/B Model)

```
Group variable:    id                        Number of obs      =        100
Time variable:     year                      Number of groups   =         10
Panels:            correlated (balanced)     Obs per group:
Autocorrelation:   panel-specific AR(1)                   min =         10
                                                          avg =         10
                                                          max =         10

Estimated covariances    =       55           R-squared      =      0.4835
Estimated autocorrelations =     10           Wald chi2(6)   =       15.44
Estimated coefficients   =        6           Prob > chi2    =      0.0050
```

| | Panel-corrected | | | | | |
pb	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
size	-.1744708	.3922615	-0.44	0.656	-.5943477	.9432892
gend	-.3264507	.6742369	-0.48	0.628	-.9950294	-.1479313
ind	.2871165	.1403033	2.05	0.023	-.2818675	.8561006
exp	.0076445	.0313588	0.24	0.807	-.0538177	.0691067
own	-1.718351	.7138434	-2.41	0.016	-2.319243	3.117458
bs	-.0214297	.0400187	-0.54	0.592	-.0570055	.0998649
_cons	1.520091	4.17372	0.36	0.716	-6.66025	9.700431

```
rhos =  .7159676  .8468576  .8898423  .5524259  .7928927 ...  .4393352
```

Roa = Return on assets, **roe** = Return on equity, **pb**= Price to book value, **gend** = board gender diversity, **ind**= board independence, **exp** = board experience, **own**= board ownership, **bs** = bank size and **size** = board size.

5. Discussion

The study sought to examine the effect of CG on the financial performance of listed commercial banks in Kenya. Financial performance was measured using proxies including ROA, ROE and P/B. The study adopted a panel regression model to estimate the three regression models with CG having a higher explanatory power over the ROA model compared to the other two models (ROE and P/B). The study thus settled on ROA model parameter estimates.

5.1 Effect of Board Size on Financial Performance

The regression model showed that the effect of board size on ROA and ROE was direct but not significant ($\beta1$ = .01785, t=.96 and p= .336; $\beta1$ = .0112, t=.19 and p= .851). However, the effect of board size on P/B was inverse and not significant ($\beta1$ = -.1744, t= -0.44 and p= 0.656 >.05). The direct causal effect relationship between board size and firm performance as measured by ROA and ROE implies that listed banks having larger boards tended to perform better compared to their counterparts that had smaller boards. Banks that had larger boards were in apposition to have adequate and experienced members in the committees which are critical to the functioning of the board in monitoring the work of the management. Thus, banks having larger boards were able to ensure adequate monitoring and oversight of banks operations hence increased profitability measured by ROA and ROE. However, the negative relationship between board size and P/B could imply that increased profitability due to larger boards could have led to increased retention hence increasing book value per share relative to market price per share hence a fall in the P/B value ratio. The study finding was in congruence with Njenga (2017) who evaluated whether CG impacts financial performance. The study revealed that board size directly affected banks' financial performance. Further, Mwamburi (2017) evaluated the causal effect link obtaining between financial performance and CG. The research findings revealed that board size had a direct effect on financial performance. Kyere and Ausloos (2020) evaluated the causal effect link obtaining between financial performance and corporate governance mechanisms with findings revealing board size explained ROA. Wangui (2017) established that the size of the board directly impacted ROE and ROA. Topal and Dogan, (2014) find a direct relationship between performance and board size. Further, the findings are contrary to Uwuigbe and Fakile, (2012) who revealed that banks having larger tended to record lower profits compared to counterparts that had

smaller boards.

5.2 Effect of board diversity on financial Performance

The panel regression analysis also established an inverse effect of board gender diversity on financial performance measured by ROA, ROE and P/B ($\beta2$= -.0737, t = - 2.15 and p = .032; $\beta2$= -.0565, t = -.68 and p = .50; $\beta2$= -.3264507, t = -0.48 and p = 0.628). However, only the effect of board gender diversity on ROA was significant. The inverse causal effect relationship between board gender diversity and financial performance measured by ROA and ROE implies that having an increased number of female directors relative to males on the boards of listed commercial banks resulted in reduced portability. The reduced profitability could be due to female directors being more risk averse compared to male counterparts hence not pushing for relatively risky projects that may earn more revenues for the firm. Moreover, females tend to have home responsibilities that hinder their optimal output on the boards in terms of monitoring and oversight of the running of the firms. Additionally, the inverse causal effect relationship between board gender diversity and P/B could imply that listed banks having more female directors relative to male directors could send a signal of conservative banks that may not readily adopt more risky investment opportunities. Hence reduced market price of shares relative to book value leading to inverse association between gender diversity and P/B. The findings are contrary to Andersson and Wallgren (2018) who examined the nexus between the performance of the firm and gender diversity on the board findings that shareholder value was affected positively by greater gender diversity. Moreover, Farhana, (2020) concludes that gender diversity in the boardrooms has no relationship with bank financial performance. However, Kimani (2020) established that the effect of board gender diversity on ROE was directly contrary to the findings in this study. Karanja (2017) examined whether CG influences firm performance among commercial banks that had offered their common stock at the NSE. The findings showed that gender diversity had a major contribution indicator of performance.

5.3 Effect of Board independence on Financial Performance

The estimated panel regression model revealed that the effect of board independence on financial performance (ROA, ROE and P/B) of listed commercial banks in Kenya was direct and major ($\beta3$= .02721, t = 1.96 and p= .05; $\beta3$= .0228, t = 2.77 and p= .007; $\beta3$= .2871165, t = 2.05 and p= 0.023<.007). The direct effect of board independence on ROA and ROE implies that listed commercial banks in Kenya that had more independent and non-executive directors relative to executive directors tended to outperform their peers that had fewer independent and non-executive directors on their boards. The independent non-executive directors ensure objective deliberation on matters discussed on boards since they have minimal or no interest in the internal affairs of the banks. Independent directors ensure that the work of board committees in monitoring and oversight of the management team is above board. Therefore, banks having more independent non-executive directors contributes to improved profitability in terms of ROA and ROE. Further, the direct relationship between board independence and P/B ratio was direct implying that listed commercial banks that had more independent non-executive directors scored better in terms of good corporate governance. The banks therefore sent a signal to the market of a well-run bank leading to improved market price of shares of the banks relative to the book value hence the direct relationship between board independence and P/B. The study finding is in agreement with Kimeu (2017) sought to evaluate whether CG influences the performance of banks that have offered shares at NSE. The study established that the independence of the board had a direct contribution to commercial banks' financial performance. El-Chaarani et.al, (2022) evaluated how external and internal CG mechanisms influence financial performance. The study revealed that executive stock ownership had a direct effect on performance. The study further revealed that independent directors were valuable during the pandemic in monitoring banks' risks. Fuzi et.al.(2016) revealed that boards having more independence tended to outperform their counterparts with few or no non-executive directors. However, Coles, McWilliams and Sen, (2001) revealed that having more representation of non-executive independent directors at the board jeopardized firm performance.

5.4 Effect of Board Experience on Financial Performance

The panel regression analysis showed that the effect of board experience on financial performance (ROA, ROE and P/B) was direct but not significant ($\beta4$= .00042, t= .49 and p= .621; $\beta4$= .0059, t= 1.83 and p= .068; $\beta4$= .0076445, t= 0.24 and p= 0.807). The direct causal effect relationship between board experience and financial performance (ROA and ROE) implies that listed commercial banks with more experienced boards relative to their peers with less experienced boards tended to perform better in terms of profitability. More experienced directors on the boards were associated with directors who understand the operations of a bank hence they can provide effective monitoring and oversight of the work of the management team. The more years the directors spent on the board, the better their understanding of the operations of the banks hence improved profitability. Further, the direct causal effect relationship between board independence and P/B implies that boards with more experienced executive directors especially the CEO sent a signal of bank stability. Hence, increased demand for shares of such banks leads to an increase in market price per share relative to book value. The findings agree with Ayoola and Obokoh (2018) who evaluated the causal effect link obtaining between financial distress and CG. The finding showed that financially distressed banks had inexperienced boards of directors. Shiah-Hou and Cheng (2012) examined the influence of directors'

experience and remuneration on firm performance. The study established that the experience of independent directors had a direct impact on market and accounting performance. Further, Waithaka, (2014) evaluated the causal effect link between financial performance and board technical expertise. The findings showed that the causal effect link between board tactical expertise and financial performance was direct. Further, Sheikh et.al, (2021) established that boards that had highly experienced directors also tended to contribute to improved financial performance. However, Shan and McIver, (2011) found contrary results with their study revealing that the board expertise did not influence financial performance.

5.5 Effect of Board ownership on financial Performance.

The analysis revealed a direct and significant causal effect link between board ownership and financial performance measured by ROA and ROE ($\beta5$= .1599, t= 3.05 and p=.002; $\beta5$= .3246, t= 2.36 and p=.018). However, the effect of board ownership on P/B was inverse and statistically significant ($\beta5$= -1.718351, t= -2.41 and p= 0.016 <.05). The direct effect of board ownership on ROA and ROE of listed commercial banks in Kenya implies that boards where the directors owned more shares as a ratio of total shares of the bank tended to earn more profits compared to peers whose boards held few shares of its company. Board ownership made the directors and management part of the bank ownership hence such banks had their boards and management taking up calculated risks to ensure improved profitability which also translates to improved dividend earnings. Banks with more relative board ownership pursued investment opportunities that promised high profits and dividends for the owners. Further, the inverse relationship between board ownership and P/B was inverse implying that banks whose directors owned a relatively larger ratio of the bank's shares may send a signal of directors who may be less objective in monitoring and oversight work of management. The demand for the shares of such banks may therefore be low relative to book value hence the inverse relationship between board ownership and P/B. The study findings agreed with Okoye et.al. (2020) who evaluated the causal effect link between CG practices and profitability. The research revealed that directors' stock ownership had a major impact on profitability. Further, El-Chaarani et.al, (2022) on the nexus between profitability and managerial ownership established that increased insider ownership resulted in better convergence between the interests of the executive and the shareholders. Habtoor (2021) further established that there was a major direct link between bank performance and executive stock ownership. Kangai (2019) examined the causal effect link between commercial banks' financial performance and ownership structure. The study showed that managerial and foreign ownership had a direct impact on ROA.

5.6 Effect of Bank Size on Financial Performance

Finally, the regression analysis results revealed a direct effect of bank size on ROA and ROE ($\beta6$= .0188, t= 2.19 and p=.025; $\beta6$= .010, t= 1.74 and p=.081>.05). However, the effect was bank size on ROE was not significant. Further, the effect of bank size on P/B was inverse and not significant ($\beta6$= -.0214297, t= -0.54 and p= 0.592>.05). The direct impact of bank size on the financial performance of listed commercial banks in Kenya implied that banks that had more assets performed better than their counterparts with relatively fewer assets. A leading asset component of banks is loans and advances that earn interest income to the bank. Therefore, banks with more assets also performed better in terms of profitability. Further, the causal effect link between bank size and P/B was inverse implying that banks with larger asset sizes may also send a signal of over-trading and aggressive loaning to the market hence a perception of extreme risk-taking. The market may respond via low demand for such shares hence the low market price of shares relative to book value and hence the inverse link between bank size and P/B. The findings are in congruence with Kimani (2020) who showed that firm size effects on performance were major and direct. Ahmed and Rugami (2019) evaluated the causal effect link between CG and Sacco's performance in Kilifi County. The findings revealed that CG and firm size were critical in explaining financial performance. Further, Kisare, (2016) on evaluating whether CG elements and firm size had a causal effect relationship with financial performance. The results showed that CG and firm size contributed to financial performance in a major way. Okoye et.al. (2020) showed that firm size had a major impact on profitability.

6. Conclusions

The research showed that the effect of board size on ROA and ROE was direct but not significant. However, the effect of board size on P/B was inverse and not significant. The study concluded that listed banks having larger boards tended to perform better compared to their counterparts that had smaller boards. Banks that had larger boards were in a position to have adequate and experienced members in the committees which are critical to the functioning of the board in monitoring the work of the management. Thus, banks having larger boards were able to ensure adequate monitoring and oversight of banks operations hence increased profitability measured by ROA and ROE. However, the negative relationship between board size and P/B could imply that increased profitability due to larger boards could have led to increased retention hence increasing book value per share relative to market price per share hence a fall in the P/B value ratio. The study established an inverse effect of board gender diversity on financial performance measured by ROA, ROE and P/B. The research concluded that

having an increased number of female directors relative to males on the boards of listed commercial banks resulted in reduced portability. The reduced profitability could be due to female directors being more risk averse compared to male counterparts hence not pushing for relatively risky projects that may earn more revenues to the firm. Additionally, the inverse causal effect relationship between board gender diversity and P/B could imply that listed banks having more female directors relative to male directors could send a signal of conservative banks that may not readily adopt more risky investment opportunities. Hence reduced market price of shares relative to book value leading to inverse association between gender diversity and P/B.

The study also revealed that the effect of board independence on the financial performance (ROA, ROE and P/B) of listed commercial banks in Kenya was direct and major. The research thus concluded that listed commercial banks in Kenya that had more independent and non-executive directors relative to executive directors tended to outperform their peers that had fewer independent and non-executive directors on their boards. The independent non-executive directors ensure objective deliberation on matters discussed on boards since they have minimal or no interest in the internal affairs of the banks. Independent directors ensure that the work of board committees in monitoring and oversight of the management team is above board. Therefore, banks having more independent non-executive directors contributes to improved profitability in terms of ROA and ROE. Further, the direct relationship between board independence and P/B ratio was direct implying that listed commercial banks that had more independent non-executive directors scored better in terms of good corporate governance. The banks therefore sent a signal to the market of a well-run bank leading to improved market price of shares of the banks relative to the book value hence the direct relationship between board independence and P/B.

The analysis showed that the effect of board experience on financial performance (ROA, ROE and P/B) was direct. The study thus concluded that listed commercial banks with more experienced boards relative to their peers with less experienced boards tended to perform better in terms of profitability. More experienced directors on the boards were associated with directors who understand the operations of a bank hence they can provide effective monitoring and oversight of the work of the management team. The more years the directors spent on the board, the better their understanding of the operations of the banks hence improved profitability. Further, the direct causal effect relationship between board independence and P/B implies that boards with more experienced executive directors especially the CEO sent a signal of bank stability. Hence, increased demand for shares of such banks leads to an increase in market price per share relative to book value. The findings revealed a direct causal effect link between board ownership and financial performance measured by ROA and ROE. However, the effect of board ownership on P/B was inverse. The study concluded that boards where the directors owned more shares as a ratio of total shares of the bank tended to earn more profits compared to peers whose boards held few shares of the company. Board ownership made the directors and management part of the bank ownership hence such banks had their boards and management taking up calculated risks to ensure improved profitability which also translates to improved dividend earnings. Banks with more relative board ownership pursued investment opportunities that promised high profits and dividends for the owners. Further, the inverse relationship between board ownership and P/B was inverse implying that banks whose directors owned a relatively larger ratio of the bank's shares may send a signal of directors who may be less objective in monitoring and oversight work of management. The demand for the shares of such banks may therefore be low relative to book value hence the inverse relationship between board ownership and P/B. Finally, the analysis revealed a direct effect of bank size on ROA and ROE. Further, the effect of bank size on P/B was inverse. The research concluded that banks that had more assets performed better than their counterparts with relatively fewer assets. A leading asset component of banks is loans and advances that earn interest income to the bank. Therefore, banks with more assets also performed better in terms of profitability. Further, the causal effect link between bank size and P/B was inverse implying that banks with larger asset sizes may also send a signal of over-trading and aggressive loaning to the market hence a perception of extreme risk-taking. The market may respond via low demand for such shares hence the low market price of shares relative to book value and hence the inverse link between bank size and P/B.

7. Recommendations

The study established a direct effect of board size on ROA and ROE and an inverse effect of board size on P/B. The study suggests that shareholders and directors of listed commercial banks have smaller board sizes to increase the number of directors on their boards. Banks that had larger boards tended to have adequate and experienced members in the committees which are critical to the functioning of the board in monitoring the work of the management. Thus, banks having larger boards were able to ensure adequate monitoring and oversight of banks operations hence increased profitability. The CMA and CBK should ensure that the listed commercial banks that are operating under their regulations have the right number of directors on their board to protect their long-term financial performance. The study findings revealed an inverse effect of board gender diversity on financial performance (ROA, ROE and P/B. The study thus recommended that shareholders and directors of listed commercial banks ensure that they have the right gender diversity on their boards. Having more female directors relative to males on the boards of listed commercial banks resulted in reduced portability. The reduced profitability could be due to female directors being more risk averse compared to male counterparts hence not pushing for relatively risky projects that may earn more revenues to the firm. Further, having more female directors sent a signal to conservative banks that may not readily

adopt more risky investment opportunities hence negatively impacting on market price of shares. The CBK and CMA should also ensure that listed commercial banks have optimal gender-diverse boards that ensure long-term profitability and good corporate governance. The study also showed that the effect of board independence on the financial performance (ROA, ROE and P/B) of listed commercial banks in Kenya was direct and major. The study thus suggests that shareholders and directors of listed commercial banks have more independent and non-executive directors on their boards. The independent non-executive directors ensure objective deliberation on matters discussed on boards since they have minimal or no interest in the internal affairs of the banks. Independent directors ensure that the work of board committees in monitoring and oversight of the management team is above board. Therefore, banks having more independent non-executive directors contributes to improved profitability. The study also recommends that CMA and CBK ensure that listed commercial banks in Kenya practice good CG by having more independent boards. The study also established that the effect of board experience on financial performance (ROA, ROE and P/B) was direct. The study thus suggests that shareholders and directors of listed commercial banks allow their executive directors especially the CEO to serve more time on the boards. More experienced directors on the boards understand the operations of a bank hence they can provide effective monitoring and oversight of the work of the management team hence improved profitability. Further, boards with more experienced executive directors sent a signal of bank stability hence an increase in market price per share relative to book value. The study also recommends that CMA and CBK ensure that listed commercial banks have directors whose terms of service are protected to ensure that the banks have adequate experience for oversight and monitoring.

The analysis revealed a direct causal effect link between board ownership and financial performance measured by ROA and ROE. However, the effect of board ownership on P/B was inverse. The research recommends that shareholders and directors of listed commercial banks in Kenya encourage directors especially the executive directors to acquire shares of the banks. They can buy shares directly at the NSE or benefit through employee stock ownership plans. Board ownership made the directors and management part of the bank ownership hence such banks had their boards and management taking up calculated risks to ensure improved profitability. The study also suggests that CMA and CBK encourage executive directors to acquire shares of the companies they manage to ensure they practice better stewardship over the running of the banks for the benefit of shareholders and depositors. Finally, the study showed a direct effect of bank size on ROA and ROE. Further, the effect of bank size on P/B was inverse. The study recommends that shareholders and directors of listed commercial banks be well-capitalised to ensure they have adequate assets to enable them to exploit emerging investment opportunities. A leading asset component of banks is loans and advances that earn interest income to the bank. Therefore, banks with more assets also performed better in terms of profitability. Further, the study recommends that CMA and CBK ensure that banks do not practice over-trading through aggressive loaning that exposes them to extreme credit risk.

Based on the limitation identified in the preceding sub-section, the study makes several recommendations for future researchers. First, the study was limited to listed commercial banks hence limited application to listed commercial banks in Kenya. The study thus recommends that future studies be replicated in non-listed commercial banks as well as non-banking firms to examine if the findings hold in various contexts. Further, such a study would generate parameter estimates that have improved application in various contexts including the banking and non-banking industry. Secondly, this study was limited to five corporate governance variables including board gender diversity, board independence, board experience, board ownership and board size. The study thus suggests to future researchers to exhaustively cover aspects of CG. Omitted aspects of CG such as board meeting frequency, board committees, external auditing and market for company control among others should be included in the estimation model. Thus, such an endeavour would produce parameter estimates for decision-making among listed commercial banks. Thirdly, this study was based on secondary data alone. Secondary data may not capture all aspects of CG. CG has qualitative aspects that may need primary data collection tools such as interviews and document analysis. The study thus suggests that future researchers adopt both quantitative and qualitative data to generate findings that are of more value to decision-making by the management of listed commercial banks.

Conflicts of Interest

"The authors declare no conflicts of interest."

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