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Bank-specific and Macroeconomic Determinants of Commercial Banks Profitability in Kenya

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

This study focuses and examines the impact of bank-specific factors and macroeconomic determinants on the financial performance of commercial banks listed on the Nairobi Securities Exchange (NSE) during the period spanning from 2011 to 2020. The research is anchored on transaction cost economic theory with financial panel data methodology. In the pursuit of study objective, the study employed pooled ordinary least squares (OLS) estimation method combined with fixed effect model to account for individual-specific characteristics that may not be directly observable but are likely to impact the dependent variable. The research findings reveal that bank assets, bank capital and debt ratio have a positive impact on bank profitability while bank concentration has a negative effect. Notably, inflation rate, lending rate and tax rate were insignificant in relation to rate of return on equity among the selected banks in NSE. The study recommends that banks should prioritize efficient capital allocation and diversify their business lines

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and offerings. Therefore, banks should give thought to the implementation of strategic asset management as a means to optimize their asset allocation, as it can contribute to increased profitability through diversification and efficient asset utilization.

Keywords: Bank-specific; macroeconomic; commercial bank; profitability; Kenyan banking sector.

JEL classification: C32; G21; G32

1. INTRODUCTION

Commercial banks and the banking industry in general play a critical role in economic development of nations in the world over. Nyasha and Odhiambo [1] contend that banks not only mobilize resources aimed at productive investments, but also act as conduits through which implementation of monetary policy is undertaken. Meanwhile, Song et al*.* [2] perceive commercial banks as financial establishments whose functions include accepting deposits, and offering credit to promote investment and profit making. According to Romao et al*.* [3] commercial banks as financial establishments, avail investment products such as current and savings accounts and other services to individuals and businesses. Jha [4], on the other hand points out that commercial banks turn individual's idle savings into investment; and use bills of exchange acceptance and discounting to promote within and external trade among nations [5].

For banks to continue impacting on economic development positively, they require financial stability that accrues from enhanced financial performance. Nurdiansari et al*.* [6] perceive performance as the achievement of implementation of programs and policies put in place, in the process of realizing an organizations goals, objectives, mission and vision. Fahmi and Saputra [7] had hitherto, defined financial performance as an analysis aimed at determining the extent to which financial implementation rules are properly and correctly executed within the company. O'Connell [8] and Fatihudin [9] identifies capital adequacy, solvency, liquidity, leverage, efficiency and profitability as measures of financial performance. According to Fatihudin [9], financial performance relates to a company's realization of financial obligations in terms of allocation and collection of finance for a given period.

Several factors have been associated with financial performance of commercial banks in existing literature. Dao [10] for instance, argue that bank specific characteristics have a statistically significant impact on banks market power. In India, raising non-performing assets has been identified as a major challenge to the performance of banking sector (Bharway & Chandhary, 2018). Industry specific and macroeconomic factors on the one hand, and bank specific factors on the other, have also been identified as factors which impact banks financial performance in the European union context [11]. Bank specific factors such as debt ratio, capital availability, competition, cash and investment to total deposits, liquidity quick ratio, and profit margin; and macroeconomic factors like inflation rate, tax rate, growth rate in gross domestic product and unemployment rate as a percentage of total labour, have been associated with banks financial performance in Jordan [11,12].

Despite the resilience across the banks, the Kenya Bankers Association [13] report noted that the commercial banks in Kenya were experiencing increased non - performing loans (NPLs) affecting profitability. The ratio of gross NPLs to gross loans deteriorated from 12.0 percent to 13.1 percent in June 2020. Of concern to the researcher however, is that the deterioration in bank's asset quality appeared to vary across banks owing to bank specific factors like management's attitude to risk, business models, and liquidity. If commercial banks in Kenya have to maintain financial stability, then more knowledge should be gained regarding bank specific factors, macroeconomic factors, that determine financial performance of commercial banks listed in Nairobi Securities Exchange.

2. LITERATURE REVIEW

The cost management efficiency theory postulates that choice of financial management strategies should take cognizance of the fact that not all of them fit equally well in all businesses [14]. The essence of this theory in the context of commercial banks is that they are not subjected to conventional financial management standards.

Effective cost management is therefore a central tenet in measuring accountability in businesses, and involves implementing strategies effectively, and requires provision of needed resources to maximize productivity and profitability at minimum cost [15].

The second theory that will underpin this study is the transaction cost economic theory. This theory is often associated with Williamson, the theory gives a prediction when transactions are likely to occur in organizations or market, and also when new organizations are likely to come on board [16]. The transaction cost economic theory was used to anchor the macroeconomic variables. The study postulates that internal transaction costs that may arise from activities such as bargaining and decision making, policing and enforcement, and searching for information among others, are likely to inform decisions to internalize such activities or not. Williamson argues that through the transaction cost theory, governance of forms of hybrids, markets, or hierarchies can be predicted [16]. Consequently, activities ought to be internalized depending on the transaction costs that they attract.

The final theory that is employed in this study is the inverted –U curve theory. This theory will be used to underpin bank's external factors. This theory was proposed in 1908 by Robert Yerkes and John Dodson who were psychologists (Lu et al., 2015). The inverted U-curve theory relates pressure and performance, and postulates that the correlation between pressure and performance is U-shaped such that, low pressure leads to boredom, moderate pressure elicits best performance while high pressure is a source of high stress, anxiety and unhappiness (Ma et al., 2017).

Choice of the inverted U-curve theory to anchor banks external factors is based on evidence which has highlighted a curvilinear relationship between banks external pressure and profitability [17], (Ramanathan, 2018; Maqbool & Bakr, 2019). Through this evidence, it has been shown that as pressure posed by external factors increases, profitability first increases then levels off overtime, and finally starts to reduce as the pressure grows extremely large. This therefore confirms that financial performance in banks as a function of banks external factors could be explained by the inverted U-curve relationship.

Scholars have explored an array of factors that are associated with bank performance. Through content analysis for instance, corporate social responsibility has been shown to be a positive and significant predictor of customer loyalty in the Kenya Commercial bank Eldoret branch [18]. Evidence also shows that financial innovations have a positive and significant effect on the growth of commercial banks in Eldoret town [19]. Other studies exploring commercial banks in Eldoret have looked at among others; interest loan volatility and repayment of loans (Koech & Maina, 2020); risk reduction strategies and minimization of fraud (Ogoro, 2014); ability of financial appraisals to mediate the relationship between banks sustainable performance and employee engagement [20,21] and the effect of customer service and bank performance [22].

3 METHODS

3.1 Data Types and Sources

In this investigation, a quantitative research design was employed. This design was selected because it involves the collection of quantitative data on the same variable over an extended duration. Given that the study revolves around a panel dataset spanning ten years, from 2011 to 2020 on nexus between bank specific factors, macroeconomic drivers and financial performance of 9 commercial banks listed in Nairobi Securities Exchange (NSE), Kenya, the quantitative research design was deemed particularly suitable, allowing for a comprehensive analysis of trends and changes over time.

This study used data sourced from annual financial statements of commercial banks listed in Nairobi Securities Exchange, Kenya. Secondary data relates to data that were collected through primary sources, but are readily available for use in other related sources [23]. For this study, financial statements which will have been prepared ostensibly to show the position of the banks in various financial ratios that define financial performance and profitability was the source of secondary data. Financial statements for the period 2011 to 2020 is therefore examined to collect data for the three vectors of independent variables and for the bank's financial performance. Content analysis that is a checklist of the variable under study was prepared. Secondary data research

Table 1. Variable measurement

Vector	Variables	Computation	Source	Expected sign
Bank specific factors	Tax rate Proxy Effective tax rate (EFFR)	EFFR = Total Tax ÷ Earnings Before Taxes	Christensen et al. (2021)	+/-
	Bank Size (BSIZE)	Total bank assets	(Kamande (2017)	
	Debt ratio (DBTR)	Total liabilities / Total assets	Nuryani & Surnasi (2020)	+/-
	Capital (CAP)	Total assets-liabilities	Kharatyan et al. (2016)	+
Macroeconomic factors	Bank Concentration/Market structure (CONC)	Herfindahl-Hirschman index	Jaouad & Lahsen (2018)	+/-
	Inflation (INFL)	Consumer Price Index	Novaes (1993)	+/-
	Lending interest Rate (LENR)	Bank Lending Rate	O'Connell (2023)	+
Profitability	Return on Equity (ROE)	Net Profit / ½ (Beginning equity + Ending equity)	Kharatyan et al. (2016)	Not defined

Source: Own Computation (2024)

focuses on identification of appropriate data sets. The study variables were measured by computing relevant ratios. Majority of prior profitability studies commonly used two main proxies to measure profitability which are ROA (Return on assert) and ROE (Return on Equity) [24]. However, this study uses ROE as proxy for banks' profitability. ROE is measured as the percentage of a year's net profit to the total equity of the same year. Table 1 gives a summary of variable measurement.

3.2 Model Specification

The Hausman test, introduced by Jerry Hausman in 1978, is a statistical test used in econometrics to compare two different estimators for model parameters. It assesses whether the Ordinary Least Squares (OLS) estimator, which assumes no endogeneity, is more efficient and consistent than the Instrumental Variables (IV) estimator, which corrects for endogeneity. The test's null hypothesis is that both estimators are consistent, while the alternative hypothesis suggests that one of them is inconsistent. The Hausman test will be run to decide on whether to use the fixed effects or the random effects model (Sheytanova, 2015).

In the event that the Hausman test suggests the fixed effects model, then the model shown in equation 1 will be employed.

$$ROE_{it}=\alpha_i+\beta_1 C_{it}+\sum_{k=1}^{n}\beta_k X_{it}+\varepsilon_{it} \quad (1)$$

Where ROEit is the return on equity for bank i year t

C_{it} is the control variable for bank i year t where control relates to intervening variable
X_{it} is the vector of explanatory variables representing each of the three independent variables, for bank i year t
ε_{it} is the within bank error term
α_i (i=1….n) is the unknown intercept for each bank
β_k (k=1, 2,..,n) are the coefficients for the control variable and respective determinants under each independent variable.
However, if the preferred model as per the Hausman test will be random effects model, then the model specified in equation 2 will be employed.

$$ROE_{it}=\alpha+\beta_1 C_{it}+\sum_{k=1}^{n}\beta_k X_{it}+U_{it}+\varepsilon_{it} \quad (2)$$

Where the explanations are as in equation 1, but U_{it} is the between bank error term

3.3 Pre-estimation Test

Stationarity in panel data relates to means and standards deviations remaining constant over a given time interval. For panel data stationarity

allows for forecasting to be done, paving way for estimation of future occurrences (Lau et al., 2019). It has previously been demonstrated that stationarity only occurs when there is no unit root in the data (Adewuyi et al., 2020). Unit root will therefore be used to test for stationarity in the panel data relating to commercial banks under study. Unit roots was tested using Levin–Lin–Chu and Im-Pesaran-Shin tests. Under the Levin-Lin-Chu approach, it is hypothesized that panels have unit root, and therefore a significant t-statistic tested at the 5% level of significance will imply lack of unit root. In addition, Hausman test will be performed to decide on whether to use the fixed effects or the random effects regression analysis.

3.4 Data Analysis

Data analysis focused on testing the formulated hypotheses. Regression models was used to establish the effects of bank characteristics, macroeconomic factors, on bank financial performance measured through return on equity (ROE). The pooled ordinary least squares (OLS) model was not considered for this study since, it has been noted that it is employed when different samples are selected for each period [25]. The study therefore employed the fixed effects model as determined by Hausman test results. Choice of fixed or random effects model was based on assertions by Wooldridge [25], that the fixed effects / random effects models are suitable the same sample of individuals when observed over time. Indeed, for this study, the same sample of 9 commercial banks listed in Nairobi Securities Exchange (NSE) were be under observation for the period between 2011 and 2020.

3.5 Post-estimation Tests

A series of diagnostic tests were conducted in order to ensure that models used will be econometrically sound (Baloch et al., 2019). The following post-regression diagnostic tests were performed: normality using the Jarque-Bera test, serial correlation using the Durbin-Watson d-statistic, multicollinearity test using Variance Inflation Factor (VIF) and heteroscedasticity using the White test. This is to eliminate the possibilities of spurious findings.

4. RESULTS AND DISCUSSION

4.1 Stationarity Results

Utilizing a unit root test in panel data analysis substantially enhances the test's robustness, according to the findings of Burdisso and Sangiácomo [26]. If the data is non-stationary, it is differenced until it becomes stationary. Consequently, this research employed and estimated the Levin-Lin-Chu unit root test, to ensure consistency and robustness in the analysis [27].

From the results of Levin Lin Chu test presented in Table 2 total assets, bank capital, tax, bank concentration, inflation and lending rate were stationary at levels. This is because their t-statistic and p-values were significant at 5 percent critical value (P-Value less than 0.05). Rate of return on equity, lending interest rate and the debt ratio were non stationary at level (p value>0.05). The null hypothesis is that the panel has unit root. When the probabilities are less than 0.05 critical value, this hypothesis is rejected. It is evident that all the panels achieved stationarity after undergoing the first differencing process.

4.2 Model Selection Using Hausman Test

In panel regression analysis, fixed effects (FE) and random effects (RE) models are employed. The selection between these models can be determined through the application of the Hausman test.

Table 2. Levin-Lin-Chu Unit Root Test

	Level		First Difference		
Variables	**Statistic**	**p-value**	**Statistic**	**p-value**	**Remark**
ROE	2.767	0.9972	-4.740	0.0000	I (1)
BSIZE	-4.650	0.0000	-	-	I (0)
CAP	5.997	0.0000	-	-	I (0)
EFFR	-2.804	0.0025	-	-	I (0)
CONC	-2.541	0.0055	-	-	I (0)
INFL	-7.850	0.0000	-	-	I (0)
LENR	2.925	0.9983	-4.225	0.0000	I (1)
DBTR	-1.167	0.1214	-7.227	0.0000	I (1)

Source: Field Data (2024)

Table 3. Hausman Test Results

	Coefficients			
Variables	**(b)**	**(B)**	**(b-B)**	**Sqrt (diag (V_b-V_B)**
	Fe	**Re**	**Difference**	**S. E**
TOTA	.0638	.040	.022	.012
CAP	7.737	7.163	.574	.044
EFFR	-.0109	-.038	.027	.006
CONC	-.001	-.000	-.000	..
INFL	.002	.000	.002	.
LENR	-.002	-.003	.000	.
DBTR	.058	.032	.026	.005

b = consistent under H_0 and H_a; obtained from panel regression
B = inconsistent under Ha, efficient under H_0; obtained from panel regression
Fe= Fixed Effects.
Re= Random Effects
Test: H0: difference in coefficients not systematic
Chi2(4) = (b-B)'[V_b-V_B)^(-1)](b-B)
= 35.08
Prob>Chi2= 0.0000

Source: Field Data (2024).

Table 4. Regression Results

Fixed effects regression	Number of observations = 87			
Group variable: Year	Number of Groups: 9			
R-sq within = 0.9336	Observations per group:		Minimum	= 8
Between = 0.0174			Average	= 9.7
Overall = 0.5162			Maximum	= 9
	F(7,71)		= 142.55	
Corr = -0.6910	Prob > F		= 0.0000	
Variable	**Coefficient**	**Std. Error**	**T**	**P > |z|**
BSIZE	0.063	0.013	4.72	0.000
CAP	7.737	0.281	27.49	0.000
TAXR	-0.010	0.008	-1.25	0.216
CONC	-0.001	0.000	-2.57	0.012
INFL	0.002	0.002	1.42	0.159
LENR	-0.002	0.002	-0.98	0.330
DBTR	0.058	0.010	5.69	0.000
CONS	0.726	0.283	-3.54	0.001
Sigma_*u*	.1486			
Sigma_*e*	.038			
Rho	.937	(fraction of variance due to *u_i*)		

Source: Field Data (2024).

The results presented in Table 3 are for Hausman test. The coefficients in first column are from fixed effects estimation and in the second columns are from random effect model. Hausman test measures the null hypothesis that there are non-systematic differences in coefficients (random effects are suitable) against the alternative that there are systematic differences in coefficients (Fixed effects are appropriate). The results showed that value for chi-square statistic is 35.08 and its probability is .0000<.05. The null hypothesis was rejected and confirmed that the estimates from the fixed effects regression model were appropriate.

4.3 Fixed Effects Model Estimation

Fixed effects models are consistent and efficient when the assumption of correlated individual-specific effects with the explanatory variables is met. These models tackle unobserved heterogeneity at the individual level by introducing dummy variables for each entity or individual, and they are estimated using methods

such as the within transformation or the Least Squares Dummy Variable (LSDV) approach.

The fixed effect model results showed a positive and statistically significant relation between bank assets size and profitability. Therefore, this hypothesis was rejected. The size of a bank's total assets appears to have a noteworthy impact on its rate of return on equity. The positive and statistically significant relationship between total assets and the rate of return on equity (ROE) among the selected banks in the NSE can be attributed to a combination of factors. Banks with larger asset bases often benefit from economies of scale, diversification, and improved access to capital, enhanced risk management capabilities, and a stronger market reputation, which collectively contribute to higher ROE. This finding aligns with the notion that bank size plays a pivotal role in influencing financial performance, as a larger asset base provides a competitive advantage in the financial sector [28,8]. The study was in line with Mkandawire [29] and Kamande [30] who assessed the determinants of bank performance in Malawi.

The results of the study found a positive and significant relation between bank capital and the rate of return on equity among the selected banks in NSE. This implied that the null hypothesis was rejected at the conventional 5 percent significance level. This outcome can be explained by the risk-mitigating role of adequate capital, which bolsters investor confidence and facilitates higher lending capacity, thereby increasing interest income and competitiveness [31]. This study aligns with the findings of Saleh and Abu Afifa [32] who, explored the influence of credit risk, liquidity risk, and bank capital on bank profitability on an emerging market spanning from 2010 to 2018.

Results indicated a negative insignificant relation between tax rate and profitability. This implied that the null hypothesis failed to be rejected at 5 percent significance level. This could be due to various reasons, such as effective tax management strategies or the nuances of the tax regime like deductions, credits, exemptions within the selected banks. The findings of this study ran counter to those of Doménech et al. [33] who established the macroeconomic implications of taxes via raising the costs of financial intermediation.

Objective four results implied that the null hypothesis was rejected at 5 percent significance level. It implies that as bank concentration or market share increases by one unit, there is a corresponding decrease in the rate of return on equity (ROE) by 0.001 units. This suggests that a higher concentration or market share within the selected banks is associated with a reduction in their ROE. This finding indicates that, in this context, a more concentrated market may have a detrimental effect on the profitability of these banks. The negative relationship between bank concentration or market share and the rate of return on equity (ROE) can be attributed to several factors. A higher market concentration may lead to reduced competition, which can result in banks having more pricing power and less incentive to offer competitive interest rates to depositors and borrowers. This, in turn, can lower the profitability of banks as they may not need to strive for higher returns to attract customers in a less competitive environment. Additionally, regulatory authorities may scrutinize and regulate highly concentrated markets more closely, which could affect the operational flexibility and efficiency of banks, further impacting their ROE [24]. This study deviates from Wernerfelt [34] research in Ghana, which explored the impact of market share and bank performance.

The positive yet statistically insignificant relationship between inflation and the rate of return on equity among the selected banks in the NSE may be attributed to several factors. First, it's possible that the impact of inflation on banks' profitability exhibits time lags, meaning that its effects may not be immediately reflected in their equity returns. Second, these banks could have implemented effective inflation control measures, such as hedging strategies or cost-cutting measures, to mitigate the negative consequences of inflation on their financial performance. The government and central bank policies aimed at stabilizing inflation rates might have played a role in reducing inflation's impact on these banks, further contributing to the observed insubstantial link between inflation and the rate of return on equity [35].

The observed negative but statistically insignificant relationship between lending rates and the rate of return on equity among the selected banks in the NSE suggests that factors beyond lending rates are likely at play. Potential time lags and regulatory influences could account for this situation [36].

The results of the study found a positive and significant relation between debt ratio and the

rate of return on equity among the selected banks in NSE. This implied that the null hypothesis was rejected at the conventional 5 percent significance level. This means that a higher bank debt ratio is associated with higher returns on equity. Possible explanations for this result could include the fact that taking on additional debt might allow banks to leverage their investments, potentially leading to increased profits if well managed and utilized. The noted statistically significant inverse association between the debt-to-equity ratio and financial performance aligns with the drift concept proposed by the dynamic tradeoff theory. It is also in accordance with the assertion of the pecking order theory in capital markets, particularly in cases where there is asymmetry in firm information, as discussed by Myers and Majluf (1984). A comparable discovery was made by (Omollo et al. [37] and Salamba (2015), supporting the consistency of these findings in the existing literature [38].

The overall R- square was 0.5162, confirm the goodness of fit of model. The study performed the following post regression diagnostic tests; normality test using Jarque-Bera test, serial correlation using Durbin-Watson d-statistic and heteroscedasticity test by Breusch-Pagan-Godfrey. This is to eliminate the possibilities of spurious results. Based on Table 4, the Jarque-Bera test indicate that the residuals are normally distributed; since the p-value is smaller than the Chi (2) value, we fail to reject the null hypothesis. Table 4 displays the results of a multicollinearity test, where the Variance Inflation Factor (VIF) is employed to assess the degree of collinearity among independent variables in the analysis [39]. The average VIF value observed was 4.10, which is notably lower than the predefined threshold of 10. This outcome suggests the absence of significant multicollinearity in the data, signifying that the independent variables in the analysis do not exhibit strong correlation issues. Homoscedasticity null hypothesis is accepted if the chi-square test statistic's corresponding p value is greater than the 5% level of significance and rejected if it is lower than that mark. Table 4 shows the outcomes of White test which demonstrate that the residuals of the model are homoscedastic. The residuals' serial correlation was investigated using the Breusch and Pagan Lagrangian multiplier test. The results in Table 4 indicated a – value was 0.7203> 0.05 at 95% confidence interval therefore the null hypothesis of no serial autocorrelation was accepted [40,41].

5. CONCLUSION

The purpose of the study is to investigate the relationship between bank specific factors, macroeconomic drivers and profitability of nine commercial banks listed in Nairobi Securities Exchange, Kenya. The study is anchored on transaction cost economic theory with panel secondary data spanning from the period 2011-2020. Data was analyzed using pooled ordinary least squares (OLS) combined with fixed effect model to generate the necessary descriptive and inferential estimates. Based on the panel fixed model regression results increase in total assets, bank capital and debt ratio increase bank profitability while increase in market concentration hurt firms' performance in relation to its equity Finally, inflation rate, lending rate and tax rate were insignificant in relation to rate of return on equity among the selected banks in NSE.

The study's findings led to the following recommendations: Banks should give thought to the implementation of strategic asset management as a means to optimize their asset allocation, as it can contribute to increased profitability through diversification and efficient asset utilization. As banks witness asset expansion, it is imperative that they place a strong emphasis on robust risk management practices to uphold the quality of their assets. The effective assessment and management of risks are pivotal in protecting against potential losses and collapse.

In light of the study's banks should focus on optimizing their capital allocation strategies to ensure that capital is efficiently used to generate higher returns on equity. This may involve reallocating capital to more profitable areas of their business or seeking opportunities for growth that can enhance the return on equity. They should encourage ongoing research and analysis within the bank to identify opportunities for investment like new technology to improve capital-to-equity ratio, which can, in turn, boost profitability.

Given the study's findings that a negative relationship exists between bank concentration (market share) and the rate of return on equity (ROE), the study recommended that banks should diversify their business lines and offerings. Explore opportunities in areas such as wealth management, asset management and insurance. Banks should develop a competitive

strategy that takes into account the negative impact of high bank concentration on ROE. This strategy may involve focusing on niche markets or segments, where competition is lower, and the bank can maintain a competitive edge like Green Banking.

Finally on bank debt ratio government bodies should have counter-cyclical policies in place to mitigate the risks associated with increased leverage during economic downturns. For example, automatic stabilizers that are built-in features of fiscal policy that automatically respond to economic conditions like the progressive income taxes. This can help maintain the stability of the financial sector and prevent systemic crises. Banks should focus on optimizing their debt management strategies to strike a balance between capital structure and profitability. This may involve using debt for growth and expansion where it can generate higher returns on equity, but doing so prudently to avoid excessive leverage.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Nyasha S, Odhiambo NM. Do banks and stock markets spur economic growth? Kenya's experience. International Journal of Sustainable Economy. 2015;7(1); 54-65.
2. Song H, Yu K, Lu Q. Financial service providers and banks' role in helping SMEs to access finance. International Journal of Physical Distribution & Logistics Management. 2018;48(1):69-92.
3. Romao M, Costa J, Costa CJ. Robotic process automation: A case study in the banking industry. Paper presented at the 2019 14th Iberian Conference on information systems and technologies (CISTI); 2019.
4. Jha S. Performance appraisal of commercial banks and linkage financial indicators with economic growth in Nepal; 2018.
5. Mabwa C. Foreign capital inflows and the real exchange rate in Kenya. African Journal of Economics and Sustainable Development. 2024;7(4):129-141.
6. Nurdiansari R, Susilawati E, Sriwahyuni A, Paulina E. Analysis of financial performance before and during the covid-19 pandemic era at PT. Bank Rakyat Indonesia (BRI) TBK. Nusantara Science and Technology Proceedings. 2021;129-137.
7. Fahmi I, Saputra M. Analysis of financial performance in a form of financial ratio before and after right issue at the indonesia's stock exchange (bursa efek indonesia). International Journal of Business and Social Science. 2011;2(24).
8. O'Connell M. Bank-specific, industry-specific and macroeconomic determinants of bank profitability: evidence from the UK. Studies in Economics and Finance. 2023;40(1):155-174.
9. Fatihudin D. How measuring financial performance. International Journal of Civil Engineering and Technology (IJCIET). 2018;9(6):553-557.
10. Dao B. Determinants of profitability in commercial banks in Vietnam, Malaysia and Thailand. Journal of Asian Finance, Economics and Business. 2020;7(4):133-143.
11. Petria N, Capraru B, Ihnatov I. Determinants of banks' profitability: evidence from EU 27 banking systems. Procedia economics and finance. 2015;20:518-524.
12. Gisore N. Factors affecting growth of SBE. African Journal of Economics and Sustainable Development. 2020;3(3):80-87
13. Association KB. Kenya bankers association annual report and financial statements 2021: Kenya Bankers Association; 2022.
14. Ochande, G. B. (2019). Cost structure and Financial Performance Of Commercial Banks Listed at Nairobi Stock Exchange. University of Nairobi.
15. Gichuki CW. Effect of cost management strategies on the financial performance of manufacturing companies listed on the Nairobi securities exchange. University of Nairobi; 2014.
16. Williamson OE. Interdisciplinary social science: The transaction cost economics project Economics for the Curious: Inside

the Minds of 12 Nobel Laureates. 2014;123-140. Springer.
17. Argilés-Bosch JM, Garcia-Blandón J, Ravenda D, Martínez-Blasco M. An empirical analysis of the curvilinear relationship between slack and firm performance. Journal of Management Control. 2018;29:361-397.
18. Barasa WA. Influence of corporate social responsibility on customer loyalty in Kenya commercial bank limited Eldoret town, Kenya. University of Nairobi; 2016.
19. Kiprop V, Ayuma C, Bokongo J. Effect of Financial Innovation on the Growth of Commercial Banks in Eldoret Town, Uasin Gishu County. Journal of Business and Management. 2016;18(9),99-109
20. Apiyo W. Mediating role of performance appraisal on the relationship between employee engagement strategy and sustainable firm performance of commercial banks in Eldoret. University of Eldoret; 2019.
21. Wendy EA. Mediating role of performance appraisal on the relationship tablbetween employee engagement strategy and sustainable firm performance of commercial banks; 2019.
22. William NC, Njuguna J. Customer Service Strategies and Bank Performance in Kenya. A Survey of Selected Commercial Banks in Eldoret Town, Uasin Gishu County Kenya. Journal of Strategic Management. 2023;3(2):1-14.
23. Allen M. The SAGE encyclopedia of communication research methods: SAGE publications; 2017.
24. Almarzoqi R, Naceur MSB, Scopelliti A. How does bank competition affect solvency, liquidity and credit risk? Evidence from the MENA countries: International Monetary Fund; 2015.
25. Wooldridge JM. Correlated random effects models with unbalanced panels. Journal of Econometrics. 2010;211(1):137-150.
26. Burdisso T, Sangiácomo M. Panel time series: Review of the methodological evolution. The Stata Journal. 2016;16(2): 424-442.
27. Greene WH. Econometric analysis: Pearson Education India; 2003.
28. Berger AN, Mester LJ. Explaining the dramatic changes in performance of US banks: technological change, deregulation, and dynamic changes in competition. Journal of Financial Intermediation. 2003; 12(1):57-95.
29. Mkandawire P. An analysis of the determinants of bank performance in Malawi: A case of listed commercial bank; 2016.
30. Kamande EG. The effect of bank specific factors on financial performance of commercial banks in Kenya; 2017.
31. Bhattacharya A, Good V, Sardashti H, Peloza J. Beyond warm glow: The risk-mitigating effect of corporate social responsibility (CSR). Journal of Business Ethics. 2021;171:317-336.
32. Saleh I, Abu Afifa M. The effect of credit risk, liquidity risk and bank capital on bank profitability: Evidence from an emerging market. Cogent Economics & Finance. 2020;8(1):1814509.
33. Doménech R, Boscá Mares JE, Ferri J, Rubio Ramírez J. Macroeconomic Effects of Taxes on Banking; 2023.
Available at SSRN 4415390.
34. Wernerfelt B. The relation between market share and profitability. Journal of Business Strategy. 1986;6(4):67-74.
35. Mishra P, Montiel P. How effective is monetary transmission in low-income countries? A survey of the empirical evidence. Economic Systems. 2013;37(2): 187-216.
36. Omondi MM, Muturi W. Factors affecting the financial performance of listed companies at the Nairobi Securities Exchange in Kenya. Research Journal of Finance and Accounting. 2013;4(15):99-104.
37. Omollo BA, Muturi WM, Wanjare J. Effect of debt financing options on financial performance of firms listed at the Nairobi Securities Exchange, Kenya. Research Journal of Finance and Accounting. 2018;9(10):150-164.
38. Kharatyan D, Nunes A, Lopes J. Financial ratios and indicators that determine return on equity. XVII–Encuentro AECA; 2016.
39. Mohamed OA. The role of commercial banks in economic development In Kenya. University of Nairobi; 2020.
40. Novaes AD. Revisiting the inertial inflation hypothesis for Brazil. Journal of Development Economics. 1993;42(1):89-110.

41. Yakubu Z, Loganathan N, Mursitama TN, Mardani A, Khan SAR, Hassan AAG. Financial Liberalisation, Political Stability, and Economic Determinants of Real Economic Growth in Kenya. Energies. 2020;13(13):3426.

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