Bank Specific and Macroeconomic Determinants of Commercial Bank Profitability in Kenya

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ABSTRACT

This study examines the bank specific and macroeconomic determinants of commercial bank profitability in Kenya using a balanced panel of eleven leading banks observed annually over the ten year period from 2014 to 2023, yielding 110 bank year observations. Profitability is proxied by the return on assets, while the explanatory variables comprise bank size, capital adequacy, liquidity, asset quality measured by the non performing loans ratio, operational efficiency measured by the cost to income ratio, the loan to deposit ratio and two macroeconomic controls, namely real gross domestic product growth and inflation. Three competing estimators were applied: pooled ordinary least squares, a one way fixed effects model and a random effects model. Specification testing through the redundant fixed effects F test rejected the pooled specification in favour of a panel structure, while the Hausman test could not reject the orthogonality of the individual effects, indicating that the random effects estimator is both consistent and efficient for these data. The random effects results show that asset quality, operational efficiency and liquidity exert statistically significant negative effects on profitability, whereas bank size and the rate of economic growth exert significant positive effects. Capital adequacy, the loan to deposit ratio and inflation are not statistically significant once unobserved heterogeneity is accounted for. The non performing loans ratio emerges as the single most influential variable, underscoring the centrality of credit risk management to bank earnings in the Kenyan market. The findings carry direct implications for bank managers seeking to protect margins and for the regulator in calibrating prudential expectations.

Keywords: Bank Profitability; Return on Assets; Panel Data; Fixed Effects; Random Effects; Non Performing Loans; Kenya

INTRODUCTION

Background to the Study

The banking sector occupies a position of singular importance in the Kenyan economy. As the dominant component of the financial system, commercial banks mobilise savings, allocate credit to productive enterprise, operate the national payments architecture and transmit the monetary policy decisions of the Central Bank of Kenya into the wider economy. The profitability of these institutions is therefore not merely a private concern of shareholders; it is a matter of systemic interest. A profitable and well capitalised banking sector is better able to absorb shocks, sustain lending through the economic cycle and contribute to financial stability, whereas a sector whose earnings are eroded becomes a potential source of fragility. Understanding what drives bank profitability is consequently of enduring relevance to managers, investors, depositors and regulators alike.

Over the period covered by this study, the Kenyan banking industry navigated a sequence of structural and cyclical pressures. The interest rate capping regime introduced in late 2016 compressed lending margins and altered the composition of bank earnings until its repeal in late 2019. Asset quality deteriorated steadily across the industry as the stock of non performing loans rose, a trend that was sharply aggravated by the economic contraction associated with the COVID 19 pandemic in 2020. At the same time, the larger banks pursued aggressive digital transformation and regional expansion, widening the gap between the most efficient

institutions and their smaller competitors. These developments make the decade an especially informative window through which to study the determinants of profitability.

Within the corporate finance and banking literature, the determinants of bank profitability are conventionally partitioned into two groups. The first comprises **internal**, bank specific factors that lie within the control of management, such as the scale of operations, the adequacy of capital, the quality of the loan book, the level of liquidity held and the efficiency with which costs are managed. The second comprises **external**, macroeconomic and industry factors over which the individual bank has no control, such as the pace of economic growth and the rate of inflation. A satisfactory empirical model of profitability must accommodate both groups simultaneously and panel data techniques are well suited to this task because they exploit variation both across banks and over time.

Statement of the Problem

Although the determinants of bank profitability have been studied extensively in developed markets, the evidence for frontier African markets such as Kenya remains comparatively thin and, where it exists, is frequently based on short samples, single equation cross sections, or estimators that ignore the unobserved heterogeneity inherent in banking data. Banks differ in ways that are difficult to measure directly, including the quality of their management, the strength of their brand and their risk appetite. If these persistent differences are correlated with the observed regressors, estimators that pool the data without controlling for individual effects will yield biased and inconsistent coefficients. Furthermore, the turbulence of the 2014 to 2023 period, encompassing interest rate controls, a pandemic and a credit quality cycle, raises the question of whether the relationships documented in calmer periods continue to hold. This study addresses these gaps by applying a panel data framework, with formal specification testing, to a decade of data on the most important banks in the Kenyan market.

Objectives of the Study

The general objective of the study is to determine the bank specific and macroeconomic factors that influence the profitability of commercial banks in Kenya. The specific objectives are to establish the effect of bank size, capital adequacy, liquidity, asset quality, operational efficiency and the loan to deposit ratio on the return on assets; to establish the effect of real economic growth and inflation on the return on assets; and to identify the appropriate panel data estimator for the relationship through formal specification testing.

Research Hypotheses

The study tests the following null hypotheses, each stated against a two sided alternative and evaluated at the five per cent level of significance:

H01: Bank size has no significant effect on the return on assets.

H02: Capital adequacy has no significant effect on the return on assets.

H03: Liquidity has no significant effect on the return on assets.

H04: Asset quality, proxied by the non performing loans ratio, has no significant effect on the return on assets.

H05: Operational efficiency, proxied by the cost to income ratio, has no significant effect on the return on assets.

H06: Macroeconomic conditions, proxied by economic growth and inflation, have no significant effect on the return on assets.

Significance of the Study

The study is of value to several audiences. For bank executives and boards, it identifies the levers most strongly associated with earnings and therefore informs the prioritisation of management attention and capital. For the Central Bank of Kenya and the National Treasury, it provides evidence on how prudential variables such as capital and asset quality relate to profitability, which is relevant to the calibration of supervisory expectations.

For investors and analysts on the Nairobi Securities Exchange, it clarifies the fundamentals that distinguish more profitable banks from less profitable ones. Finally, for the academic community, it adds methodologically careful, country specific evidence to a literature that remains dominated by developed market studies.

LITERATURE REVIEW

Theoretical Framework

The empirical model estimated in this study is anchored in several complementary theories of bank performance. The **market power** or structure conduct performance hypothesis holds that banks operating in more concentrated markets and larger banks in particular, are able to exercise pricing power and thereby earn higher profits. A closely related strand, the **efficient structure** hypothesis associated with the work of Berger (1995), argues instead that the positive association frequently observed between size or market share and profitability reflects superior efficiency rather than market power: more efficient banks grow larger precisely because they are more efficient and they earn higher profits for the same reason. Both theories predict a positive relationship between size and profitability, but they attribute it to different mechanisms.

The role of capital is illuminated by the **risk return** and **signalling** perspectives. The conventional risk return trade off suggests that more highly capitalised banks, being less leveraged, should earn lower returns on equity. The signalling and bankruptcy cost arguments point in the opposite direction, however, proposing that a strong capital position lowers funding costs, signals quality to the market and reduces the expected costs of financial distress, so that well capitalised banks may in fact be more profitable. The **buffer theory** of capital similarly implies that banks holding capital comfortably above the regulatory minimum are better placed to exploit lending opportunities without breaching prudential constraints.

Asset quality and liquidity are addressed by the **credit risk** and **liquidity preference** literatures respectively. A rising stock of non performing loans erodes profitability directly through higher loan loss provisions and indirectly through the diversion of management effort and the impairment of future lending capacity, predicting a negative relationship with earnings. Liquidity presents a trade off: while holding liquid assets reduces the risk of distress, liquid assets typically yield less than loans, so that excessive liquidity can depress profitability. Finally, the relationship between profitability and the macroeconomic environment is captured by the cyclical view that bank earnings are pro cyclical, rising with economic growth as credit demand strengthens and default rates fall.

Empirical Review

A substantial body of cross country evidence informs the present study. Demirgüç Kunt and Huizinga (1999), in an influential multi country analysis, documented systematic relationships between bank profitability and a range of bank level and macroeconomic variables. Athanasoglou, Brissimis and Delis (2008) developed a dynamic panel framework for Greek banks and found that capital and operational efficiency were important determinants of profitability, while the effect of size was ambiguous. Pasiouras and Kosmidou (2007) examined European banks and reported that both bank specific characteristics and the macroeconomic environment mattered for profitability. For the African context, Flamini, McDonald and Schumacher (2009) studied banks across sub Saharan Africa and found that apart from credit risk, larger bank size and activity diversification were associated with higher returns, alongside a pro cyclical relationship with economic growth.

Kenya specific evidence, although more limited, points broadly in the same direction. Ongore and Kusa (2013) analysed the financial performance of commercial banks in Kenya and concluded that bank specific factors, in particular capital adequacy, asset quality and management efficiency, were the principal drivers of performance, while the influence of macroeconomic variables was comparatively modest. Olweny and Shipho (2011) likewise emphasised the importance of bank specific factors, identifying capital adequacy, asset quality, liquidity and operational cost efficiency as significant determinants of profitability among Kenyan banks. Taken together, the empirical literature suggests a reasonably consistent set of expectations: profitability rises with size, capital and economic growth and falls with deteriorating asset quality, excessive liquidity and operational inefficiency. The

present study tests whether these expectations hold over a recent and unusually eventful decade in the Kenyan market.

Conceptual Framework and Research Gap

Drawing the theoretical and empirical strands together, the study conceptualises the return on assets as a function of two sets of factors. The bank specific set comprises size, capital adequacy, liquidity, asset quality, operational efficiency and the loan to deposit ratio; the macroeconomic set comprises economic growth and inflation. The principal gap addressed by the study is methodological as much as contextual: much of the existing Kenyan evidence relies on estimators that do not formally test for, or control for, the unobserved heterogeneity across banks. By estimating pooled, fixed effects and random effects specifications and selecting between them on the basis of the redundant effects F test and the Hausman test, the study provides a more defensible account of the determinants of profitability than a single equation approach can offer.

DATA AND METHODOLOGY

Research Design and Data

The study adopts an explanatory, quantitative research design built on secondary financial data. The sample comprises eleven of the largest commercial banks operating in Kenya, namely KCB, Equity, the Co operative Bank, NCBA, Absa Bank Kenya, Standard Chartered Kenya, Stanbic, Diamond Trust Bank, I&M, Family Bank and HF Group. These institutions collectively account for the overwhelming majority of banking sector assets and span the range from large tier one banks to smaller listed institutions, providing useful cross sectional variation. Each bank is observed annually over the ten financial years from 2014 to 2023, producing a balanced panel of 110 bank year observations.

The bank level variables are constructed from published annual financial statements and banking sector supervisory disclosures, while the macroeconomic series are drawn from national statistical and central bank sources. A note on the construction of the dataset is provided in the Appendix.

Variable Definitions and Measurement

The dependent variable is the return on assets, defined as profit before tax expressed as a percentage of total assets. The return on assets is preferred to the return on equity as the primary measure of profitability because it is not distorted by differences in leverage across banks and therefore reflects the efficiency with which the institution deploys its entire asset base. The explanatory variables and their expected signs are summarised in Table 1.

Table 1 Variable Definitions, Measurement and Expected Signs

Variable	Symbol	Measurement	Sign
Return on assets	ROA	Profit before tax / total assets (%)	Dep.
Bank size	SIZE	Natural logarithm of total assets	+
Capital adequacy	CAR	Core capital / risk weighted assets (%)	+
Liquidity	LIQ	Liquid assets / total assets (%)	−
Asset quality	NPL	Non performing loans / gross loans (%)	−
Operational efficiency	CIR	Operating costs / operating income (%)	−
Intermediation	LDR	Net loans / customer deposits (%)	+
Economic growth	GDPG	Annual real GDP growth (%)	+
Inflation	INF	Annual average inflation rate (%)	±

Note. Dep. denotes the dependent variable. Expected signs are derived from the theoretical framework set out in Section 2.1.

Model Specification

The general panel regression model relates the return on assets of bank i in year t to the set of bank specific and macroeconomic regressors and is specified as follows:

$$ROA_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 CAR_{it} + \beta_3 LIQ_{it} + \beta_4 NPL_{it} + \beta_5 CIR_{it}$$

$$+ \beta_6 LDR_{it} + \beta_7 GDPG_t + \beta_8 INF_t + \alpha_i + \varepsilon_{it}$$

In this expression β_0 is the common intercept, β_1 through β_8 are the slope coefficients to be estimated, α_i denotes the unobserved, time invariant individual effect specific to bank i and ε_{it} is the idiosyncratic error term. The treatment of α_i distinguishes the three estimators. Under **pooled ordinary least squares** the individual effect is assumed to be zero and the data are treated as a single cross section, which is efficient only if the banks are genuinely homogeneous. Under the **fixed effects** estimator α_i is permitted to be correlated with the regressors and is removed by the within transformation, yielding consistent estimates of the slope coefficients at the cost of being unable to identify time invariant regressors. Under the **random effects** estimator α_i is treated as a random draw uncorrelated with the regressors, which, when valid, yields estimates that are both consistent and efficient.

Estimation Procedure and Diagnostic Tests

Selection among the three estimators follows standard practice. The redundant effects F test compares the pooled and fixed effects specifications; rejection of its null indicates that the individual effects are jointly significant and that the panel structure should be retained. The Hausman test then compares the fixed effects and random effects estimators; its null hypothesis is that the individual effects are uncorrelated with the regressors, in which case the more efficient random effects estimator is preferred. Failure to reject the Hausman null therefore favours random effects, while rejection favours fixed effects. To ensure the validity of inference, several diagnostic tests are conducted. Multicollinearity among the regressors is assessed using variance inflation factors, with values below the conventional threshold of ten and more conservatively five, taken to indicate the absence of a serious problem. Heteroskedasticity in the pooled residuals is examined using the Breusch Pagan test and the normality of the residuals is examined using the Jarque Bera test. As a precaution, all panel models are estimated with standard errors clustered at the bank level and the pooled model with heteroskedasticity robust standard errors, so that inference is valid even in the presence of within bank correlation and non constant error variance.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 2 reports the descriptive statistics for all variables across the 110 bank year observations. The average return on assets over the period was 2.70 per cent, with a standard deviation of 1.02 percentage points and a range running from a low of −0.08 per cent to a high of 4.25 per cent, confirming that the sample contains both highly profitable bank years and a small number of loss making ones. The mean non performing loans ratio of 10.35 per cent, with a maximum of 16.44 per cent, reflects the documented deterioration in asset quality over the decade, while the average cost to income ratio of 56.21 per cent indicates that, on average, banks consumed somewhat more than half of their operating income in operating costs. The mean capital adequacy ratio of 17.99 per cent is comfortably above the regulatory minimum and the macroeconomic series display the expected variation, with real growth averaging 4.75 per cent but dipping to −0.30 per cent in the pandemic year.

Table 2 Descriptive Statistics (110 bank year observations)

Variable	Mean	Std. Dev.	Min	Median	Max
ROA (%)	2.698	1.021	−0.081	2.883	4.247
SIZE (ln assets)	26.429	0.805	24.814	26.491	28.059
CAR (%)	17.990	1.623	14.790	17.755	21.250
LIQ (%)	40.295	6.412	26.630	40.970	52.020

NPL (%)	10.345	3.237	4.520	10.085	16.440
CIR (%)	56.209	5.648	44.550	55.850	71.830
LDR (%)	73.773	8.132	55.550	73.215	88.780
GDPG (%)	4.750	1.951	−0.300	5.250	7.600
INF (%)	6.450	1.093	4.700	6.450	8.000

Note. ROA = return on assets; SIZE = natural log of total assets; CAR = capital adequacy ratio; LIQ = liquidity ratio; NPL = non performing loans ratio; CIR = cost to income ratio; LDR = loan to deposit ratio; GDPG = real GDP growth; INF = inflation.

Correlation Analysis and Multicollinearity

Table 3 presents the Pearson correlation coefficients between the return on assets and the explanatory variables. The signs of the bivariate correlations accord with theoretical expectations. Profitability is positively correlated with bank size (0.517) and with economic growth (0.223) and negatively correlated with the non performing loans ratio (−0.589), the cost to income ratio (−0.348), liquidity (−0.278) and the loan to deposit ratio (−0.240). The strong negative correlation between profitability and the non performing loans ratio is the most striking single relationship in the matrix and foreshadows the regression results. The correlations among the regressors themselves are generally modest, the largest in absolute value being −0.540 between capital adequacy and the loan to deposit ratio, which does not suggest a serious collinearity problem.

Table 3 Pearson Correlation Matrix

	ROA	SIZE	CAR	LIQ	NPL	CIR	LDR	GDPG
ROA	1.000							
SIZE	0.517	1.000						
CAR	−0.096	0.123	1.000					
LIQ	−0.278	−0.110	0.220	1.000				
NPL	−0.589	0.151	0.245	0.212	1.000			
CIR	−0.348	0.118	0.277	0.152	0.096	1.000		
LDR	−0.240	−0.335	−0.540	0.194	−0.092	0.017	1.000	
GDPG	0.223	0.000	0.025	0.012	−0.096	−0.006	0.062	1.000

Note. Inflation is omitted from the displayed matrix for space; its correlation with ROA is 0.035. Coefficients are Pearson product moment correlations.

To assess multicollinearity more formally, variance inflation factors were computed for the full set of regressors, as reported in Table 4. All values lie below two, far short of the conventional warning threshold of ten and the more conservative threshold of five. Multicollinearity is therefore not a material concern and the regression coefficients can be interpreted with confidence.

Table 4 Variance Inflation Factors

Variable	VIF	Variable	VIF
SIZE	1.202	CIR	1.169
CAR	1.948	LDR	1.947
LIQ	1.266	GDPG	1.042
NPL	1.139	INF	1.041

Note. All variance inflation factors are below the conventional thresholds of five and ten, indicating the absence of harmful multicollinearity.

Regression Results

Table 5 reports the estimation results for the three competing models side by side: pooled ordinary least squares,

the fixed effects model and the random effects model. The coefficient estimates are presented with their t statistics in parentheses and statistical significance is indicated by asterisks. The explanatory power of all three specifications is high, with the random effects model accounting for approximately 84 per cent of the overall variation in the return on assets.

Table 5 Panel Regression Results: Dependent Variable is Return on Assets

Variable	Pooled OLS	Fixed Effects	Random Effects
Constant	−12.926***	4.748	−6.796**
	(−7.33)	(0.90)	(−2.12)
SIZE	0.799***	0.072	0.551***
	(11.53)	(0.31)	(4.32)
CAR	0.036	0.090*	0.051
	(1.15)	(1.74)	(1.13)
LIQ	−0.003	−0.034***	−0.025**
	(−0.36)	(−3.21)	(−2.37)
NPL	−0.205***	−0.134***	−0.179***
	(−18.72)	(−5.10)	(−12.94)
CIR	−0.067***	−0.060***	−0.060***
	(−7.44)	(−4.51)	(−6.28)
LDR	−0.007	−0.001	−0.004
	(−0.94)	(−0.09)	(−0.39)
GDPG	0.084***	0.092***	0.087***
	(3.92)	(4.25)	(4.05)
INF	0.000	0.023	0.008
	(0.00)	(0.75)	(0.27)
Observations	110	110	110
R squared (overall)	0.886	0.545	0.838
R squared (within)	0.730	0.774	0.759

Note. t statistics in parentheses. *, ** and *** denote significance at the 10%, 5% and 1% levels respectively. Pooled OLS uses heteroskedasticity robust (HC3) standard errors; the fixed and random effects models use standard errors clustered by bank.

Specification Tests

The choice among the three estimators is resolved by formal testing. The redundant effects F test, which compares the pooled and fixed effects specifications, yields a statistic of 5.391 with a p value below 0.001, decisively rejecting the null that the individual bank effects are jointly zero. The pooled specification is therefore inappropriate and a panel structure that accommodates bank heterogeneity is required. The Hausman test then compares the fixed effects and random effects estimators, producing a chi square statistic of 1.966 on eight degrees of freedom, with a p value of 0.982.

Because this is far above any conventional significance level, the null hypothesis that the individual effects are uncorrelated with the regressors cannot be rejected. The random effects estimator is consequently both consistent and efficient and it is adopted as the preferred model for interpretation. The diagnostic tests support the validity of inference: the Breusch Pagan test returns a statistic of 7.884 with a p value of 0.445, providing no evidence of heteroskedasticity and the Jarque Bera test ($p = 0.504$) does not reject the normality of the residuals.

Table 6 Summary of Specification and Diagnostic Tests

Test	Statistic	p value	Decision
Redundant fixed effects (F)	5.391	0.000	Reject pooled OLS
Hausman (χ^2, df = 8)	1.966	0.982	Random effects preferred

Breusch Pagan	7.884	0.445	No heteroskedasticity
Jarque Bera (normality)	1.370	0.504	Residuals normal

Note. The combination of the F test and Hausman results identifies the random effects model as the appropriate estimator.

DISCUSSION OF FINDINGS

Interpreting the preferred random effects model, the **non performing loans ratio** emerges as the most influential determinant of profitability. Its coefficient of −0.179 is significant at the one per cent level and implies that a one percentage point increase in the ratio of non performing loans is associated with a reduction of approximately 0.18 percentage points in the return on assets, holding other factors constant. Given that the return on assets averages 2.70 per cent, this is an economically large effect and it confirms the centrality of credit risk management to bank earnings in Kenya. The null hypothesis of no effect of asset quality (H04) is firmly rejected. This finding is consistent with the Kenyan evidence of Ongore and Kusa (2013) and with the sub Saharan results of Flamini, McDonald and Schumacher (2009).

Operational efficiency, proxied by the cost to income ratio, is the second clearly significant bank specific driver, carrying a coefficient of −0.060 that is significant at the one per cent level and stable across all three specifications. A one percentage point rise in the cost to income ratio reduces the return on assets by about 0.06 percentage points, so that the null hypothesis H05 is rejected. The robustness of this coefficient across the pooled, fixed and random effects models indicates that cost discipline is rewarded with higher profitability regardless of how unobserved heterogeneity is treated, echoing the emphasis on management efficiency in Athanasoglou, Brissimis and Delis (2008).

Liquidity carries a significant negative coefficient of −0.025 in the preferred model, supporting the view that holding liquid assets, which typically earn lower yields than loans, imposes an opportunity cost on profitability; the null hypothesis H03 is therefore rejected. **Bank size** is positive and highly significant in the random effects model, with a coefficient of 0.551, indicating that larger banks are more profitable and lending support to both the market power and efficient structure interpretations; H01 is rejected. It is instructive that size loses significance in the fixed effects specification, which is to be expected because the within transformation absorbs most of the persistent, scale related differences between banks, leaving little within bank variation in size to identify the coefficient. This contrast illustrates why the choice of estimator matters and why the Hausman endorsed random effects model, which exploits both the within and between dimensions, is the more informative specification here.

Among the macroeconomic variables, **economic growth** is positive and significant at the one per cent level across all three models, with a coefficient of approximately 0.087, confirming the pro cyclical nature of bank earnings: profitability rises when the economy expands, as credit demand strengthens and default rates ease. The portion of H06 relating to growth is therefore rejected. **Inflation**, by contrast, is statistically insignificant, as is the loan to deposit ratio and **capital adequacy** is significant only at the ten per cent level in the fixed effects model and insignificant in the preferred random effects model. The weak result for capital is consistent with the offsetting theoretical predictions discussed in Section 2.1, in which the lower leverage of well capitalised banks works against the signalling and distress cost benefits of holding capital. The null hypothesis H02 cannot be rejected and the remaining portion of H06 relating to inflation cannot be rejected either.

CONCLUSION AND RECOMMENDATIONS

Summary and Conclusion

This study set out to identify the bank specific and macroeconomic determinants of commercial bank profitability in Kenya using a balanced panel of eleven leading banks over the decade from 2014 to 2023. Formal specification testing established that a panel structure is required and that the random effects estimator is the appropriate model for these data. The results show that profitability, measured by the return on assets, is driven principally by asset quality, operational efficiency, liquidity, bank size and the pace of economic growth. Deteriorating asset quality

and rising operating costs depress profitability, excess liquidity imposes an opportunity cost, while larger size and faster economic growth enhance it. Capital adequacy, the loan to deposit ratio and inflation exert no statistically significant influence once unobserved heterogeneity is taken into account. The dominant role of the non performing loans ratio is the study's central conclusion: in the Kenyan banking market of the past decade, the management of credit risk has been the most consequential lever of profitability.

Policy and Managerial Recommendations

Three sets of recommendations follow from the findings. First, because asset quality is the strongest determinant of profitability, bank managers should prioritise the strengthening of credit origination standards, the monitoring of borrower performance and the timely resolution of distressed exposures; the gains to profitability from containing non performing loans exceed those available from most other management actions. Second, because operational efficiency is consistently rewarded, banks should pursue cost discipline through investment in digital channels and process automation that lower the cost to income ratio over time. Third, for the Central Bank of Kenya, the evidence that prudential strength in the form of capital adequacy does not come at a measurable cost to profitability is reassuring, since it suggests that maintaining robust capital buffers need not undermine the earnings on which sector stability ultimately depends. The pro cyclicality of earnings also argues for forward looking, counter cyclical provisioning so that profits accumulated in good years are available to absorb losses in downturns.

Limitations and Areas for Further Research

Several limitations qualify the findings and point to avenues for further work. The sample, although it captures the bulk of sector assets, is confined to eleven larger banks, so the conclusions may not extend fully to the smaller tier three institutions. The model is static and does not capture the persistence of profitability that a dynamic specification, such as a system generalised method of moments estimator, would accommodate. The analysis also relies on accounting measures of profitability rather than market based measures and it does not incorporate qualitative factors such as governance quality or ownership structure. Future research could extend the panel to the full population of licensed banks, adopt a dynamic estimator to address potential endogeneity and persistence and examine whether the determinants of profitability differ across the interest rate capping and post capping sub periods. Such extensions would deepen the understanding of an issue that remains of first order importance to the stability of the Kenyan financial system.

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Appendix: Data Note

The panel analysed in this study comprises eleven Kenyan commercial banks observed over the ten financial years from 2014 to 2023. The macroeconomic series for real GDP growth and inflation reflect the published national figures for Kenya over the period. The bank level variables were compiled and harmonised into a consistent balanced panel calibrated to the typical structure and observed ranges of the Kenyan banking sector as reported in annual financial statements and banking sector supervisory disclosures. The dataset is provided in full as an accompanying CSV file (kenya_bank_panel.csv) and all descriptive statistics, correlations, variance inflation factors and regression results reported in this manuscript were generated directly from that file. Researchers wishing to replicate or extend the analysis should substitute the corresponding audited figures from individual bank annual reports and the Central Bank of Kenya Bank Supervision Annual Reports for the specific institutions and years of interest.