

Liquidity, Capital Adequacy and Operating Efficiency of Commercial Banks in Kenya

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Abstract

This study aimed at examining the effect of liquidity and capital adequacy on the operating efficiency of commercial banks in Kenya. Specifically, we sought to establish the effect of bank specific liquidity ratios (Interbank ratio, loan ratio, net loans to total deposits, liquid assets to short term liabilities ratio) and capital adequacy ratios (core capital ratio, risk based capital ratio, total capital ratio, equity capital to total asset ratio) on their operating efficiency. The findings of the study indicate that the previous year operational efficiency ratio, liquid assets to short-term liabilities ratio and total capital ratio positively and significantly affect the bank operating efficiency. The study adopted an explanatory research design and analysed the data using Fixed Effects Regression. From the regression results, the overall R² of 0.4108 was derived meaning that 41.08% of banks operational efficiency is as a result of the study variables. This implies that the history of a firm's performance will definitely influence how a firm moves forward in an effort to streamline its operational strategies. Therefore, banks should seek on mechanisms to improve their liquid assets to deposits ratio and total capital ratio in readiness to improve operating efficiency and remain competitive in the market.

Keywords: Commercial Banks, Operating Efficiency, Liquidity, Capital Adequacy

1. Introduction

Commercial banks play an important role as financial intermediaries for savers and borrowers in Kenya. According to Kenya Credit Providers Association (KCPA) commercial banks in the country disbursed over US\$10 billion in loans. Non-formal financial institutions served the remainder of the loans market. These included credit union/SACCOs, which disbursed US\$2 billion in loans, and micro finance institutions (MFI), which managed only US\$300 million (KCPA, 2010). Oloo (2009) described the banking sector in Kenya as the bond that holds the country's economy together. Sectors such as the agricultural and manufacturing virtually depend on the banking sector for their very survival and growth.

Operational efficiency is narrowly defined as the ability to deliver products and services cost effectively without sacrificing quality. It can also be defined as what occurs when the right combination of people, process, and technology come together to enhance the productivity and value of any business operation, while driving down the cost of routine operations to a desired level (Shawk, 2008). The end result is that resources previously needed to manage operational tasks can be redirected to new, high-value initiatives that bring additional capabilities to the organization. Relatively firms that are more efficient tend to maintain more stable levels of output and operating performance compared to their industry peers (Mills and Schumann 1985).

Banks operate efficiently by directing society's savings toward those enterprises with highest expected social returns and monitoring them carefully after lending society's scarce resources are allocated more efficiently. In contrast, banks that simply operate with waste and inefficiency will slow down economic growth and reduce society's welfare (Athanasoglou *et al*, 2008). Efficiency in intermediation of funds from savers to borrowers enables allocation of resources to their most productive uses. The more efficient a financial system is in such resource generation and in its allocation, the greater its contribution to productivity and economic growth (Beck, *et al*. 2000). Management of operations has been usually a secondary concern, partly because it has been considered, for some reason, to be less critical to profitability (Said, 2012). The importance of operating efficiency for banks was put into evidence by a study done on Indian scheduled commercial banks (Siraj and Pillai 2011). Its findings were that key determinants of operational efficiency were affected by the global financial crisis. This reinforces the need to understand the drivers of operational efficiency for proper management of commercial banks.

Whilst the Kenyan banking sector is the largest in terms of assets in the financial services industry, it is not the largest supplier of credit (KCPA, 2010). The performance of the banking industry in Kenya has improved tremendously over the last decade, since only two banks have been put under CBK statutory management

compared to 37 bank-failures between 1986 and 1998 (Mwega, 2009). However, in the same period the level of interest rates have remained high implying an attempt of commercial to pass their inefficiencies to consumers. This could be attributed to the inability to push their operational costs downwards.

Despite the growth in the Kenyan banking sector, the sector still faces many challenges with respect to management of risks that banks they are exposed to. According to CBK, operating efficiency was one of the most critical risks faced by financial institutions in Kenya and Kenyan banks are yet to adopt model-based approaches in assessing their operating efficiency (CBK, 2011a). Risk-taking is an inherent element of banking and, indeed, profits are in part the reward for successful risk taking in business. However, excessive or poorly managed risk can lead to losses and thus endanger the safety of a bank's deposits. The management of financial institutions should recognize measure, monitor and control the overall levels of risks undertaken. Sound risk management systems enable managers to take risks knowingly, reduce risks where appropriate and strive to prepare for a future that cannot be predicted with absolute certainty.

A few studies on the Kenyan banking sector have addressed issues of corporate governance, evolution of e-banking and profitability among others. However, no study has examined operating efficiency of commercial banks in Kenya, yet it is paramount for the sector to operate efficiently. Analysis of the effect of liquidity and capital adequacy on operating efficiency is intended to offer an insight to managers on one of the approaches to risk management in the banking sector. This paper examines the effect of bank liquidity and capital adequacy on operating efficiency of commercial banks in Kenya.

2. Theoretical considerations

This study was guided by three main theories namely: -economic efficiency theory, modern theory of financial intermediation and regulatory and efficient marketing monitoring hypothesis. Economic efficiency theory states that companies should achieve their output at the lowest possible cost per unit produced. According to this theory, optimal production can be achieved by economies of scale. Thus, in the short run, maximum operational efficiency is attained at the level of output at which all accessible economies of scale are taking advantage of such efficiency. In the long run, lifting the capacity of existing systems can increase the optimal level of productive efficiency (Zerbe, 2001; Said, 2011). There are two perspectives of economic efficiency theory; allocative (price) efficiency criteria that states that for banks to operate at efficient level, then all bank products have to be priced optimally. This will in turn reduce unfair competition in the market and reduction in interest rate spreads. The productive efficiency (technical efficiency) which takes place when the business employs all of its resources efficiently, producing the most output from the least input (Sathye, 2001; Barr, et al 2002; Saad & El-Moussawi, 2009; Said 2011).

Modern theory of financial intermediation argues that the role of banks in the economy is to create liquidity by funding illiquid loans with liquid demand deposits (Diamond 1984, Ramakrishnan and Thakor, 1984). Banks create liquidity on the balance sheet by transforming less liquid assets into more liquid liabilities. Liquid banks may be more efficient in the sense that, all other things being equal, an efficient bank can produce more output part of which includes liquid and other assets. According to Gorton and Huang, (2002), banks and banking systems that produce more liquidity than others perhaps can be viewed as both more 'liquidity efficient' and also less risky. Kashyap, et.al, (2002) suggested that banks might also create significant liquidity off the balance sheet through loan commitments and similar claims to liquid funds.

Regulatory and efficient marketing monitoring hypothesis states that regulators encourage banks to increase their capital to commensurate with the amount of risk taken by the banks. This may be achieved through efficient market monitoring, mechanisms that will call for increase in capital when capital positions are deemed inadequate (Calomiris and Kahn, 1991; Berger, 1995). Thus, an important factor contributing to a positive relationship between capital adequacy and credit risk management to banks efficiency relates to the actions of regulators and supervisors (Shrieves and Dahl, 1992; Jacques and Nigro, 1997; Aggarwal and Jacques, 1998; Editz et al., 1998). Banks could respond to regulatory actions forcing them to increase their capital by increasing asset risk (Kahane 1977, Koehn and Santomero, 1980 and Kim and Santomero, 1988).

The need to control the high incidence of loan default occasioned by increased lending activities was a popular motive for reforms in financial systems in developing economies. The statutory minimum capital adequacy ratio for commercial banks in Kenya is 12%, which is measured by the ratio of Total Capital to Total Risk Weighted Assets (CBK, 2011a)

According to Gorton and Winton (1998), Altunbas et al (2007), any empirical approach that is used to model the relationships between capital and risk also needs to take account of bank efficiency. Harley (2011), states that government should regulate investment policy for banks for them to be more efficient and be globally competitive.

3. Model specification

The following model was used;

$$y = \alpha + \lambda y_{-1} + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \varepsilon$$

Where:

Y	=	Bank operating efficiency
$\alpha, \lambda, \beta_1 \dots \beta_8$	=	Estimated coefficients
y_{-1}	=	Lagged Bank Operating Efficiency
X_1	=	Interbank Ratio
X_2	=	Loans Ratio
X_3	=	Net Loans to Total Deposits
X_4	=	Liquid Assets to Deposits
X_5	=	Core Capital Ratio
X_6	=	Risk – based Capital Ratio
X_7	=	Total Capital Ratio
X_8	=	Equity Capital to Total Asset Ratio
ε	=	Error term

Operating Efficiency ratio = (Interest income + non-interest income + securities gains)/ (Interest expense + non- interest expense + provision for loan losses + taxes)

4. Methodology

This study used an explanatory approach by using panel research design. Data was collected from 40 commercial banks out of 44, which existed and had the required data during the entire study period. The study used secondary data, which was retrieved from published statements of accounts of the 40 commercial banks both from the central bank of Kenya and the respective commercial banks for seven-year period 2005-2011. The respective ratios were then computed from the data retrieved from the statements of accounts of the banks. The collected data was analyzed using stata software. Descriptive statistics for panel data, correlation matrix and estimation of panel data were run. Inferential statistics using the Hausman test checks were done in order to determine a more efficient model against a less efficient one. The study carried out the fixed effects regression analysis to examine the effects of bank specific liquidity ratios and capital adequacy ratios on their operating efficiency.

5. Results and discussion

Table 1 shows regression results of the fixed effect model. Results show that, previous year's operational efficiency, total capital ratio and liquid asset to short-term liabilities ratio were significantly different from zero at $\alpha = 0.05$. This implies that the history of a firm's performance will definitely influence how a firm moves forward in an effort to streamline its operational strategies. Similarly, the significance of the capital ratio implies that commercial banks well endowed with capital resources are more stable operationally and are able to cushion themselves from financial shocks in the capital markets. This is inconsistent with previous findings (Altunbas 2007) Therefore; the central banks should endeavour to keep the base lending rate as low as possible to improve access to capital resources by commercial banks. In addition, commercial banks in Kenya need to engage in prudent investment of their capital resources to avoid overexposure to risks consistent with the findings by Harley (2011). The results also indicate that commercial banks with enough liquid assets tend to draw more confidence with customers because of the ability to address short-term financial obligations. It is therefore important for the central bank to ensure full compliance with the minimum liquidity requirement by commercial banks. The other ratios, interbank ratio, loan ratio, net loans to deposits ratio, core capital ratio, risk based capital ratio and equity to total asset ratio, were not significantly different from zero.

Conclusion

This study investigates the effect of liquidity and capital adequacy on operating efficiency of commercial banks in Kenya. The results show that previous year's operational efficiency, liquidity and capital adequacy combined explain about 41% of the bank's operating efficiency. Further, total capital ratio and liquid asset to deposits ratio positively affect operating efficiency of the banks. The other liquidity ratios- interbank ratio, loan ratio, net loans to deposits ratio and capital adequacy ratios - core capital ratio, risk based capital ratio and equity to total asset ratio insignificantly effect operating efficiency of the banks. We recommend commercial banks to strive to increase their total capital ratio in order to reduce their operational risks and therefore increase operational efficiency. Similarly, they should increase the ratio of liquid assets to deposits and short term funding in order to increase their operational efficiency. Future research should be concerned with factors influencing the operating efficiency of commercial banks. Moreover, a full model for operating efficiency for

banks will go a long way in assisting bank managers to evaluate and attempt to minimize risks that banks are exposed to.

6. Policy Recommendations

Operational efficiency as the study has found out will be brought by the factors under this study. The history of a firm's performance will definitely influence how a firm moves forward in an effort to streamline its operational strategies. Similarly, banks well-endowed with capital resources are more stable operationally and are able to cushion themselves from financial shocks in the capital markets. Therefore, banks should seek on mechanisms to improve their liquid assets to deposits ratio and total capital ratio in readiness to improve operating efficiency and remain competitive in the market. A model for operating efficiency of banks will go a long way in assisting bank managers to evaluate and attempt to minimize risks that banks are exposed to.

7. Areas of further research

Since the study variables only account for 41.08% of the changes in operational efficiency, it means that 52% of the banks operational efficiency is determined by other factors. Therefore, a study should be done using different variables to determine their effect on operational efficiency. Some of the factors can be board of Directors composition, skills and qualifications of the staff, values of collateral used and automations of the operations.

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Table 1: Fixed Effects Regression Results

R-sq: within = 0.0836	F (9, 39) = 1429.33					
	corr(u_i, Xb) = 0.4577					
Between = 0.4368	Prob > F = 0.0000					
Overall = 0.4108						
Parameters	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Op. efficiency lag	0.2373	0.1082	2.1900	0.0340	0.0184	0.4561
Core capital ratio	0.0697	0.0783	0.8900	0.3790	-0.0887	0.2281
Risk based capital ratio	0.2507	0.3219	0.7800	0.4410	-0.4005	0.9018
Total capital ratio	0.0002	0.0001	2.1400	0.0390	0.0000	0.0004
equity/asset ratio	-0.1965	0.6249	-0.3100	0.7550	-1.4605	1.0674
interbank ratio	0.0000	0.0000	0.2600	0.7950	0.0000	0.0000
loan ratio	-0.0352	0.2112	-0.1700	0.8680	-0.4625	0.3920
net loans/deposits ratio	-0.0485	0.1519	-0.3200	0.7510	-0.3558	0.2588
liquid assets/deposits ratio	0.0079	0.0020	3.8900	0.0000	0.0038	0.0120
_cons	0.8882	0.2221	4.0000	0.0000	0.4390	1.3374
sigma_u	0.1318					
sigma_e	0.0912					
rho	0.6764					

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