EFFECT OF LIQUIDITY RISK MANAGEMENT ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS LISTED IN NAIROBI SECURITIES EXCHANGE

[1*] **Nyangweso George Orangi**
gnyangweso@gmail.com

[2**] **Wallace Nyakundi Atambo**
atambowa@yahoo.com

[3***] **Vitalis Abuga Mogwambo**
vmogwambo@yahoo.com

[1,2] *Jomo Kenyatta University of Agriculture and Technology*
[3] *Jaramogi Oginga Odinga University of Science and Technology*

Abstract: *The banking sector plays a critical role in the economy to drive savings and financing of Kenya's investment needs. The listed commercial banks are exposed to liquidity related risks and inadequate framework to support the banking business have not been addressed adequately as the past empirical studies show mixed results as to how and to what extent liquidity risk management affects performance of commercial banks. The purpose of this study was to assess the effect of liquidity risk management on the financial performance of commercial banks Listed in Nairobi Securities Exchange. The study specific objectives were: to establish the effect of cash reserves on the financial performance of commercial banks Listed in Nairobi Securities Exchange, assess the effect of customers' deposits on the financial performance of commercial banks Listed in Nairobi Securities Exchange, determine the effect of non-performing loans on the financial performance of commercial banks Listed in Nairobi Securities Exchange and determine the effect of asset base on the financial performance of commercial banks Listed in Nairobi Securities Exchange. The study was directed by three theories: Shiftability Theory of Liquidity, Information Asymmetry Theory and the Modern portfolio theory. The study findings reveal that cash reserves has almost a perfect association with financial performance ($R = .992^a$) and explains up to 98.5% of the variation in the dependent variable ($R^2 = .985$). This relationship was statistically significant (adjusted $R^2 = .940$; $p.0156 < 0.05$); the customer deposits on the financial performance of commercial banks Listed the results indicated a weak association existed between customer deposits and net interest Margin ($R = 0.617^a$; $R^2 = .381$); this variable explained the financial performance of the banks up to 38.1% of the variation in net interest margin and the result is statistically insignificant (adjusted $R^2 = .175$, $p = .267 > 0.05$); the non-performing loans on the financial performance, the results indicated that non-performing loans influenced up to 80.8% of the financial performance ($R^2 = 0.808$; $P = .000 < .05$) and therefore the results can be generalized in the commercial sector to predict the financial performance; the effect of asset base on the financial performance, the results showed a positive and strong association existed between asset base and banks financial performance ($R = 0.807^a$; $R^2 = 0.651$; $F = 13.979$; $p = .000 < .05$) and the effect is statistically significant ($p < .05$). The study concludes that statistically significant effect exist between explanatory variables: cash reserves; customer deposits; non-performing loans; asset base and financial performance of commercial banks listed in NSE*

Keywords*: Commercial Banks, Liquidity Risk Management, Nairobi Stock Exchange*

I. INTRODUCTION

Banks in any economy play a very vital role by enhancing transactions and providing finance to grow economy Seidler, (2013). Commercial banks facilitate the flow of money in any economy and try to balance and easy transactions among businesses and organization. Banks also enhance investment among the citizenry and investors from outside the county which promote economic health and establishment of industries. Thus, banks should hold more liquid assets to help indemnify themselves from potential liquidity problems, Promono, (2012)

Liquidity problems impact adversely on the earnings, capital and in extreme circumstances, may even lead to the collapse of the bank. Akhtar, (2016) indicates that varied nature of functions performed by commercial banks expose them to the risk that a bank may not meet its obligations such as the depositors may call their funds at an inconvenient time, causing fire sale of assets thus negatively affecting profitability of the bank.

Kasha, (2017) indicates that risk management gained more attention when there was global financial crisis in which commercial banks, stock markets such as Nairobi stock exchange and large financial institutions collapsed which triggered the governments to recognize the impact of ineffective risk management in their financial systems and this led to enactment of risk control mechanisms. Among the risk which were introduced to cope with risk management focused on operational, credit and liquidity aspects which help banks to quantify their risks and apply their risk management practices. After the introduction of the measures banks had not fully appreciated the importance of liquidity risk management and the implications of such risk for the banks and the financial systems.

Anis, (2013) says that liquidity risk among commercial banks may not only affect the performance of a bank but also its reputation as customers may lose confidence if they cannot access their deposits when needed. Further, unfavorable liquidity position may cause penalties from the regulator. Therefore, it is imperative for a bank to maintain a sound liquidity arrangement. Liquidity risk has become a serious concern and challenge for the 21st banking system. These has been caused by high competition for consumer deposits, a wide array of funding products in wholesale and capital markets with technological advancements have changed the funding and risk management structure. A commercial bank having good asset quality, strong earnings and sufficient capital may fail if it is not maintaining adequate liquidity, James, (2010). Muntheu, (2009) indicates that in banking theory and practice, there are no commonly accepted indicators measuring the liquidity of banks. However, deposits, cash reserves, non-performing loans and bank size can be used as liquidity indicators. Nyang'au (2014) says that non-performing loans are closely associated with banking crises which should be considered as one of the main causes of the global financial crisis which damaged economies of many countries. Therefore, there is need to devise mechanisms to control the non-performing loan levels to avert the possibility of a breakdown in the financial system which may cause liquidity.

Kenya National Bureau of Statistics (2016), having the highest cost to Income ratio at 63.6% against the industry average of 48.1% and the largest NPLs to loans at 42.1% against the industry average of 11.6%, with one of lowest NPL coverage at 17.1% against the industry average of 36.4%. Lucei, (2014) indicates that the sector's growth declined from 6.5% in 2012 to 6.8% in 2014. Its contribution to GDP decreased from 6.3 per cent to 5.2 per cent over the same period KNBS, (2017) while its assets, excluding capital markets rose from 85.56% of GDP in December 2013 to 88.51% in 2014 but declined to 83.27% in 2016 Mehshud (2012) . The banking systems in Kenya are categorized under the financial sector which plays a significant role in the economy. The country has got 42 commercial banks which are expected to drive high levels of savings to

finance the country's investment needs, Toriongu, (2014). Despite its expected relevance, the banking sector faces many challenges with respect to management of risks it is exposed to such as operating efficiency, credit risk and interest rate risk. National Bank of Kenya experienced the same scenario in the period of 2014 to 2016.

Otieno, and Onditi (2018), studied the relationship between liquidity risk management and financial performance of microfinance banks in Kenya over a 5 year period through 2014 to 2017 using a descriptive research design. The study found that there existed a significant positive relationship between liquidity risk management and performance of microfinance banks and recommended that microfinance banks should have a robust framework for projecting cash flows arising from assets, diversify funding sources, institute a formal contingency funding plan for addressing liquidity shortfalls and invest retained earnings in marketable securities to mitigate liquidity challenges but did not consider the lack of marketability of these securities in the period of distress as it may be difficult to convert them into cash since market confidence would be impaired hence creditworthiness would be lacking.

Nyang'au and Nyamasege (2016), studied the effect of bank liquidity on profitability of commercial banks in Kenya using a descriptive research design over 5 years from 2010 to 2014 relying on secondary data from the annual published financial statements. The study found that liquidity had a statistically significant and positive relationship to banks' profitability and recommended that banks should invest heavily in assets if substantial gains had to be realized, maintain adequate liquidity levels in the form of short term marketable securities in order to realize profit and aggressively identify viable investment opportunities and link such opportunities to customer deposits. This study used banks liquidity level as an internal factor to measure profitability of commercial banks and by recommending banks to increase investment in assets would be expensive to commercial banks making commercial banks to miss lucrative opportunities simply by investing in assets.

Odunga, (2014), conducted a study on the effect of credit risk, liquidity and operating efficiency for low and high market shares of commercial banks in Kenya. His study found out that operating efficiency and credit risk proxy by loan loss provision to total equity ratio was indicated while liquidity proxy by interbank ratio was insignificant in explaining operating efficiency. His study recommended that commercial banks should seek on mechanisms to improve on the said variables in readiness to improve operating performance and remain competitive in the market. But the study failed to address in detail the effects of these variables on the market share performance which is an indicator of bank performance among other indicators of performance. Therefore past studies have produced mixed results indicating that inadequate information is available on the relationship between liquidity risk management and financial performance of commercial banks particularly those listed in NSE.

Statement of the problem

This study acknowledges that quite a number of researchers have conducted research in the field of liquidity risk management. However, such literature failed to incorporate the need to establish the need of adequate liquidity risk management in the commercial banks that are the greatly affected by management of its resources. Therefore this study sought to do an assessment of the effect of liquidity risk management on financial performance of commercial listed in Nairobi Security exchange.

The review of empirical studies showed mixed results as to how and to what extent liquidity risk management affected performance of commercial banks particularly those listed in securities exchange. Therefore this study was anchored on the effect of liquidity risk management and financial performance of commercial banks listed in Nairobi securities exchange.

Objectives of the Study

The study was guided by the following specific objectives:

i.   To establish the effect of cash reserves on the financial performance of commercial banks Listed in Nairobi Securities Exchange.

ii. To assess the effect of customers deposits on the financial performance of commercial banks Listed in Nairobi Securities Exchange.

iii. To determine the effect of non-performing loans on the financial performance of commercial banks Listed in Nairobi Securities Exchange.

iv. To determine the effect of asset base on the financial performance of commercial banks Listed in Nairobi Securities Exchange.

II.   RESEARCH METHODOLOGY

The study adopted a descriptive survey research design. The study units of analyses were the commercial banks listed in Nairobi Securities Exchange. Therefore, the 11 Commercial banks listed at the NSE formed the target population for this study. The study sample size was all the 11 commercial banks. The study adopted a census sampling technique. The secondary data used in this study were collected from both individual bank's financial statements and the Central Bank's database using a data collection guide. The secondary data collected was analyzed using descriptive statistics such as means and standard deviations and presented in form of graphs, tables, percentages and bar charts. Correlation analysis and regression analysis was used to explain the relationship between interest rate policies, interest income and financial performance of listed commercial banks' at 95% confidence level.

III.   RESULTS AND DISCUSSION

Descriptive Statistics

Table 1 Descriptive Statistics

	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic
NET INCOME MARGIN (**NIM**)	12203736	19722447	16548100.80	3292454.106
CUSTOMER DEPOSITS (**CDeP**)	5644000	9198171	6582307.80	1471878.775
ASSET BASE (**AB**)	368428000	595239643	480610340.00	99827129.382
CASH RESERVES (**CR**)	54705000	96565775	74302781.20	16199285.500
NON PERFORMING LOANS (**NPL**)	6413551	10743891	8634846.80	1948761.960

Data from the field as presented in table 1 show that Net Interest margin had a minimum value of Kshs 12,203,736 and a maximum value of Kshs 19,722,447. It had a mean of Kshs 16,548,100.80 with the values deviating from this mean by a standard margin of 3,292,454.106. This implies that the data values were scattered far away from the mean. With regard to customer deposits, the results show that the minimum customer deposits were of Kshs 5,644,000 and the maximum was of Kshs 9,198,171. The mean of the customer

deposits was Kshs 6,582,307.80 with the other values deviating from this mean by a standard deviation margin of 1,471,878.775. With regard to Non-Performing loans, the results show that the minimum amount was Kshs 6,413,551 and the maximum was of Kshs 10,743,891. The mean of the Non-Performing loans was Kshs 8,634,846.80 with the other values deviating from this mean by a standard deviation margin of 1,948,761.960. Therefore the conclusion is that the departure of the frequency distribution of non-performing loans from a normal distribution is small.

Cash Reserves and Financial Performance

The first objective was to establish the effect of cash reserves on the financial performance of commercial banks Listed in Nairobi Securities Exchange. The results are presented in table 2 below;

Table 2 Model Summary for Cash Reserves and Financial Performance

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | Durbin-Watson |
					R Square Change	F Change	Sig.	
1	.992[a]	.985	.940	807073.20167	.985	21.860	.0156	2.460

a. Predictor: (Constant), cash Reserves
b. Dependent Variable: Net Interest Margin (financial Performance)

The results from the field indicate that the explanatory variable cash reserves has almost a perfect association with the dependent variable (R = .992[a]) and explains up to 98.5% of the variation in the dependent variable (R^2 = .985). This relationship shown from the study is statistically significant (adjusted R^2 = .940; p.0156< 0.05). The Durbin Watson value is within the range indicating that there is no serial correlation in the data used in this study.

Customer Deposits and Financial Performance

The second objective was to establish the effect of customer deposits on the financial performance of commercial banks Listed in Nairobi Securities Exchange. The results are presented in table 3 below;

Table 3 Model Summary Customer deposits and Financial Performance

| Model | R | R Square | Adjusted R Square | Std. Error of the REstimate | Change Statistics | | | Durbin-Watson |
					R Square Change	F Change	Sig.	
1	.617[a]	.381	.175	2990745.74384	.381	1.848	.267	1.274

a. Predictor: (Constant), Customer Deposits
b. Dependent Variable: Net Interest Margin

The results indicate that a weak association exists between customer deposits and net interest Margin which is an indicator of financial performance (R = 0.617[a]); this variable explains the financial performance of the banks up to 38.1% of the variation in net interest margin (R^2 = .381) but this result is statistically insignificant (adjusted R^2 = .175, p= .267 > 0.05).

Non-Performing Loans and Financial Performance

The third objective was to establish the effect non-performing loans on the financial performance of commercial banks Listed in Nairobi Securities Exchange. The results are presented in table 4 below;

Table 4 Model Summary Non-Performing Loans and Financial Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	Sig.
1	.899ª	.808	.808	543.68553	2.142	.000

   a. Predictor: (Constant), Non-Performing Loans

   b. Dependent Variable: Net Interest Margin (Financial Performance)

The results in table 4 indicate that the explanatory variable Non- performing loans influence up to 80.8% of the financial performance (R^2 =0.808) as the 19.2% of the unexplained variation in financial performance can be attributed to other factors which are not included in this study.

The adjusted R square reveal that the suitability of the model is up to 80.8% (adjusted R square = 0.808; P = .000< .05) and therefore it can be generalized in the commercial sector to predict the financial performance up to 80.8%. The Durbin-Watson value indicate the degree of correlation between a given time series and a lagged version of itself over successive time intervals. The Durbin-Watson statistic is always between 0 and 4. Therefore, a value of 2.142 means that there is no auto-correlation in the data used in this study. This result is in line with findings by Abreu and Mendes (2009) who established that the more banks offer loans the more they do generate revenue and more profit. However, as observed by Rasiah (2010), banks have to be cautious in offering more loans because as they offer more loans to customers they expose themselves to liquidity and default risks which impacts negatively on banks' profits and survival. As further observed by Access Capital Research (2010), Bank loans are expected to be the main source of income and are expected to have a positive impact on commercial bank financial performance. Therefore when non-performing loans increase, their financial performance will significantly decrease.

Asset Base and Financial Performance

The fourth objective was to establish the effect of asset base on the financial performance of commercial banks Listed in Nairobi Securities Exchange. The results are presented in table 5 below;

Table 5 Model Summary Asset Base and Financial Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Durbin-Watson
					F Change	Sig. F Change		
1	.807ª	.651	.604	127735331.02922	13.979	.000		1.113

a. Predictor: (Constant), asset Base

b. Dependent Variable: Net Interest margin (Financial Performance)

Information in table 5 indicate that a positive and strong association exist between the explanatory variable asset Base and banks financial performance (R =0.807ª). The asset Base explain up to 65.1% of the variation in banks financial performance (R^2 =0.651; F =13.979; p= .000< .05) and the effect is statistically significant (p< .05). The variable asset Base in the model can be relied on in the prediction of banks financial performance up to 60.4% (adjusted R^2 = .604).

IV.   SUMMARY OF FINDINGS

The study findings indicated that there were effects of cash reserves on the financial performance of commercial banks Listed in Nairobi Securities Exchange. The results indicated that the explanatory variable cash reserves has almost a perfect association with the dependent variable (R = .992ª) and explained up to

98.5% of the variation in the dependent variable (R^2 = .985). This relationship was statistically significant (adjusted R^2 = .940; p.0156< 0.05).

The study findings indicated that there were effects of customer deposits on the financial performance of commercial banks Listed in Nairobi Securities Exchange. The results indicated that a weak association existed between customer deposits and net interest Margin which is an indicator of financial performance (R = 0.617[a]); this variable explained the financial performance of the banks up to 38.1% of the variation in net interest margin (R^2 = .381) but this result is statistically insignificant (adjusted R^2 = .175, p= .267 > 0.05).

The study findings indicated that there were effects of non-performing loans on the financial performance of commercial banks Listed in Nairobi Securities Exchange. The results indicated that the explanatory variable non-performing loans influenced up to 80.8% of the financial performance (R^2 =0.808) and the 19.2% of the unexplained variation in financial performance in the banking sector. The adjusted R square revealed that the suitability of the model is up to 80.8% (adjusted R square = 0.808; P = .000< .05) and therefore the results can be generalized in the commercial sector to predict the financial performance.

The study findings indicated that there were effects of asset base on the financial performance of commercial banks Listed in Nairobi Securities Exchange. The results showed that a positive and strong association exist between the explanatory variable asset Base and banks financial performance (R =0.807[a]). The asset Base explain up to 65.1% of the variation in banks financial performance (R^2 =0.651; F =13.979; p= .000< .05) and the effect is statistically significant (p< .05). The variable asset Base in the model can be relied on in the prediction of banks financial performance of banks.

Conclusion

From the results on the effect cash reserves; customer deposits; non-performing loans; asset base and financial performance of commercial banks Listed in Nairobi Securities Exchange, the study concludes that statistically significant effect exist between explanatory variables: cash reserves; customer deposits; non-performing loans; asset base and financial performance of commercial banks listed in NSE.

Recommendations

Based on the findings of this study and conclusions, the study recommends that commercial banks listed in NSE should maximize effective management and optimization of cash reserves; customer deposits; non-performing loans; asset base to improve on their financial performance.

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