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Influence of Liquidity Risk on Performance of Commercial Banks in Kenya.

Maniagi Musiega[1], Dr. Tobias Olweny[2], Dr. Clive Mukanzi[3], Dr. Mbithi Mutua[4]
[1] (PhD student *JomoKenyatta University of Agriculture and Technology)*
[234] (*Lecturer JomoKenyatta University of Agriculture and Technology)*

Abstract *: The main objective of the study was to determine the influence of liquidity risk on performance of commercial Banks Despite the banking sector stability and resilience in 2015, two non-systemic banks, were placed in receivership by the Central Bank of Kenya this was attributed to liquidity risk. Secondary data was used in the study. The population for secondary data were the 44 commercial banks in Kenya of which 2 were under receivership and one under statutory management. Panel data for 30 commercial banks that had data for 10 year period from 2006 to 2015 were obtained from the central bank of Kenya and banks website. Descriptive statistics, correlation analysis, and random and fixed effects were used using E-views software The findings were liquidity risk measured by Liquid assets to total assets ratio had a positive and significant relationship with performance*

Keywords: *Autocorrelation, Financial Risk, Return on Assets, Unit Root,*

I. Introduction

In period 2007 to 2009 financial crisis bank regulators came up with Basel III Capital requirements aimed at providing banks with sufficient reserves so as to withstand future crises (BCBS, 2009). Basel Committee of Banking Supervision BCBS of 2009 new rules focused on market risk, liquidity risk and credit risk (Simone, 2011). Banking systems get exposed to excessive risks but riskier investments are assumed to be more profitable as per Markowitz portfolio theory hence this research intends to establish the influence of liquidity risk on financial performance of commercial banks in Kenya. Regulatory agencies aim at reducing occurrence of systemic crises, but banks desire high profits for their clients. These procedures tends to be associated with higher risks in providing financial services and assuming various kinds of financial risks (Helder, Délio& Renato, 2011).

According to Shim (2013), large banks tend to be diversified when managing capital assets they tend to have easier access to capital markets compared to smaller banks. This shows that small banks are more prone to bank failure than large banks. However Li (2013) noted that large banks find themselves prone to risky lending activities which lead to large losses hence failure. This research will further determine the influence of bank size as a control variable on financial performance of commercial banks in Kenya

In the present day's unpredictable and explosive atmosphere, all banks are in front of hefty risks including operational risk, credit risk, liquidity risk, foreign exchange risk, market risk, and interest rate risk, along with others risks (Khizer, Muhammad &Shama, 2011). Commercial bank activities include provision of services and products like loans to customers, engaging in financial intermediation and overall management of risk. Financial systems should be analysed from a functional perspective not institutional perspective as the functions are more stable for a long period of time than the institution (Rudra & Jayadev, 2009).Risk management enables financial institution to put in place safeguards to reduce the potential losses that emanate from uncertainties in the financial markets (Aleksandra, Dalia &Julija, 2014). There are forty four commercial banks in Kenya of which ten of them are registered on the Nairobi Securities Exchange (NSE) as per central bank of Kenya report 2015, of which 28 banks are locally owned and14 are foreign owned (CBK, 2015).

II. Specific Objectives

i) To establish the influence of liquidity risk on financial performance of commercial banks in Kenya.
ii) To determine the influence of bank size as a control variable on financial performance of commercial banks in Kenya.

III. Research Hypotheses

i) $\mathbf{H_{a1}}$ **:**Liquidity risk has significant influence on financial performance of banks in Kenya.
ii) $\mathbf{H_{a2}}$ **:**Bank size as a control variable has significant influence on financial performance of banks in Kenya

IV. Literature review

BCBS,(2008) asserts that fundamental role of banks in the transformation of short-term deposits into long-term loans makes banks vulnerable to liquidity risk, A liquidity shortfall at a single bank can have system-wide repercussions. The global sub-prime crisis of 2007 to 2008 emphasized the importance of liquidity management in banking sector. The Basel Committee issued its "Principles for Sound Liquidity Management and Supervision which gave two concepts of liquidity, funding liquidity and market liquidity. Funding liquidity refers to the ease which an organisation can attract funding. Market liquidity is high if it's easy for an organisation to raise funds by selling an asset, other than borrowing against it as collateral. Liquidity becomes a risk factor if the magnitude of impact changes randomly over time (Clemens, Iman & Robert, 2015).

Liu (2011) put forward various methods to measure liquidity risk including cash in hand to asset ratio, liquidity ratio, borrowing fund-asset ratio, borrowing fund-deposit ratio, cash reserve ratio deposit-credit ratio, lending fund-deposit ratio, and debt paying ability. Bessis (2010) considers liquidity risk from three perspectives. The first one is considered where the bank cannot raise funds at a reasonable cost due to conditions related to level of interest rates, transaction volumes, and difficulties in funding counterparty. The second perspective looks at liquidity as a safety cushion that helps to gain under difficult situations. Thus liquidity risks a situation where there is mismatch that short term assets are inadequate to pay for short time liabilities. Thus the final perspective is where liquidity risk is considered as the extreme situation. Such situations arise if there is a large loss creating liquidity issues. Basel committee on banking and supervision (2008) published principles of sound liquidity risk management and supervision where fundamental principles for the management and supervision of liquidity risk were highlighted. Thus banks should have risk management framework that ensures availability of liquidity assets sufficient to survive stress environment (Kim, 2015). The principles recommends that banks should identify, monitor, measure and control potential cash flows related to off balance sheet, commitments and contingent liability as most banks lend to underestimate the liquidity risk.

Mohammed, Ali and Mahshid (2014) posit that banks lend to facilitate the slow process of transferring funds from lenders to borrowers. Works of Sufian and Kamarudin (2012) examined the determinants of Korean banking sector where bank-specific and macroeconomic determinants were evaluated. The research findings revealed that liquidity levels significantly affect the bank's profitability this is consistent with Dang (2011) who found that adequate level of liquidity is positively related with bank profitability. This is inconsistent with Ongore and Kusa (2013) whose findings indicated that the relationship between liquidity and bank profitability in Kenya was insignificant. Kim (2015) investigated the impact of liquidity on banks performance in European Union countries panel data for the three year period to 2009 and sample data from 23 European Union countries was used. The findings were a negative relationship between liquidity ratios and performance. This is inconsistent to Chortareas, Girardone and Ventouri, (2011) where the ratio of loans to deposits as a proxy for liquidity was significant and positively related to net interest margins. Umar, Muhammad, Asad and Mazhar (2015) in their study on impact of liquidity risk management on firms' performance in the conventional banking of Pakistan. Two banks were used in the study for the period 2009 to 2013 the results indicated that current ratio was negative and significant to performance. Similar studies have shown significant negative correlation between current ratio as a proxy of liquidity and performance (Naceur & Kandil, 2009,),

Arif and Anees (2012) undertook a research on liquidity risk and its effects on banks profitability in Pakistan. The research found that there existed significant negative relationship between liquidity, deferred loans, liquidity gap and profitability. In a similar research done by Ahmed and Ahmed (2012) where 22 banks in Pakistan were used for the period 2004 to 2009. The findings were that profitability was positively correlated with liquidity gap similarly Chen, Shen and Kao (2010) studied the pattern of liquidity risk of bank on performance for commercial banks in 12 advanced economic countries for the years 1994-2006 and found that liquidity risk is a determinant of bank performance. Alper and Anbar (2011) examined special and macroeconomic determinants of Turkey's bank for the years 2002-2010 using panel data and found that liquidity had positive effects on the bank's performance. This is consistent to Naser, Mohammad and Ma'someh, (2013) based on 15 banks of Iran during the years 2003-2010 liquidity risk had a significantly negative effect on performance.

Maaka (2013) in his unpublished thesis on relationship between liquidity risk and financial performances of commercial banks in Kenya panel data for 33 Kenyan banks for the period 2008 to 2012, the results were Liquidity gap and leverage had significant negative results to performance. In a similar research done in Kenya by Mwangi (2014) where 43 commercial banks were used for the period 2010 to 2013 the findings were asset quality and banks to total Assets as proxies of liquidity were negatively correlated to performance at 99% confidence level. Betratti and stulz (2009) in their research on why did some banks perform better during credit crisis a cross country study of impact of governance and regulation. Ninety eight banks all over the world with 19 from the US and with an asset base of excess of 50 billion USD were used. The independent variables were banks characteristic, regulation factors and log of GDP. The findings were bank characteristics factors tangible equity, deposits, money market debts, and log of assets were statistically

significant at 1%. The research considered across country study which where banks from different countries which are exposed to different regulatory conditions and macro-economic factors hence these factors were used as control variables. In this paper looks at banks in Kenya only hence exposed to same regulatory conditions hence may not be suitable control different as Betratti and stulz (2009). Distinguin Rouse and Tanazi (2014) in their research market discipline and use of stock market data to predict banks financial distress, the liquidity proxies were inter-bank asset to inter-bank liabilities, gross loans to customer and short term funding, liquid assets to customer and short term funding, and liquid assets to total deposits the findings were that liquid assets to total deposits had a negative significant contribution to change in liquidity hence prediction of financial distress The existing literatures show that firm size is positively correlated with financial performance thus in particular, larger firms may attract greater risk, and therefore size may affect performance (DeNicolo, 2000). Cheung, Thomas, Limpaphayom, and Zhou. (2007) indicates that larger firms tend to have lower firm performance measures such as ROA. In line with prior corporate governance studies (Thorsten, Heiko, Thomas and Natalja, 2009), firm size is controlled in the regression model and measured as the natural log of firm's total assets at the end of financial year.

Lepetit, Nys, Rous, and Tarazi (2008) studied the impact of non- interest revenue on risk structure of banks, a sample listed and non- listed banks European countries for period 1996 to 2002. The research found small banks were risky when they compare their operating income with trading activities, while larger banks were less risk, this is similar to (DeNicolo, 2000) who found a significant positive relationship between bank size and profitability for banks in the U.S., Japan and several European countries. This is inconsistent to Thorsten, Heiko, Thomas and Natalja, (2009) researched on Germany banks, bank size had a negative relationship with bank stability for private banks Sameti, Dalali, Rahim, Karnameh and Hassan (2011) researched on impact of macroeconomic instability on lending behaviours of commercial banks in Iran, for the period of 1974-2008. Based on method of cointegration and vector error correction model, bank size had a significant positive relationship with performance. In a similar research Amr and Osama (2015) research on comparative study on the financial performance between convention and Islamic banks in Egypt found that bank size had an insignificant positive relation with performance which showed that size of a bank does not influence profitability levels.

Katuku and Dzingirai (2014) in their research on determinants of Bank Failures in Multiple- Currency Regime in Zimbabwe, Banks size was significant at 1% and negatively correlated to possibility of failure thus when the size of the bank increase, probability of failure is reduced, This contradicts research by Anas and Fauziah (2014) where bank size was used as a control variable, the research focused on financial risk for Islamic banks and profitability. Banks size measured as natural logarithm of total assets had a positive effect on profitability.

Conceptual frame work

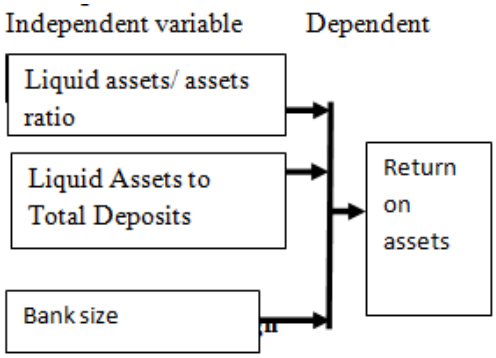

Fig 1

V. Research Design

Research design is a blueprint that guides the process of research from the formulation of the research questions and hypotheses to reporting the research findings (Sekaran&Bougie, 2011). Lavrakas (2008) states that selection of an appropriate research design is determined by the nature of research questions and hypotheses, the variables, the sample of participants, the research settings, the data collection methods and data analysis methods. For this paper research philosophy that was adopted for this research is that pursued by positivists who believe reality is stable and hence can be observed from an objective viewpoint positivists argue that a phenomena can be isolated and observations can be duplicated. The study adopted descriptive survey research design. Lavrakas Sekaran and Bougie (2011) argue that descriptive survey design helps one to understand the characteristics of a group in a given situation and assists in systematic thinking about aspects of a given situation, its where all the subjects that form the population are included in the sample.

VI. Target Population

Sekaran and Bougie (2011) defines population as the entire group of people, events or objects of interest that the researcher is to investigate. Lavrakas (2008) explain that a population is any finite or infinite collection of individual objects. The target population was 44 commercial banks in Kenya (CBK, 2015), which account for two thirds of assets of financial system. The financial statements were obtained from the central bank of Kenya website and individual banks website. The banks were supposed to have published accounts for ten years that is from 2006 to 2015.

VII. Data Collection Instruments

The research utilized Secondary data was collected from Central Bank of Kenya and various databases of the banks for financial statement for the period 2006 to 2015. Audited income statements, balance sheets and cash flow statements were collected from the central bank of Kenya (CBK) and commercial banks websites. The requirement was that the bank was in operation and has published accounts for ten year period from 2006 to 2015.

Table: 1. Operationalisation and Measurement of Study Variables

Variable	**Name of Variable**	**Operationalisation**
Dependent variables	Financial Performance	Return on assets (ROA).
Independent variables	Liquidity risk	i. liquid assets/ assets ratio
		i. Liquid Assets to Total Deposits ratio
Control variable	Size of firm	Natural logTotal assets

VIII. Data Analysis and Presentation

Data analysis involved both descriptive and inferential statistics where model specification estimation and rationale of variables was done. The data was tested for normality and transformed into natural logarithm before regression undertaken as illustrated below. This study adopted a panel data regression where Ordinary Least Squares (OLS) method was used. The data included time series and cross-sectional data that were pooled into a panel data set. This was estimated using panel data regression. Multiple regressions were conducted and the data converted to their natural logs to deal with the problem of large numbers and eliminateheteroscedasticity. The reason to stationarize data was to obtain a meaningful sample mean, variance which can show future behaviour if series is stationary. But if series is consistently increasing then will underestimate the mean (Jaroslava& Martin 2005). This paper employs multiple panel unit root tests that can be arranged in groups by cross section dependence or independence homogenous, or heterogeneous unit roots that are defined by (Levin Lin & Chu. 2002, Im, Pesaran& Shin 2003, Maddala& Wu, 1999, Phillips-Perron 2000).

$Ln\_ROA_{it}=\alpha+ \beta_1\sum Ln\_LQ_{it}++\beta_2 Ln\_SZ_i \quad t + \mu_{it}$

Where $\sum LQ_{it}$liquidity measures

Which are liquid assets/ assets ratio LQ1 and Liquid Assets to Total Deposits ratio LQ2

SZ Bank size

ROA Return on assets

μ_{it} Error term

LN Natural log

IX. Response Rate

There are 44 commercial banks in Kenya as per CBK 2015 report. For this paper 30 banks were as their financial for 10 year period 2006 to 2015 were available giving a response rate of 68%

X. Correlation Results

From table 4.1 below Ln_LQ1, Ln_LQ2 had weak positive correlations with Ln_ROA with coefficients of 0.12 and 0.05 respectively while Ln_TA had medium positive correlation with Ln_ROA with a coefficient of 0.51. This therefore means that liquidity to total assets and liquid assets to total deposit have a weak positive correlation with return on assets. The correlation results indicate that there is no multicolinearity among independent variable and the dependent variable as the correlations are below 0.9 (Ahmed & Ahmed 2012)

Table 2: Correlation of ROA with Independent Variables

	LN_ROA
LN_ROA	1.000000
LN_LQ1	0.124142
LN_LQ2	0.046764
LN_TA	0.507486

Descriptive results

Descriptive Statistics for Secondary Data From the table 3 below, the natural logarithms of return on assets had a mean of 1.04 with a standard deviations of 0.65. The measures of liquidity risk which were Liquid assets to total assets and Liquid assets to total deposits. The mean of their natural logarithm were -0.08 and 0.26 with a standard deviation of 0.3 and 0.36 respectively. Size of the bank measured by the natural logarithm of total assets had a mean of 23.88 and the standard deviation was 1.4. The mean value of return on assets (DROA) is significantly positive, thus commercial bank in Kenya are enjoying a healthy profitability. Three statistical methods were used to test normality, skewness measure the asymmetry to of the distribution while kurtosis measure the flatness or peakedness of the distribution. A distribution is considered normal if the values of skewness and kurtosis are equal to zero. Monte-carlo simulations indicate that skewness of value smaller than 2 and kurtosis value smaller than 7 should be considered normal. Skewness of value 2.0 to 3.0 and kurtosis values 7.0 to 21.0 are considered as non-normal. (Tabor, 2011).

Table 3 Descriptive results

	LN_ROA	**LN_LQ1**	**LN_LQ2**	**LN_TA**
Mean	1.04	-0.08	0.26	23.88
Median	1.18	-0.07	0.21	23.55
Maximu	2.34	2.29	2.76	26.87
Minimu	-2.30	-0.99	-1.24	20.31
Std. Dev.	0.65	0.30	0.36	1.40
Skewnes	-1.10	6.11	3.62	0.22
Kurtosis	5.02	48.63	27.06	1.87
Sum	296.60	-22.37	74.71	6829.
Sum Sq. Dev.	121.40	26.49	36.36	558.9
Observations	286	286	286	286

Table 4. Unit Root Tests

VARIABLES	Levin, Lin & Chu Stat (Prob.)	Im, Pesaran& Shin (Prob.)	Augmented Dickie-Fuller (ADF) (Prob.)	Phillips-Perron (Prob.)	Integration Level
LN_ROA	-17.3650** (0.0000)	-5.61010** (0.0000)	128.228** (0.0000)	136.681** (0.0000)	I(0)
LN_LQ1	-49.9088** (0.0000)	-18.7008** (0.0000)	205.654** (0.0000)	200.768** (0.0000)	I(0)
LN_LQ2	-8.66064** (0.0000)	-2.86757** (0.0028)	100.490** (0.0002)	107.181** (0.0008)	I(0)
LN_TA	-6.52055** (0.0000)	1.53162 (0.9372)	67.6310 (0.2329)	76.5499 (0.0735)	I(0)

Notation;
D -First difference ** sig at 1% level Values in parenthesis are probability values

Panel Unit Root Test

In this research evaluation of stationarity of the variables in the model, unit root test most is applicable for unbalanced panels. Stationary means the variance mean, and autocorrelation of a variable does not change with time. From the table 4.above p-value in parentheses, ** denote rejection of null hypothesis at 1% significance respectively. All panel unit root tests have null hypothesis tests of non-stationary financial risk. It can be seen that the probability of Levin, Lin and Chu statistic for all the variables has a value < 0.01 which is significant at 1% level of significance hence usingLevin, Lin and Chu test (2002) it rejects the null of unit root this shows that the variables are stationery and has no unit root.Im, Pesaran and Shin unit root test (2003),Augmented Dickie-Fuller ADF-Fisher Chi-square (1999), Phillips-Perron-Fisher Chi square, (2000) were also implemented most confirm stationary data hence no unit test except for natural logarithm of assets.
Im, Pesaran and Shin unit root test , Augmented Dickie-Fuller ADF-Fisher Chi-square andPhillips-Perron PP unit root tests both fails to reject natural logarithm total assets (Ln_TA) at both 1% and 5% level respectively. Due to presence of unit root as shown by the above data, first difference treatment was implemented on the data to be used in this thesis as illustrated table 4.5. Ali (2015) researched on effect of credit risk on management on financial performance of the Jordan commercial banks. Thirteen commercial banks have been chosen to express on the whole Jordanian commercial banks. Credit risk indicators used in the research were capital adequacy, non-performing loan to gross loans, credit interest to credit facilities, and leverage ratio. Performance was measured by return on assets and return on equity. In this research stationarity were tested using Augumented Dickey fuller test on the first difference the results indicated rejection of unit root null hypothesis of stationarity

Table 5: Unit Root Tests for First Difference

VARIABLES	Levin, Lin & Chu Stat (Prob.)	Im, Pesaran& Shin (Prob.)	Augmented Dickie-Fuller (ADF) (Prob.)	Phillips-Perron (Prob.)	Integration Level
DROA	-18.9620** (0.0000)	-8.10319** (0.0000)	182.205** (0.0000)	258.141** (0.0000)	I(1)
DLQ1	-44.1169** (0.0000)	-15.8540** (0.0000)	245.221** (0.0000)	298.917** (0.0000)	I(1)
DLQ2	-15.4858** (0.0000)	-7.98110** (0.0000)	193.089** (0.0000)	274.920** (0.0000)	I(1)
DTA	-19.9461** (0.000)	-7.68182** (0.0000)	173.821** (0.0000)	202.289** (0.0000)	I(1)

D-First difference ** sig at 1% level Values in parenthesis are probability

From the table 5 above after the first difference both Levin, Lin and Chu test (2002) and Phillips-Perron(2000) Im, Pesaran and Shin unit root test (2003), Augmented Dickie-Fuller ADF-Fisher Chi-square rejects the null of unit root this shows that all variables are stationery and has no unit root.

XI. Regression Results

This section presents the results for multiple regression analysis the first being financial performances represented by return on assets and return on equity against financial risks together followed by second with size of the bank as a control variable. Random and fixed effects model was used. In this research the natural logarithms of the actual values of the variables to deal with the problem of large numbers and eliminate Heteroscedasticity were calculated using the e-views software.

XII. Hausman Test

The Hausman test statistic is a transformation of difference between the parameter estimates from fixed effects and random effects estimation that becomes asymptotically χ2chi- square distributed under null hypothesis. The basic idea for this test is that under the null hypothesis of orthogonality both OLS and GLS are consistent while under alternate hypothesis is not consistent. For this research, the values were then differenced (1st difference) to ensure the data is stationary but before regression, a Hausman test was used to determine whether to use the fixed effects or random effects model to address objectives of this study.

Table 1: Correlated Random Effects - Hausman Test

	Return on assets (DROA)
Chi-Sq. Statistic	7.965
Prob.	0.538

From the table 4.6 The Hausman test is distributed as chi-square with 1 degree of freedom. From the table Return on assets (DROA) show the probability of the cross section random effects is 0.538 which is greater than 0.05 this shows that it's appropriate to adopt random effect model as compared to fixed effects model.

Table 7 regression of variables

Dependent Variable: DROA				
Method: Panel EGLS (Cross-section random effects)				
Date: 03/07/17 Time: 11:49				
Sample (adjusted): 2007 2015				
Periods included: 9				
Cross-sections included: 30				
Total panel (unbalanced) observations: 251				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLQ1	0.451822	0.193305	2.337351	0.0202
DLQ2	-0.294881	0.182674	-1.614249	0.1077
C	0.029085	0.031984	0.909386	0.3640
	Weighted Statistics			
R-squared	0.030655	Mean dependent var		0.038635
Adjusted R-squared	0.022838	S.D. dependent var		0.496043
S.E. of regression	0.490346	Sum squared resid		59.62898
F-statistic	3.921455	Durbin-Watson stat		2.318165
Prob(F-statistic)	0.021053			
	Unweighted Statistics			
R-squared	0.030655	Mean dependent var		0.038635
Sum squared resid	59.62898	Durbin-Watson stat		2.318165

From the table above 7 the model is significant at 5% level as the probability value is 0.021 which less than 0.05 this shows that the model is stable. The Durbin- Watson value is 2.3029 indicating that there is no autocorrelation problem. The value of R-squared was 0.0307 showing that liquidity risk indicators explain 3.07% variance in performance indicator return on assets.

Liquid assets to total assets ratio (DLQ1) had a coefficient of 0.452 with a p value of 0.0202 which is significant at 5% level this means that as liquidity risk increases performance will increase. In a similar research liquidity risk was significant and positively related to a net interest margins a measure of performance for European countries (Chortareas, Girardone &Ventouri, 2011). Liquid asset to total deposit ratio (DLQ2) had a coefficient of -0.2949 thus a negative relationship to performance proxy return on assets (DROA) the p value was 0.108 which means that it's not significant at 5% level thus Liquid asset to total deposit ratio as measure of liquidity risk is not significant and does not affect performance. Ongore and Kusa (2013) research on the relationship between liquidity risk and profitability for Kenyan banks in the period 2008-2011 was insignificant.

Table 8 Regression of Return on Assets and Liquidity Risk Proxies

Regression results with bank size as a control variable

Dependent Variable: DROA				
Method: Panel EGLS (Cross-section random effects)				
Date: 05/31/17 Time: 19:58				
Sample (adjusted): 2007 2015				
Periods included: 9				
Cross-sections included: 30				
Total panel (unbalanced) observations: 251				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLQ1	0.422379	0.195528	2.160203	0.0317
DLQ2	-0.272000	0.184092	-1.477523	0.1408
DTA	-0.157998	0.158292	-0.998146	0.3192
C	0.054985	0.041184	1.335129	0.1831
	Effects Specification			
			S.D.	Rho
Cross-section random			0.000000	0.0000
Idiosyncratic random			0.501951	1.0000
	Weighted Statistics			
R-squared	0.034736	Mean dependent var		0.038635
Adjusted R-squared	0.023012	S.D. dependent var		0.496043
S.E. of regression	0.490303	Sum squared resid		59.37796
F-statistic	2.962834	Durbin-Watson stat		2.307478
Prob(F-statistic)	0.032808			
	Unweighted Statistics			
R-squared	0.034736	Mean dependent var		0.038635
Sum squared resid	59.37796	Durbin-Watson stat		2.307478

From the table above 4.8 the model is significant at 5% level as the probability value is 0.035 which less than 0.05. The Durbin- Watson value is 2.3075 indicating that there is no autocorrelation problem. The value of R-squared was 0.033 showing that liquidity risk indicators explain 3.3% variance in performance indicator return on assets. Liquid assets to total assets ratio (DLQ1) had a coefficient of 0.4224 with a p value of 0.0317 which is significant at 5% level this means bank managers should consider the ratio Liquid assets to total assets as it has positive bearing on performance of banks. Liquid asset to total deposit ratio (DLQ2) had a coefficient of -0.272 thus a negative relationship to performance proxy return on assets (DROA) the p value was 0.1408 which means that it's not significant at 5% level. Thus there has been no change on the significance of the two variables of liquidity measures when banks size is included in the model as a control variable and also the variable for bank size (DTA) is not significant. It can be concluded that bank size has no control effects on the performance of commercial banks in Kenya.

XIII. Conclusion and Recommendation.

The results for panel data correlation values for liquid assets to total assets (DLQ1) and liquid assets to total deposits (DLQ2) were very low this indicated that there is no multicolinearity in the values of liquidity risk. The regression results for return on assets (DROA) with the measures of liquidity risk that liquid assets to total deposits (DLQ2) was not significant in the optimal equation. Liquidity held by commercial banks depicts their ability to fund increases in assets and meet obligations as they fall due. Liquidity is one of the important

financial stability indicators since liquidity shortfall in one bank can cause systemic crisis in the banking sector due to their interconnected operations. The liquidity risk for commercial banks in Kenya was significant this could be attributed to increase in liquidity of commercial banks in Kenya as per central bank regulations. This indicates that high level of liquidity may earn high profits. Thus policy makers should target providing sufficient liquidity through open markets other than lending to individual banks. Commercial banks should invest excess cash in productive assets. This ensures that they do not hold excess cash at the expense of fixed assets that can improve profitability. Banks should regularly gauge their capacity to raise funds quickly from each source. Banks should identify the main factors that affect their ability to acquire funds and monitor the factors closely so as to ensure that sound liquidity. Banks supervisors should have a supervisory framework to enable them make assessments of banks' liquidity risk management and adequacy of their liquidity, in both normal times and periods of stress

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