AN ASSESSMENT OF EFFECT OF LIQUIDITY MANAGEMENT ON THE RETURN ON ASSETS OF INSURANCE COMPANIES IN NIGERIA

OLOWOKUDEJO, Folake Funmilayo[a] and AJIJOLA, Lukman Abolaji[b]
[a,b]Department of Actuarial Science and Insurance, Faculty of Management Sciences, University of Lagos, Lagos, Nigeria
Corresponding author: [a]folowokudejo@unilag.edu.ng

Abstract

Fundamentally, the liquidity management in the insurance industry entails managing organizational funds in a way that the company is able to maintain sufficiently adequate (but not excessive) cash meet their financial commitment to their customers, shareholders and other stakeholders as when due. To this end, the purpose of this research work is to assess the effect of liquidity management on the return on assets of insurance companies in Nigeria. The study is anchored on Shiftability and Liability Management Theory and ex-post facto research design is adopted. The Current ratio (CUR), Total Sales (TSL), and Leverage ratio (LER) were computed from nine years (2011- 2019) data sourced from the annual reports and accounts of various insurance companies quoted on the Nigerian Stock Exchange. The study employed panel regression analysis of ordinary least square (OLS) estimation technique in analysing the data obtained while return on assets (ROA) is used as dependent variable to measure financial performance. Major findings from the study show that the total sales, degree of leverage, and liquidity ratio exert a significant positive effect on return on assets. This has demonstrated that total sales, leverage, and liquidity have a long-term goal. Therefore, it becomes important for insurance companies to avoid sales and profit fluctuations risks as well as any other form of liquidity risk by operating in excess of the break-even point. It is recommended therefore that the insurance industry should avail itself with maximum benefit of economies of scale and also bring to the barest minimum the cost associated with expansion. The industry should focus on improving the return on assets by considering other quantitatively and qualitatively.

Keywords: Liquidity Management, Return on Assets, Current Ratios, Total Sales and Leverage Ratios

1. INTRODUCTION

According to Adalsteinsson, (2014), liquidity can generally be described as the capability to adequately generate cash to settle financial obligations and honour claims. Liquidity is also the ability to meet obligations as they come due and finance increases in assets, without necessarily suffering undesirable losses. Choudhry (2011) define liquidity management as "*funding of deficits and investment of surpluses, managing and growing the balance sheet, as well as ensuring operation within regulatory and stipulated limits"*.

Within its limits, the management of insurance companies performs a significant function of promoting economic and infrastructural concerns of all parties who have primary or secondary interest in the insurance company in order to achieve high financial performance level. Banks, (2014) describe an incessant effort of guaranteeing that a balance occurs between risk, profitability and liquidity as an ideal management for optimum financial performance. However, despite the importance of profit in the operations and solvency of insurance companies, the financial performance of most Nigeria insurance firms have not been explore by researchers in the area of finance. Since large share of insurance companies' claims are payable on demand, they also required high liquidity just like banks.

Fundamentally, managing liquidity required availability of funds to meet any financial commitment as well as ensuring cash availability in order to fulfil those commitments as when due by insurance firms. They perform this by adjusting different streams of incomes obtainable to the business under standard and emphasized situations. It banks on the regular evaluation of the state of liquidity in the firm's scheme, to manage its required liquidity as well as the liquidity size to distribute from the market (Wisdom, Obiajulu, Sandra, Eze, and Oluwatobi 2021), thus liquidity is the lifeblood of an insurance operation (Ismail 2016). Notwithstanding, not much study can be found on liquidity in the insurance sector hence the need for this study.

Accomplishing anticipated compromise between liquidity and financial performance could be bewildered by poor liquidity management (Yaacob, Rahman, and Karim 2016). Regrettably, most organizations focus more on profitability maximization to the detriment of efficient liquid asset management. The belief that financial performance and liquidity are mutually exclusive is their justification for adopting this method. Hence, a firm is at the mercy of adopting one method while foregoing the other, in line with liquidity and financial performance trade-off theory. In contrast, Padachi (2006) suggested that a company is expected to sustain an equilibrium between liquidity and financial performance while managing its everyday transactions because incompetent and excess liquidity quickly affect financial performance (Ogundipe, Idowu, and Ogundipe 2012).

Many researchers measured profitability by using Return on Assets (ROA) to examine features like liquidity and leverage on firms' performance (Mahfoudh 2013). In his own work, Almajali (2012) posited that liquidity and leverage risk may hinder firms' performance. Also, Zulkipli, Abdullah, and Kamaluddin (2019) concluded that the connexion amid liquidity management on financial performance is significant. Chesang (2017) used financials of some selected firms to discovered that operations of agricultural firms in Nigeria are significantly being affected by their debt-to-equity ratio and the current ratio. These liquidity provisions of a firm depend on their

unique characteristics. In addition, there is no special regulation on arranging the optimal level of liquidity that a firm can control to guarantee an optimistic effect on its viability. Several measures of financial performance include Return on Investment (ROI), Return on Equity (ROE), and Return on Assets (ROA) (Fatihudin & Mochklas,2018). Therefore, by using return on assets as a measure of profitability in this study, we aim to examine the impact of liquidity management (current ratio, total sales and leverage ratio) on return on assets on selected Nigerian insurance companies listed on the Nigerian Stock Exchange (NSE).

2. LITERATURE REVIEW

Waswa, Mukras, and Oima (2018) define "*liquidity as the capacity of a financial firm to meet its debt commitments without acquiring unacceptably large damages"*. Ahmad (2016) defines "*liquidity as the extent to which an asset or security can be instantly purchased or traded in the market without changing the asset's price"*. Liquidity pertains to the cost of equity capital, which can be applied to satisfy short-term debts. It is the rate at which an asset can be traded and still obtain a fair value (Biety,2003). Liquidity though focused on short-term commitments is important since the optimal capital structure of an object is achieved by considering both short term and long-term demands of investment.

The concept of liquidity comprises the current ratio, Quick ratio, cash ratio, and networking capital to total assets ratio (Setiawan, Abu-Rumman, Cavaliere, Pachala, Khan and Sankaran 2020). The measurements of the liquidity concept speculate the dimensions of management performance in terms of the degree to which management can maintain working capital financed from the contemporary claim and the company's cash surplus (Batubara 2018). Current liquidity is the aggregate money and independent resources associated with net obligations and yield reinsurance dividends obligatory. Current liquidity is revealed as a rate that determines the number of an insurance firm's obligations that can be included with liquid assets. The current ratio can be estimated using current assets apportioned by current debt. Current debts constitute commerce outstanding, notes outstanding, salary arrears, tax obligatory, long-term obligations due that are outstanding (Hayati, Saragih and Siregar, 2020). Nevertheless, liquidity risk management is necessary for insurance as it ensures appropriately gauging the price of liquidity thus preventing assets and liability mismatch which could lead to cash flow crises in the organization.

According to Mutuku, (2016), the significant positive effect of managing liquidity could be viewed while managing funds in a better way as well as decreasing costs that are needless which includes tentative development. Other studies support a negative relationship carried out in Kenya by Muteti, (2014); Juma and Atheru, (2018); India by Oudat and Ali (2021). The negative relationship discovered in these various studies amounted to under leverage and risk-taking since liquidity management gets secured thereby reducing financial performance in insurance companies.

The financial performance of any organisation depends on the ability of its management to efficiently allocate and distribute resources (Ramlan, 2020). Firms have challenging arrangements to make between financial performance and liquidity management which exposed them to liquidity risks and challenges that could reduce financial performance (Dilpreet, 2018). In the interim, Sumani and Roziq (2020) investigated how performance of 182 listed manufacturing Indonesia companies is being affected by their capital structure and liquidity. They concluded that while

liquidity policy has little or no effect on financial performance, capital structure has a significantly negative effect on the performance of those firms.

3. MATERIAL AND METHODS

The ex-post facto research design was adopted in carrying out this study. The population of study consist of the entire insurance firms in Nigeria since most insurance companies in Nigeria are directly or indirectly involved in liquidity management. Time series data is obtained for Liquidity Ratio/Current Ratio, Total Assets, and Leverage Ratio in Nigeria between 2011 and 2019. These data are sourced from the annual financial reports of purposively selected from seven quoted insurance companies on the NSE. These seven firms were selected based on their robust and complete financial annual reports and corporate governance compliance. These firms comprise AIICO insurance, AXA Mansard Insurance, Consolidated Hallmark Insurance, Cornerstone insurance, Mutual Benefit Insurance, NEM insurance, and Wapic Insurance. Diagnostic tests were conducted to support the validity of the panel regression results.

3.1. Model Specification

To examine the hypothesis stated above, we specify a model to scrutinise liquidity management and financial performance of insurance companies in Nigeria. A study of the various channels of the liquidity ratios helps in understanding how the liquidity management in insurance companies affect return on assets. Therefore, determinants of the variables as well as the control variables are firm size, and leverage. return on assets (ROA) were used as proxy for financial performance while Current ratio (CUR), Total Sales (TSL), and Leverage ratio (LER) are used as the independent variables as shown in 3.1;

$$ROA = f(CUR, TSL, LER) \quad (3.1)$$

The estimated regression equation based on the above functional relation is:

$$ROA = \alpha + \beta_1 CUR + \beta_2 TSL + \beta_3 LER + \varepsilon \quad (3.2)$$

Where;

$$ROA = Return\ on\ Assets = \frac{Net\ Income}{Total\ Assets}$$

$$CUR = Current\ Ratio = \frac{Current\ Liabilities}{Current\ Assets}$$

$$TSL = Total\ Sales\ (number\ of\ units\ sold \times profit\ (not\ price)\ per\ unit)$$

$$LER = Leverage\ Ratio = \frac{Long - term\ Debt\ divided}{Total\ Assets}$$

β_1, β_2, β_3, are the coefficients of variables.
α = Constant.
ε = Error term.

The study used descriptive statistics, correlation matrix, normality test, fixed and random effect panel data regression, and the Hausman test as its estimation techniques with data throughout 2011 – 2019 for the seven insurance companies under consideration

4. DATA PRESENTATION AND ANALYSIS

Table 4.1. exhibits the descriptive statistics on the variables and figure 4.1 demonstrate the trends of the variables across the research period. The basic features of the secondary data used in the study are presented in Table 4.1. The mean, of the ROA, LER, CUR, and TSL were found to be -0.005714, 0.562222, 1.860952, and 16.54127 respectively. The Table further shown the median and standard deviation of other variables used in the study. The Jarque-Bera statistics and the reported probability of the ROA ($p = 0.00 < 0.05$), and CUR ($p = 0.00 < 0.05$) are less than 5% demonstrate that the time series are normally distributed. However, the Jarque-Bera statistics and probability of LER ($p = 0.25 > 0.05$) and TSL ($p = 0.15 > 0.05$) are not normally distributed ($p > 0.05$). The table also demonstrated other statistics of the data.

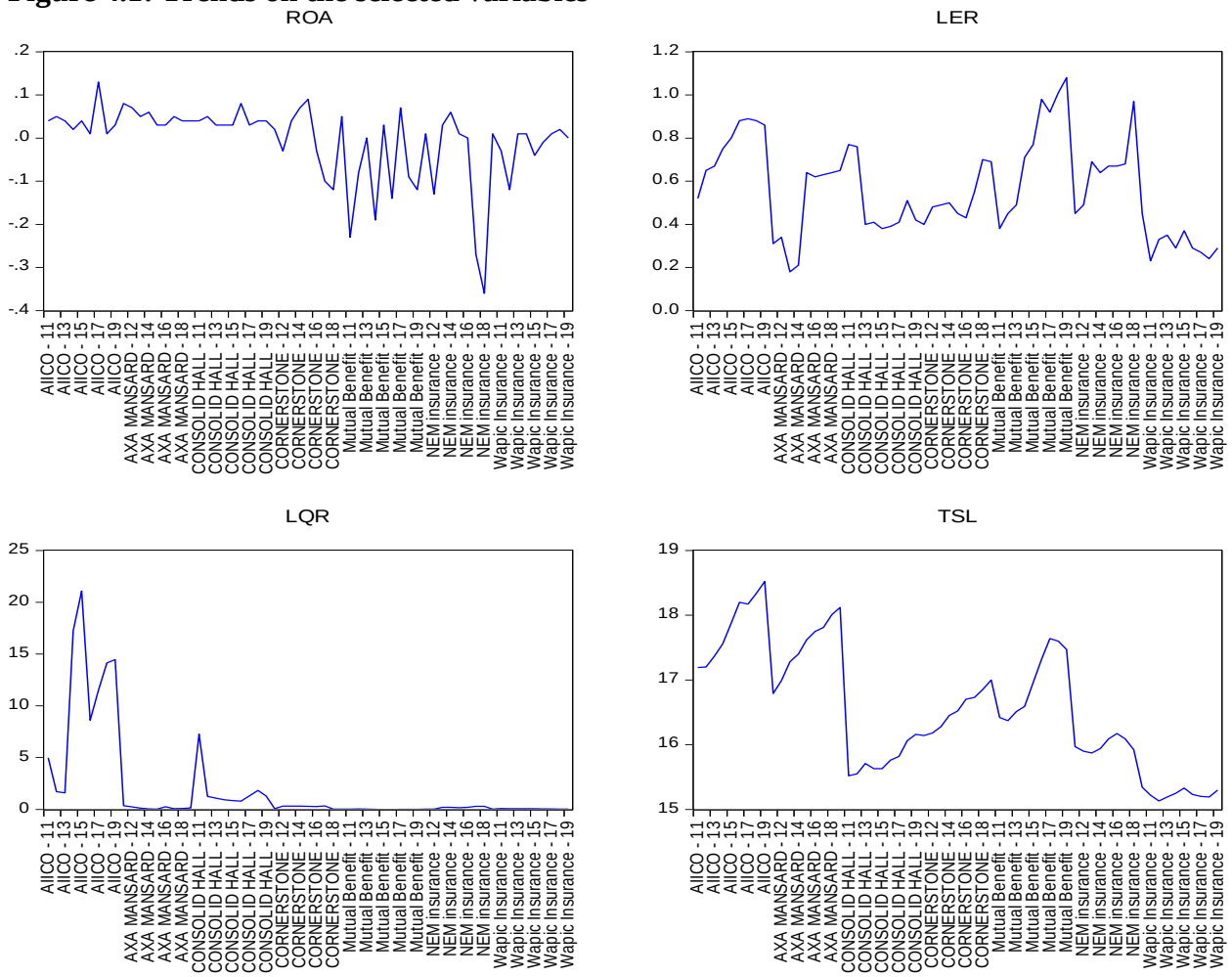
The objectives of the study which also corresponds to the research question were to examine the effect of current/liquidity ratio, total sales, leverage ratio on the return on assets of insurance companies in Nigeria. Analysis of the corresponding research questions in line with the above-stated objectives appear in graphical form as presented in the figure 4.1 below.

Table 4.1: Descriptive Statistics of the Variables

	ROA	LER	CUR	TSL
Mean	-0.005714	0.562222	1.860952	16.54127
Median	0.030000	0.510000	0.200000	16.42000
Maximum	0.130000	1.080000	21.08000	18.52000
Minimum	-0.360000	0.180000	0.000000	15.13000
Std. Dev.	0.089329	0.222576	4.461754	0.963057
Skewness	-1.881650	0.365980	2.878564	0.278817
Kurtosis	6.775942	2.281175	10.43284	1.944783
Jarque-Bera	74.60292	2.762744	232.0279	3.739150
Probability	0.000000	0.251234	0.000000	0.154189
Sum	-0.360000	35.42000	117.2400	1042.100
Sum Sq. Dev.	0.494743	3.071489	1234.249	57.50370
Observations	63	63	63	63

Source: Computed with E-view 9.0

Figure 4.1: Trends on the selected variables



4.2. Regression Analysis

The result of the panel regression analysis based on the pool, fixed and random effects techniques are presented in the table 4.2 below.

4.2.1. Panel Data Regression Analysis

Panel data can be defined as a process of studying multiple firms, individuals or entities phenomena that were gathered at different time (time series). It is a statistical method widely used in different disciplines. We specify a simple panel data regression as follow:

$$Y_{it} = a + bX_{it} + \varepsilon_{it}$$

$Y =$ Dependent variable: (ROA) as in this study
$X =$ Explanatory/Independent variables
$a =$ Constant
$b =$ Coefficients/Slope
$i, t =$ indications for individuals and time
$\varepsilon =$ error term

Table 4.2: Pooled Effect, Fixed Effect and Random Effect Models.

Dependent Variable: ROA					
Pooled Effect Model					
Variable	Coefficients	Std. Error	t-Statistic	Prob.	R-squared
C	0.913	0.298	3.06	0.0001	0.85
TSL	1.081	0.045	24.02	0.000	
LER	0.372	0.176	13.1	0.000	
CUR	1.351	0.34	3.97	0.000	
Fixed Effect Model					
C	1.672	1.561	1.07	0.06	0.82
TSL	1.715	0.211	8.13	0.000	
LER	1.627	0.141	6.74	0.000	
CUR	0.486	0.183	2.66	0.000	
Random Effect Model					
C	1.481	0.133	11.135	0.000	0.93
TSL	1.497	0.216	3.97	0.000	
LER	1.473	0.327	4.85	0.000	
CUR	1.476	0.511	2.88	0.020	

Source: Authors Computation by EViews 9.0., 2022

4.2.1.1. Results and Findings of Pooled Effects Model

Under this type of panel data analysis, there is assumption of homogeneity to all sections of data or ensuring that treatments to all sections in panel data are the same. Table 4.2 shows analysis of the pooled regression test. This analysis neglects the cross section and time series nature of the data, hence not considering the individuality. It is useful to examine the prediction of return on assets by the liquidity management variables by combining insurance companies as one assuming they are the same. Analysis on the table shows that for Total Sales (TSL), $p - value = 0.0000 < 0.05$, for Leverage (LEV), $p - value = 0.0000 < 0.05$ and for Current/Liquidity ratio (CUR), $p - value = 0.0000$. This implies that based on the assumption of individuality of this model, all the variables explain return on assets of insurance companies in Nigeria. However, because this model ignores individuality amongst the insurance companies, it implies that the heterogeneity or individuality that exists amongst the studied insurance companies cannot be denied.

4.2.1.2. Result of Findings of Fixed Effects Model

Unlike fixed effect model, this model allows each cross-section to have its own intercept i.e., it gives room for heterogeneity or individuality among different cross-sections. Table 4.2. shows analysis of the fixed regression test. It is useful to examine the prediction of return on assets by the liquidity management variables by combining insurance companies as one assuming they are the same. Analysis on the table shows that for Total Sales (TSL), $p - value = 0.0000 < 0.05$, for Leverage (LER), $p - value = 0.0000 < 0.05$ and Current/Liquidity (CUR), $p - value$ 0.0000. This implies that based on the assumption of this model that individuality amongst

the insurance companies and allowing heterogeneity Total Sales (TSL), Leverage (LER), and Current/Liquidity (CUR) are significant for explanation of return on assets.

4.2.1.3. Results and Finding of Random effects model

Also known as the variance components model, the random effect model just like fixed effect model permits heterogeneity and time invariant, however there is no correlation between the individual specific effect and the independent variables. The results from the Table 4.2 shows that for Total Sales (TSL), $p-value = 0.0000 < 0.05$, for Leverage (LER), $p\,value = 0.0000 < 0.05$ and Current/Liquidity (CUR), $p-value\ 0.0000$. This implies that based on the assumption of this model of individuality amongst the insurance companies and allowing heterogeneity Total Sales (TSL), Leverage (LER), and Current/Liquidity (CUR) are significant for explanation of return on assets.

4.3. Hausman Test for Panel Least Square

To ascertain which of the techniques best predict the association between the dependent variables, Hausman Test was employed. The Hausman test can assist in process of selecting best model in between fixed-effects model or random-effects model by stating random effects model as the null hypothesis. The test enables the researcher to see if the unique errors and the regressors in the model are correlated. However, the null hypothesis between the two is that there is no correlation between them. The results of the Hausman test are presented in Table 4.3 below

Table 4.5 revealed that the fixed effect model is preferred relative to random effect as suggested by Hausman specification test result in view of the fact that the estimated chi-square $(29.39, p < 0.05)$ is positive and significant which means that there are statistically significant differences between the estimated coefficients of both models which culminates in the rejection of the null hypothesis that there are no differences in their coefficients (Gujarati and Porter, 2009). Because the $p-value$ is small (less than 0.05), then reject the null hypotheses and we accept the alternate hypotheses which means there is a significant relationship between TSL, LER, CUR and ROA in Nigerian Insurance Companies.

Table 4.5: Hausman Test for Panel Least Square
Correlated Random Effects - Hausman Test
Equation: RANDOM
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	29.386152	7	0.0000

Source: Authors Computation by EViews 9.0., 2021

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TSL	3.600000	3.17E-16	1.14E+16	0.0000
LER	-3.54E-16	5.10E-18	-69.53288	0.0000
CUR	1.75E-14	1.75E-16	99.47756	0.0000
C	0.648000	6.73E-17	9.63E+15	0.0000
Effects Specification				
			S.D.	Rho
Cross-section fixed (dummy variables)				
Period random			0.000000	0.0000
Idiosyncratic random			4.59E-17	1.0000
Weighted Statistics				
R-squared	0.681636	Mean dependent var		0.764622
Adjusted R-squared	0.679163	S.D. dependent var		0.094891
S.E. of regression	1.74E-15	Sum squared resid		9.64E-29
F-statistic	1.66E+28	Durbin-Watson stat		1.617531
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	1.000000	Mean dependent var		0.764622
Sum squared resid	9.64E-29	Durbin-Watson stat		1.617531

Source: Authors Computation by EViews 9.0., 2022

4.6. Discussion of Findings

1. The outcomes of the research suggest that the impact of current/liquidity ratio (CUR) on the return on assets (ROA) of listed companies on NSE is immensely significant. These findings conform with finding of authors like Alshatti (2015), Duruechi, Ojiegbe and Otiwu (2016), Ahmad (2016) and Edem (2017).

2. The finding of the study indicates a significant positive influence of total assets (TSL) on the return of assets of quoted insurance companies on the NSE. This result is consistent with the findings of Nzioka (2013), Abondo (2013), Dogan (2013), Ngumo, Collins, and David (2017), Akinyomi and Olagunju (2013), and Obigbemi et al. (2015). In contrast, the finding contradicts the findings of Olawale et al. (2017), Mohamed (2015) and others. The research further provides statistical evidence to suggest that total assets have a significant effect on the return on assets (ROA) of insurance companies listed on the Nigerian stock exchange.
3. In addition, the regression result under the random effect shows that leverage has a significant positive effect on the return on assets of insurance companies quoted on the Nigerian stock exchange. This further corroborate that the higher the debt in the overall financial structure of an insurance company, the higher the liquidity. Nevertheless, the conclusion is in alignment with the result attained by Adenugba, Ige, and Kesinro (2016). In contrast, some previous research have found different results (Sarlija and Harc 2012; Oduol 2011).

5. CONCLUSION AND RECOMMENDATIONS

This research analysed the effect of liquidity management using the panel regression technique to analyse data of seven (7) quoted insurance companies in Nigeria from 2011 to 2019. The study's findings revealed that total sales, current ratio, and leverage ratio have a significant positive joint effect on the return on assets of insurance companies in Nigeria. Besides, it was observed that the total sales, degree of leverage, and current ratio exert a significant positive effect on return on assets. Conceivably, this inspiration must have reflected the fact that total sales, leverage, and current ratio have a long-term goal. Therefore, it becomes important for insurance companies to guide against insolvency and danger of fluctuations in sales and profits by performing their operation above break-even point. The return on insurance companies' assets directly influences the country's economy therefore the factors affecting firm's return on assets deserves special attention. It can be easily said that there are lots of factors that can have an impact on the return on assets of insurance companies in Nigeria. Among these factors are total sales, current ratio, and leverage ratio which have been considered as an important determinant of the ROA. According to the results, both in terms of total sales and in terms of current (liquidity) and leverage ratio, has a positive effect on the return on assets of the quoted Nigerian insurance companies.

Following the above conclusions, we recommend that the insurance industry avail itself maximally with benefit of economic of scales and bring to the barest minimum the cost related with expansion. In addition, the industry should consider other factors that will improve ROA quantitatively and qualitatively.

References

Abondo, O. C. (2013). The Effect of size on the financial performance of deposit taking micro finance institutions and commercial banks in Kenya. *Interdisciplinary Journal of Contemporary Research in Business, 1*(1), 25-32.

Adalsteinsson, G. (2014). The Liquidity Risk Management Guide: From policy to pitfalls. Sussex: John Wiley and Sons.

Adenugba, A. A., Ige, A. A., & Kesinro, O. R. (2016). Financial leverage and firms' value: A study of selected firms in Nigeria. *European Journal of Research and Reflection in Management Sciences, 4*(1), 14-32.

Ahmad, B. R. (2016). A study of relationship between liquidity and profitability of standard chartered bank Pakistan: Analysis of financial statement approach. *Global Journal of Management and Business Research*. *16*(1), 77-82.

Akinyomi, O. J. and Olagunju, A. (2013). Effect of firm size on profitability: Evidence from Nigerian manufacturing sector. *Prime Journal of Business Administration and Management, 3*(9): 1171-75.

Almajali, A. Y., Alamro, S. A., & Al-Soub, Y. Z. (2012). Factors affecting the financial performance of Jordanian insurance companies listed at Amman Stock Exchange. *Journal of Management research, 4*(2), 266.

Alshatti, S., (2014). The Effect of the Liquidity Management on Profitability in the Jordanian Commercial Banks, *International Journal of Business and Management; 10*, (1); 201

Batubara, H. C. (2018). Influence of Current Ratio, Inventory Turnover, and Debt to Equity Ratio to Return on Assets on the Company's Property that are Listed in the Indonesia Stock Exchange. In *International Conference of ASEAN Perspective and Policy (ICAP)* 1, (1), 75-80.

Biety, M. M. (2003). An introduction to liquidity and assets liability management. *Operational guidelines for the development and early stages of credit union operation*.

Chesang, D. (2017). Effect of financial leverage on profitability of listed agricultural firms at the Nairobi securities exchange (Doctoral dissertation, Kisii University).

Choudhry, M. (2011). An Introduction to Banking: Liquidity Risk and Asset and Liability Management. Sussex: John Wiley and Sons.

Dilpreet S. (2018). Study on Impact of Financial Leverage and Liquidity on Financial Performance: A Case Study on DLF Ltd.; Construction & Contracting- Real Estate Company in India. *International Journal of Research in Management, Economics and Commerce, 8*(1), 60-64

Doğan, M. (2013). Does firm size affect the firm profitability? Evidence from Turkey. *Research Journal of Finance and Accounting*, *4*(4), 53-59.

Duruechi, A. H., Ojiegbe, J. N., & Otiwu, K. C. (2016). Liquidity management measures and bank performance in Nigeria: An empirical analysis. *European Journal of Business and Management, 8*(17), 24-35.

Edem, D. B. (2017). Liquidity management and performance of deposit money banks in Nigeria (1986–2011): An investigation. *International Journal of Economics, Finance and Management Sciences, 5*(3), 146-161.

Fatihudin, Didin & Mochklas, Mochamad. (2018). How Measuring Financial Performance. *International Journal of Civil Engineering and Technology*. 9(6), pp. 553–557.

Hayati, I., Saragih, D. H., & Siregar, S. S. (2020, January). The Effect of Current Ratio, Debt to Equity Ratio and Roa On Stock Prices in Sharia Based Manufacturing Companies in

Indonesia Stock Exchange. In *Proceeding International Seminar of Islamic Studies* 1, (1), 276-290.

Ismail, R. (2016). Impact of liquidity management on profitability of Pakistani firms: A case of KSE-100 Index. *International Journal of Innovation and Applied Studies, 14*(2), 304.

Juma, A. M., & Atheru, G. (2018). Financial Risks Analysis and Performance of Commercial Banks in Kenya. *Journal of Finance and Accounting*, *2*(2), 76-95.

Mahfoudh, I. O. (2013). Effect of selected firm characteristics on financial performance of firms listed in the agricultural sector at the Nairobi securities exchange (Doctoral dissertation, University of Nairobi).

Mohamed, A. B. M. (2015). Determinants of bank liquidity: Case of Tunisia. *International Journal of Economics and Finance, 1*(5): 249-59.

Muteti, S. R. (2014). *Relationship between financial risk management and financial performance of commercial banks in Kenya* (Doctoral dissertation).

Mutuku, A. (2016). *The relationship between microfinance services on the growth of small and medium enterprises in Nairobi County* (Doctoral dissertation, University of Nairobi).

Ngumo, K., Collins, K. W. and David, S. H. (2017). Determinants of financial performance of microfinance banks in Kenya. *Research Journal of finance and Accounting, 8*(16): 1-8.

Nzioka, P. K. (2013). *The relationship between firm size and financial performance of commercial banks in Kenya* (Doctoral dissertation, University of Nairobi).

Obigbemi, I. F., Iyoha, F. O. & Ojeka, S. A. (2015). Firm Size and financial performance: A determinants of corporate governance disclosure practices of Nigerian companies. *Journal of Accounting and Auditing. Research and Practice*: Available: http://eprints.covenantuniversity.edu.ng/8498/#.W6rhrVQzbIU

Oduol, E. O. (2011). *The relationship between liquidity and leverage of companies quoted at the NSE* (Doctoral dissertation).

Ogundipe, S. E., Idowu, A., & Ogundipe, L. O. (2012). Working capital management, firms' performance and market valuation in Nigeria. *World Academy of Science, Engineering and Technology*, *61*(1), 1196-1200.

Olawale, L. S., Bamidele, M. and Lawal, F. K. (2017). The effect of firm size on performance of firms in Nigeria Aestivation. *The IEB International Journal of Finance*, *2*: 2-21.

Oudat, M. S., & Ali, B. J. (2021). The Underlying Effect of Risk Management on Banks' Financial Performance: An Analytical Study on Commercial and Investment Banking in Bahrain. *Ilkogretim Online*, *20*(5).

Padachi, K. (2006). Trends in working capital management and its impact on firms' performance: an analysis of Mauritian small manufacturing firms. *International Review of business research papers*, *2*(2), 45-58.

Ramlan, H. (2020). The Effect of Leverage and Liquidity on the Companies' Performance. *Global Business & Management Research*, *12*(4).

Sarlija, N. & Harc, M. (2012). The impact of liquidity on the capital structure: A case study of Croatian firms. *Business Systems Research*, 3 (1), 30 – 36.

Sumani, S., & Roziq, A. (2020). Reciprocal Capital Structure and Liquidity Policy: Implementation of Corporate Governance toward Corporate Performance. The Journal of Asian Finance, Economics, and Business, 7(9), 85-93.

Waswa, C. W., Mukras, M. S., & Oima, D. (2018). Effect of liquidity on financial performance of the Sugar Industry in Kenya.

Wisdom, O., Obiajulu, O., Sandra, E., Eze, E., & Oluwatobi, R. (2021). Liquidity management: implications for the financial performance of deposit money banks (DMBs) in Nigeria. *Journal of Asian Business Strategy*, *11*(1), 24-32.

Yaacob, S. F., Rahman, A. A., & Karim, Z. A. (2016). The determinants of liquidity risk: A panel study of Islamic banks in Malaysia. *Journal of Contemporary Issues and Thought*, *6*, 73-82.

Zulkipli, M. A., Abdullah, N. A. I. N., & Kamaluddin, A. (2019). The Relationship Between Financial Leverage and Liquidity, And Firms' profitability of the Agricultural Industry: Evidence from Malaysian Listed Firms. *Asia-Pacific Management Accounting Journal*, *14*(3), 203-221.