INFLUENCE OF LIQUIDITY RISK ON FINANCIAL PERFORMANCE OF AGRICULTURAL FIRMS LISTED ON NAIROBI SECURITIES EXCHANGE IN KENYA

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ABSTRACT

The agricultural sector is unstable due to risk of returns compared with other sectors like the services, commercial, industrial and allied sectors which have modest risk and investment and finance sector which have the least comparative risk among all the sectors. Further, out of the six listed agricultural firms studied, three of them indicated poor performance within the financial period 2014 to 2018 and one firm was delisted from NSE. The objective of this study was to determine the influence of liquidity risk on financial performance of agricultural firms listed on the Nairobi Securities Exchange in Kenya. Longitudinal research design was used in this study. The study took the entire population of the six listed firms using census technique. The secondary data was collected from audited financial records of agricultural companies listed for a ten year period. Panel data was analyzed using inferential statistics which involved testing of hypotheses. Inferential analysis involved multiple linear regression analysis and correlation analysis. Descriptive analysis was also used which included mean and standard error. The data was presented in form of tables and models. The findings revealed that liquidity risk has negative insignificant influence on performance. The study recommended that managers of listed agricultural firms should avoid holding too much liquid assets as highly liquid assets are associated with lower returns than risky assets.

Key Words; Liquidity Risk, Financial Performance, Listed Agricultural Firms

INTRODUCTION

Firms face different kind of risks in their daily operations and the manner in which they deal with them greatly influences their performance. Risk in financial terms is usually defined as the probability that the actual return may differ from the expected return. According to Dimitropoulos, Asteriou and Koumanakos (2000) liquidity risk involves the failure of the organization to decrease its liabilities and increment its assets. It quantifies the capacity of the firm to meet its mature financial commitments as and when they occur. Liquidity risk of any company is estimated by the proportion of the total liquid assets to the total deposit.

According to Akenga (2015) liquidity is considered as the capacity of the organization to meet its both short term and long tern commitments as and when occur. The commitments of the firm may include accidents, contingencies, unforeseen emergencies as well as fulfilling daily operation costs. The significance of liquidity is best observed by considering repercussions originating from the organization's inability to meet financial commitments. Absence of liquidity keeps an organization from exploiting profitable opportunities and favorable discounts. Extraordinary liquidity issues mirror an organization's failure to fulfill current commitments. This can prompt compelled sale of assets and investments and, in its more extreme form, to indebtedness and insolvency. A company that is equipped for fulfilling its commitments as and when they fall due makes a decent picture with creditors as well as customers. To guarantee that a firm stays liquid, financial managers ought to build a suitable mix of asset and liability in that the total liabilities must not surpass the firm's total assets.

As indicated by Banafa (2016), cost of illiquidity and liquidity are considered in the maintenance of a specific degree of current assets. Extreme degree of current assets implies very high liquidity thus return on asset will be low as financial resources are tied up in the unutilized funds and nothing is earned from stock while abnormal state of debtors

diminish gainfulness. Accordingly, cost of liquidity through low paces of return increments with the degree of current resources. On the other hand, cost of illiquidity implies possessing inadequate current assets in which a firm is unable to honor its commitment compelling it to seek funds on short run with high rates of interest. This unfavorably influences a firm's credit value and may constrain future access to financial resources and conceivable bankruptcy. A firm in this way should adjust the expense of liquidity and cost of illiquidity at harmony.

In Kenya, agriculture based stocks are anticipated to keep slacking in performance at the Nairobi Securities Exchange (NSE) with majority of investor preferring fluid counters, whose business isn't influenced by factors like the climate that is not easy to control them. Data from the NSE investor handbook (2013) shows that shares of the seven quoted agriculture based firms; Limuru Tea, Eaagads, Kapchorua, Rea Vipingo , Kakuzi , Williamson Tea and Sasini have been lingering behind the rest of the market since the start of the year, while different stocks prices have been increasing gradually. Stocks of Kapchuroa Tea, Williamson Tea and Kakuzi have risen by 6.94%, 5% and 1.69% individually for the year 2012; Sasini Ltd and Eaagads stocks have dropped by 0.85% and 4% separately, while Limuru Tea's share price stayed unaltered. Comparatively, out of 25 of the 61 recorded NSE firms, there shares have increased in value by over 10%. Further, from NSE the investor's data center report 2018, Karuturi Ltd. was put into receivership back in the year 2014 due to liquidity. This was attributed by failure to pay a loan of Ksh. 383,000,000 that was borrowed from CFC Stanbic. The company continued to sink further in debt after it was placed under receivership leading to its closure and delisting from NSE in 2018.

Statement of the Problem

According to Kinyua, (2015) few investors are interested in agricultural stocks traded on NSE due to the high risk and dependence on favourable climate which is rather unpredictable. Agricultural

sector is majorly unstable to risk of returns compared with other sectors for instance the services and commercial sectors and the industrial and allied sectors which have modest risk and investment and finance sector having the least comparative risk among all the four sectors. Further, the sector has that deal with products which are weather sensitive yet the Kenyan market has exceptionally unpredictable climate conditions which reflect in the unpredictability of the profits of the firm in the agricultural sector. According to NSE investors' handbook (2018), financial review report showed that out of the six listed agricultural firms, three of them; Eaagads'; Limuru and Sasini indicated poor performance within the financial period 2014 to 2018. From NSE the investor's data center report 2018, Karuturi Ltd. was put into receivership back in the year 2014 due to liquidity. This was attributed by failure to pay a loan that was borrowed from CFC Stanbic. The company continued to sink further in debt after it was placed under receivership leading to its closure and delisting from NSE in 2018.

There is an inconsistency of research findings on whether liquidity risk influences financial performance. Studies have indicated that liquidity risk has a significant and negative influence on financial performance, (Gweyi, Olweny & Oloko 2018, Waswa, Mukras & Oima 2018, Mudanya & Muturi 2018, Yasser & Anna 2015). Others demonstrated that, liquidity risk is significantly positive to performance, (Odalo, Achoki & Njuguna 2016, Irungu 2019). Still other researches have proposed that no influence of liquidity on performance, (Lischewski & Voronkova 2012, Khalid, Rashed & Hossain 2019). Therefore, there is no consensus as to whether financial risk influence financial performance.

This study bridged the gap by conducting a research on agricultural firms listed at NSE for a longer period to cover periods of various trade cycles to adequately identify liquidity risk. Also, this study was necessitated by the contradicting findings of other researchers. The results can help agricultural firms, investors, policy makers and general academicians to have the knowledge and understanding of liquidity risk. This study therefore investigated the influence of liquidity risk on financial performance of agricultural firms listed on the NSE.

Research Objective

The objective of the study was to establish the influence of liquidity risk on financial performance of agricultural firms listed on Nairobi Securities Exchange.

The study was guided by the following research hypothesis

H_o: Liquidity risk has no significant influence on financial performance of agricultural firms listed on the NSE.

LITERATURE REVIEW

Portfolio Theory

The Markowitz portfolio theory (portfolio determination model) was created during the 1950s and this when the cutting edge hypothesis of speculation initiated. Markowitz utilized numerical programming and measurable investigation so as to organize the ideal assignment of benefits inside a portfolio. To arrive at this target, Markowitz created portfolios inside a reward chance setting. In so coordinating the center, Markowitz, and others, perceived the capacity of portfolio the executives as one of creation, and not singular security choice as it all the more normally rehearsed.

Markowitz (1965) presented the hypothesis in his paper 'Portfolio Selection' which was distributed in the Journal of Finance in 1952. The hypothesis proposes a theory based on which, expected profit for a portfolio for a given measure of portfolio hazard is endeavored to be amplified or then again the hazard on a given degree of expected return is endeavored to be limited. This is done as such by picking the amounts of different protections circumspectly contemplating chiefly the manner by which the cost of every security changes in contrast with that of each other security in the portfolio, as

opposed to picking protections separately. As such, the hypothesis utilizes scientific models to develop a perfect portfolio for a financial specialist that gives most extreme profit depending for his hazard hunger by thinking about the connection among hazard and return.

As per the hypothesis, every security has its own dangers and that an arrangement of differing protections will be of lower hazard than a solitary security portfolio. Basically, the hypothesis stresses on the significance of expanding to diminish hazard. James (1958) added to the Portfolio Theory by presenting the Efficient Frontier. As indicated by the hypothesis, each conceivable blend of protections can be plotted on a diagram including the standard deviation of the protections and their normal profits for its two tomahawks. The gathering of every single such portfolio on the hazard return space characterizes a zone, which is flanked by an upward slanting line. This line is named as the proficient boondocks. The gathering of Portfolios which fall on the proficient wilderness are the productive or ideal portfolios that have the most minimal measure of hazard for a given measure of return or on the other hand the largest amount of return for a given degree of hazard, (Markowitz, 1965)

The essential portfolio model was created by Markowitz (1965), who inferred expected pace of return for an arrangement of benefits and a normal hazard measure; under a sensible arrangement of suppositions. The portfolio hypothesis was worked around the presumptions that: Investors consider every speculation elective as being spoken to by a likelihood conveyance of anticipated returns over some holding period; Investors amplify one-period expected utility and their utility bends show reducing peripheral utility of riches; Investors gauge the danger of the portfolio based on the fluctuation of anticipated returns; Investors base choices exclusively on anticipated returns and hazard, so their utility bends are a component of anticipated return and anticipated change (or standard deviation) of profits just; For a given hazard level, financial specialists lean toward higher comes back to lower returns; comparatively, for a given degree of anticipated return, the speculators favor less hazard to more hazard. Under these presumptions, a solitary resource or arrangement of benefits is viewed as proficient if no other resource or arrangement of advantages offers higher anticipated comes back with the equivalent (lower) hazard or lower chance with the equivalent (or higher) anticipated returns (Brown & Reilly, 2009).

In connection to this investigation, portfolio hypothesis can be utilized by financial specialists to recognize an effective portfolio that offers a higher anticipated return than the others with a similar hazard or lower. In this investigation accordingly, portfolio hypothesis upholds one of the difficulties that the examination tried to address. A speculator will in general consider portfolios overall and not singular venture and their effects independently. This would then be able to give singular more choices in respects their choices on ventures.
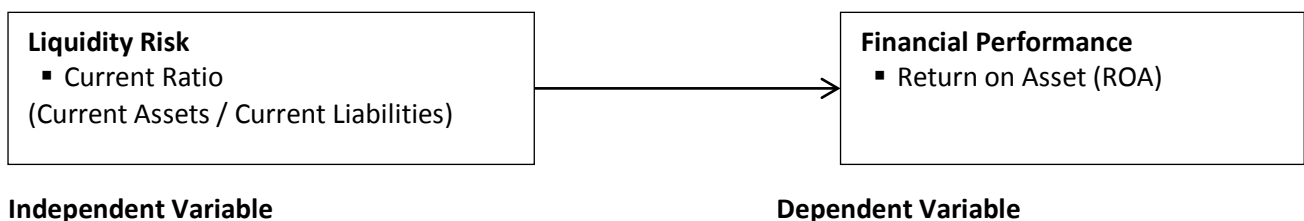
Liquidity Risk	Financial Performance
▪ Current Ratio	▪ Return on Asset (ROA)
(Current Assets / Current Liabilities)	

Independent Variable   **Dependent Variable**

Figure 1: Conceptual Framework

Empirical Review

Odalo, Achoki and Njuguna (2016) examined liquidity and financial performance in agricultural firms companies quoted in the NSE in Kenya. The main objective was to determine the influence of liquidity on the financial performance of

Agricultural companies quoted in NSE. They measured liquidity using liquidity ratios and financial performance using the following variables: EPS, ROE and ROA. The study adopted a causal (explanatory) and descriptive research design, a census methodology was utilized and seven quoted agricultural firms companies formed the study population. The particular inferential statistic was regression and correlation analysis. The study findings revealed that positive and statistically significant relationship between quoted NSE agricultural company's financial performance and liquidity in relation to ROA and ROE.Thus concluding that the firm's liquidity affects profitability positively. They recommended that financial managers ought to confirm that there is absence of mismatch between current liability and the current assets.

Gweyi, Olweny and Oloko (2018) researched to determine the influence of Liquidity risk on financial performance of deposit taking savings and credit co-operatives in Kenya. The result indicates liquidity risk has a negative and significant influence on financial performance. The study suggests that managers can mitigate liquidity risk by ensuring that they have sufficient cash resources. Then again, Irungu (2019) explored the impact of liquidity on financial performance of quoted firms in NSE and discovered that there is a positive and huge connection among liquidity and non-financial listed firm financial performance. Liquidity assumes a critical role in the fruitful working of a business firm. Liquidity not just assists with guaranteeing that an individual or business consistently has a dependable stockpile of cash close within reach, however it is an amazing asset with regards to deciding the financial strength of future investment too.

Waswa, Mukras and Oima (2018) examined how sugar industry financial performance in Kenya is affected by liquidity, utilizing five sugar companies as a sample between the periods of 30th June 2005 to 2016. The outcomes demonstrated that ratio of liquidity current liability coverage is contrarily associated with the firm performance, showing that a higher estimation of liquidity current obligation perpetually impacts firm financial performance. Results from the regression insist that ratio of current liability coverage contrarily influences firm performance an implication that the companies in Kenya's sugar industry work on low or negative money streams, exceptionally geared and absence of liability and asset strategies that could improve their performance financially. In a nutshell the outcomes demonstrated a negative relationship exist firm performance and liquidity. The study suggests that cautious consideration and funding liquidity management planning is one of the approaches to financial performance.

Mudanya and Muturi (2018) did a research on effect of financial risk on profitability of commercial banks listed in the NSE. Quantitative research design was used. Time Series Cross Sectional (TSCS) data was used to establish the effects of financial risk on profitability of commercial banks listed on NSE. Panel data estimation technique was adopted because it takes care of heterogeneity associated with individual banks by allowing for individual specific variables. . The target population of the study comprised of all then 11 commercial banks in Kenya that are listed at NSE. The study employed secondary data that was extracted from audited financial statements and annual reports of listed commercial banks over a 10 year period from 2007 to 2016. Both descriptive and inferential statistics was used to analyses the quantitative data. Findings of the study show that market risk, credit risk, liquidity and operational risk negatively influence profitability that is an increase in these risks would lead to decrease in profitability. The recommendation of the study indicates the need for the management of commercial banks to control these financial risk factors to increase performance of banks.

METHODOLOGY

To investigate the relevance of the research purpose with economic procedure, this paper adopted a longitudinal research design to collect

and analyze data. Longitudinal research design involves repeated observations of the same variables such as people over short or long periods of time that is uses panel data. From NSE handbook (2018), the total six agricultural firms listed on were analyzed for a period of 10 years making a total of 60 elements that were considered as the target population as well as the sample size of the study. This study took the entire population of all six listed agricultural firms using census technique. This study used the secondary data. The secondary data was retrieved from financial records of agricultural companies listed at the NSE as published each year by NSE; the consideration period was between the years 2009 to 2018 (10 years period of time). The researcher used descriptive statistics that included measure of central tendency; mean and measure of variability; standard deviation, maximum and minimum. The study used inferential statistics which were regression analysis and correlation analysis to test null hypotheses. These statistical tests were at 5% significance level. STATA software version 15 was used for statistical analysis. The following regression model was used:

$$ROA_{it} = \beta + \beta_1 LQR_{it} + \varepsilon_{it}$$

Where:

ROA_{it} = Return on assets for firm (i) in period (t)

β = Determines the level of fitted lines

β_1 = Regression coefficient

ε_{it} = Error term

FINDINGS AND DISCUSSION

Descriptive Statistics

The descriptive statistics entailed mean and standard error. The results are as shown in Table 1;

Table 1: Descriptive Results for Financial Resources

Variable	Mean	Std.Err	[95% Conf. Interval]	
LN_ LQR	1.42	0.09	1.24	1.59
LN_ ROA	-2.96	0.16	-3.27	-2.64

LN is Natural Log, **ROA** - Return on Asset, **LQR**- Liquidity Risk,

From the natural log for liquidity risk, LQR has a mean of 1.42 and standard error of 0.09. From 95% confidence interval it can be deduced that that there is only a 5% chance that the range 1.24 to 1.59 excludes the mean of the population for liquidity risk. The natural log for Return on Asset, ROA has a mean of -2.96 and standard error of 0.16. From 95% confidence interval it can be concluded that there is only a 5% chance that the range -3.27 to -2.64 excludes the mean of the population for Return on Asset. The mean values of ROA is below one implying that majority of the listed agricultural firms in Kenya were performing poorly. On the other hand LQR mean value is above one indicating most agricultural firms don't have such issue.

Normality Test

The study used a more efficient and conclusive technique known as Jarque-Bera to establish normality of study variables. The Jarque–Bera test is a goodness-of-fit test of whether sample data have the skewness and kurtosis matching a normal distribution. The study accepted the null hypothesis since the probability value for Jargue-Bera was greater than 0.05 for both log of return on asset and liquidity risk were insignificant at 0.05. Therefore, there was no significant deviation from hypothesized distribution as indicated in Table 2.

Table 2: Normality Test using Jarque Bera

Variable	Value	Df	Prob
LN_ROA	47.3	2	0.0612
LN_LQR	6238	2	0.7321

Panel Unit Root Test

The study carried out a unit root test to ensure that there was no presence of unit roots (the panel data are stationary). This ensured that the series were stationary and checks the problem of having a spurious regression. The study used Im Pesaran and Shin which is based on propositions; Ho: All panels contain unit roots. Ha: At least one panel is stationary. This test for presence of unit roots in panels and it combines information from time series dimension and cross section dimension, thus fewer time observations are required to make the test to have power. IPS test has been found by researchers to have superior test power in analyzing relationships in panel data, this research employed this procedure. The outcome was in Table 3.

Table 3: The Im Pesaran and Shin IPS (2003)

Variable	Im-Pesaran-Shin unit-root Test	Im-Pesaran-Shin unit-root test First difference
LN_LQR	-0.0365	-1.8197*
	0.4854	0.0344
LN_ROA	-1.2395	-2.8612 **
	0.1076	0.0021

* Sig at 5% level, ** sig at 1% level, **D**-First Difference, **LN_LQR**-Natural log of Liquidity Risk
LN_ROA-Natural log of Return on Asset

Before differencing liquidity risk and return on assets were not significant hence contain unit root but after the first difference all were significant hence no unit root.

Im Pesaran and Shin rejected null hypotheses after the first difference and concluded that all panels don't contain unit roots. This showed that all variables are stationery and has no unit root.

Correlation Analysis

The study used correlation analysis to test the association between independent variable and dependent variable for linearity. The results were as shown in Table 4.

Table 4: Correlation Analysis

Variable	DLNROA	DLNLQR
LN_ROA	1.0000	
LN_LQR	-0.1396	1.0000
	0.3140	

The relationship between liquidity risk (-0.1396) and return on asset was negative and weak. The results indicated that there is insignificant relationship between return on asset and liquidity risk as indicated by P=0.3140 (P>0.05). This implied that increase in liquidity risk would result to insignificant decrease in financial performance. Therefore, liquidity risk has no significant relationship with financial performance. The results are in agreement Ng'aari (2016) who concluded that there is no bidirectional relationship between profitability and liquidity in commercial banks in Kenya and liquidity had no significant effect on the performance of Kenyan commercial banks. However, Maaka (2013) indicated that there is a significant impact of all the factors of liquidity risk on performance of the banking system in Kenya when investigating relationship between liquidity risk and performance of commercial banks in Kenya.

Linear Regression Analysis

Linear regression analysis was conducted to determine the influence of liquidity risk on financial

performance of agricultural firms listed on the NSE, Kenya. Outputs of first difference were used. Random and fixed effects model was used after applying Hausman test.

Hausman Test

A Hausman test was carried out to determine whether to use the fixed effect or random effect model to address objectives of this study. Under the test, the null hypothesis is that there is no significant correlation between the individual effects and the independent variables. A rejection of the null hypothesis confirms the argument in favor of the fixed effect against the random effect model.

Results indicated a prob>chi2 value of 0.9959 which is greater than critical P value at 0.05 level of significance which implies that the null hypothesis that a random effect model is the best was not rejected. The study hence used a random effect regression model. Maniagi (2018) used random effect regression model when investigating the influence of financial risk on financial performance of commercial banks in Kenya after carrying out Hausman test while addressing the objectives of the study.

Table 5: Hausman Test

	(b) Fixed	(B) Random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
DLNLQR	-0.1059081	-0.1008141	-0.005094	0.0128175

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
$chi2(4) = (b-B)'[(V\_b-V\_B)^{(-1)}](b-B)$
= 0.19
Prob>chi2 = 0.9959

The study sought to establish influence of liquidity risk on financial performance of agricultural firms listed on the NSE. The null hypothesis denoted, H_o: Liquidity risk has no significant influence on financial performance of agricultural firms listed on the NSE was tested. Table 6 contains the findings.

Table 6: Regression Random Effect of Liquidity Risk on ROA

Random-effects GLS regression				Number of obs =		48
Group variable: FIRMIS				Number of groups =		6
R-sq:				Obs per group:		
Within = 0.096				Min =		8
Between = 0.5612				Avg =		8
Overall = 0.0906				Max =		8
				Wald chi2(2) =		4.48
corr(u_i, X) = 0 (assumed)				Prob > chi2 =		0.0064

DLNROA	Coef.	Std. Err.	Z	P>z	[95%oConf.oInterval]	
DLNLQR	-0.28055	0.343217	-0.82	0.414	-0.95325	0.3921426
LDLNROA	-0.27488	0.146371	-1.88	0.064	-0.56176	0.0120048
_cons	-0.16002	0.21058	-0.76	0.447	-0.57275	0.252712
sigma_u	0					
sigma_e	1.5230311					
Rho	0	(fraction of variance due to u_i)				

The result obtained from random effect model indicated that liquidity risk accounted for 9.06% (Overall R square = 0.0906) of the variation in financial performance of agricultural firms listed on the NSE. The findings showed Wald chi-square = 4.48 with a corresponding probability value = 0.0064. The partial regression coefficient for liquidity risk was -0.28055 shows that decrease in one percent in liquidity risk across time and agricultural listed firms makes return on assets to decrease by -0.28055 per cent. The regression model is as shown below;

DLNROA = - 0.16002 - 0.28055DLNLQR - 0.27488LDLNROA

The study therefore failed to reject the null hypothesis implying that liquidity risk has no significant influence on financial performance of agricultural firms listed on the NSE. This implies that increase in liquidity risk would not result to significant decrease in financial performance of agricultural firms listed on the NSE. The results agree with Lischewski and Voronkova (2012) who found out that stock liquidity risk does not significantly affect financial performance. Similar results were obtained by Khalid, Rashed and Hossain (2019) who revealed that shows that liquidity has no significant and positive or negative impact on return on asset (ROA), return on equity (ROE) as financial performance. Liquidity risk behaves in equivalent ways in different dependent variables using panel data procedure for a sample of Dhaka stock market enlisted all commercial banks (31) during the year of 2010-2017. The results do not agree with Yasser and Anna (2015) who investigated the influence of liquidity risk on bank performance. The study shows that banks experiencing high liquidity risk are characterized by low returns and vice versa.

CONCLUSION AND RECOMMENDATION

From the linear regression results, the study concluded that liquidity risk has insignificant negative effect on financial performance of agricultural firms listed on the NSE. An increase in liquidity risk would results to insignificant decrease in financial performance of agricultural firms listed on the NSE. This could be attributed to various regulations in regards to optimal liquidity requirements by various regulators; therefore, the tradeoff (deviation) if any may have insignificant effect on the return of asset of listed firms in Kenya. Therefore, liquidity risk is an insignificant influencer of financial performance of agricultural firms listed on the NSE. The study recommended that listed agricultural firms should avoid holding too much liquid assets as highly liquid assets are associated with lower returns than risky assets. As such, the opportunity cost of having too many liquid assets outweighs the return it generates. Therefore, managers of listed agricultural firms should invest excess liquid in productive assets that would increase returns. The study recommends that listed agricultural firms should not fall below required liquidity threshold as they would fail to meet their cash obligation when they arise.

REFERENCE

Akenga, G., (2015), "Effect of liquidity on financial performance of firms listed at the Nairobi Securities Exchange, Kenya" *International Journal of Science and Research* (IJRC) ISSN (Online) 2319-7064.

Banafa, A. S. A. (2016). *The effect of leverage, liquidity and firm size on financial performance of listed Non-financial firms in Kenya*. Unpublished Doctor of Philosophy Project Jomo Kenyatta University of Agriculture and Technology.

Brown, F. W., & Reilly, M. D. (2009). The Myers-Briggs type indicator and transformational leadership. *Journal of Management Development*, *28*(10), 916-932.

Dimitropoulos, P. E., Asteriou, D. & Koumanakos, E. (2000). The Relevance of Earnings and Cash Flows in a Heavily Regulated Industry: Evidence from the Greek Banking Sector, *Journal in Advances in Accounting*, 26(2), 290 – 303.

Gweyi, M., O., Olweny, T., and Oloko, M. (2018) Effect of Liquidity Risk on Financial Performance of Deposit Taking Savings and Credit Societies in Kenya; *International Journal of Economics, Commerce and Management*, 6(1), 259-283.

Irungu, A., M., (2019) Effect of Liquidity on Financial Performance of Listed Firms in the Nairobi Securities Exchange. *African Journal of Emerging Issues.* 1(5), 74-93.

Khalid, M. S., Rashed, M., & Hossain, A. (2019). The Impact of Liquidity Risk on Banking Performance: Evidence from the Emerging Market. *Global Journal of Management And Business Research*.

Kinyua, D. M. (2015). *Determinants Of Capital Structure Of Agricultural Firms In Kenya* (Doctoral dissertation, KCA University)

Lischewski, J., & Voronkova, S. (2012). Size, value & liquidity. Do they Really Matter on an Emerging Stock Market? Emerging Market Review, 13(1), 8-25

Maaka, Z. A. (2013). The relationship between liquidity risk and financial performance of commercial banks in Kenya. *Unpublished MBA Project*

Maniagi, G. M. (2018). *Influence of Financial Risk on Financial Performance of Commercial Banks in Kenya* (Doctoral dissertation, JKUAT).

Markowitz, H. (1965). Portfolio Selection: Efficient Diversification of Investments. *Cowles Foundation Monograph* No. 16. New York: Wiley & Sons, Inc.

Mudanya, L., E., and Muturi, W., (2018) Effects of Financial Risk on Profitability of Commercial Banks Listed in the Nairobi Securities Exchange. *Int Journal of Social Sciences Management and Entrepreneurship*. 2(1):75-93

Mugenda, O. M., & Mugenda, M. AG (2003). *Research Methods: Quantitative and Qualitative Approaches, Nairobi: African Centre Technology Studies press (ACTS)*.

Nairobi Securities Exchange (2013). Annual Handbook. Retrieved from http://www.nse.co.ke

Nairobi Securities Exchange (2018). Annual Handbook. Retrieved from http://www.nse.co.ke

Ng'aari, E. W. (2016). *Effect of Risk Management Practices on The Profitability of Listed Commercial Banks in Kenya* (Doctoral dissertation, KCA University)

Odalo, S. K., Achoki, G., & Njuguna, A. (2016). Relating Company Size and Financial Performance in Agricultural Firms Listed in the Nairobi Securities Exchange in Kenya. *International Journal of Economics and Finance*, *8*(9), 34-40.

Waswa,C., W., Mukras, M., S., & Oima, D., (2018). Effect of Liquidity Performance of the Sugar Industry in Kenya. *International Journal of Education and Research*, (6) 2411-5681

Yasser, B., & Anna, C. (2015). Liquidity Risk and Bank Stock Returns. Journal of Economic Literature. D86; E02; E01