Liquidity Risk and Profitability of Nonfinancial Public Limited Companies in Kenya

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A B S T R A C T

The research delved into the relationship between liquidity risk and profitability of nonfinancial quoted companies in Kenya. The research was grounded by shiftability theory. The study population was all the 43 listed nonfinancial firms in Kenya. The participation rate was 70%. The inquiry engaged time series cross sectional design. Archival data was derived from financial reports extracted from the Nairobi Securities Exchange (NSE) database for eleven year period spanning from 2009 to 2019. Data processing and evaluation was done using statistical software of Econometric Views (E-Views-12). Simple regression analysis was executed using Panel Vector Error Correction (VEC) Model. The research discovered that liquidity risk has a negative and significant effect on profitability of nonfinancial public limited companies in Kenya. Nonfinancial companies should optimize on their liquidity risk to enhance their working capital in order to improve their profitability position. The research recommended that nonfinancial companies should regularly review their liquidity risk by establishing optimal cash limits and invest the excess liquidity in productive projects to prevent liquidity risk crisis that can easily trigger profitability challenges.

Keywords: Liquidity Risk, Nairobi Securities Exchange, Nonfinancial Companies, Profitability, Panel Vector Error Correction Model

1.0 INTRODUCTION

1.1 Background of the Study

Wayongah and Mule (2019) observe that the contribution of nonfinancial companies remain great and significant in fuelling national prosperity and social-economic development. For instance 13.4% of the Kenyan GDP was attributed to the nonfinancial companies at the NSE in 2018. With this immense economic contribution, it is expected that these companies perform well in order to continually spur economic growth and development in the country (Kariuki, 2019). Despite this significant contribution to the economy, declining profitability among the nonfinancial companies in Kenya over the recent decades has raised concerns among practitioners, scholars, policy makers and financial managers locally (Musyimi, Gatauwa & Kimutai, 2025; Wanjiku, Mwangi, Nyamute & Kiiru, 2022). Over the past two decades, the Kenyan economy has had mixed reports on profitability in both public, private, financial and nonfinancial listed companies, sending worrying signals (Akuku, Nyang'au & Maobe, 2023). While some companies in the financial sector have posted abnormal profits others in the nonfinancial sectors have reports of unpredictable profitability over the years (Wanjiku *et al.,* 2022). Wayongah and Mule (2019) observe that in the period between 2012 and 2018, financial companies published an average operating profit margin of 42% and a net profit margin of 30% compared to nonfinancial companies' 19% and 13% respectively. The consequences of the shifting in resources from the real sector to the financial sector, puts at risk Kenya's sustainable millennium development goals and the realization of vision 2030 (Kariuki, 2019).

Gross and Siklos (2018) observe that nonfinancial companies in smaller economies of Africa, Latin America and open economies are more exposed to financial risks compared to their counterparts in Western countries. The exposure to liquidity is quite alarming in developing economies in Africa. Olalere, Aminul, Yusoff and Shamsuddin (2018) observe that financial risk exposure among public limited companies is still very high in both financial and nonfinancial sectors in low-middle income and middle income economies in Africa (Ngunjiri, Matanda & Waga, 2025). Mrindoko, Macha and Gwahula (2020) intimate that financial risk exposure is very high among African listed firms. For instance in Tanzania banks reported 80% exposure to operational risk (Mrindoko et al., 2020). Data for listed firms in Nigeria, especially from the financial sector show a high financial risk exposure: long-run liquidity risk 137%, short-run liquidity risk 109% and liquidity risk exposure of 227% (Adegoke & Oyedeko, 2018). Ngunjiri *et al.* (2025) claim that listed companies in Kenya had the highest average exposure to liquidity risk of up to 35, 627%. This increasing exposure to financial and especially liquidity risk could be attributed to the desire by companies to improve performance metrics (Al-Tamimi, 2025; Simamora & Oswari, 2019).

1.2 Statement of the Problem

Nonfinancial companies' contribution to the economic progress of the republic of Kenya is equally important (Kariuki, 2019). The nonfinancial firms are therefore expected to perform well for the continued economic stability of Kenya. However the profitability of these companies continues to attract the attention of stakeholders in the country (Wanjiku *et al.,* 2022). Nonfinancial sectors companies have reports of unpredictable and increased volatility in their profitability over the years (Musyimi *et al.,* 2025. Wanjiku *et al.* (2022) claim that, industries in the nonfinancial sectors have been struggling to exist with some companies in key sectors closing operations due to poor profitability. Maintaining sufficient profitability to run company operations remains a key challenge for the nonfinancial companies in Kenya (Wayongah & Mule, 2019). Besides, listed companies continually registered a high liquidity risk exposure of 35, 627% in Kenya (Ngunjiri *et al.,* 2025). There are reports of nonfinancial companies widening their exposure to liquidity risk in their daily operations as they struggle to remain profitable (Simamora & Oswari, 2019).

A number of investigations on the relationship between liquidity risk and profitability reported inconsistent outcomes (Huong, Nguyen & Lien, 2021). Huong *et al.,* (2021) insist on the need for more research in this area. A study by Chowdhury and Zaman (2018) in Bangladesh declared an insignificant relationship with a neutral implication on performance. On the contrary, a study by Huong *et al.* (2021) in South East Asia are of the view that liquidity risk showed mixed results: negative, positive and had insignificant effect on performance measures. Adegoke and Oyedeko (2018) in Nigeria claimed a positive relationship, which was insignificant in the short term and significant in the long term. Furthermore, Mwangi, Muturi and Kibati (2019) found that liquidity risk had a positive and significant impact on price volatility of listed firms in Kenya. On the other hand, Mwakiboko and Mwikamba (2025) reported that liquidity risk had a negative and insignificant effect on performance of listed commercial lenders in Kenya.

From the foregoing discussions, it is clear that, some prior studies overlooked the need to investigate liquidity risk and profitability side by side, creating an empirical gap in the nonfinancial sectors in Kenya. The prevailing inconsistencies in test results also creates a theoretical gap that calls for more testing and debating. The prior studies are basically conducted in the financial sectors of their respective economies leading to inadequate data in the nonfinancial sectors, creating both empirical, conceptual and spatial gaps in Kenyan nonfinancial sectors.

The current study bridges these gaps in a timely manner. Empirical studies on liquidity risk and profitability fail to search for possible co-integration between the variables by testing for co-integration and using Granger causality to validate the process, creating methodological gaps (Kyshakevych, Melnyk, Hrytsenko, Voronchak & Nastoshyn, 2024). This study bridges these methodological gaps by carrying out proper data generation procedures prior to testing the hypothesis using Panel VEC model (VECM). Hence this study adopts a superior methodological approaches suitable for analysis of time series data in the nonfinancial sectors of the economy in Kenya, which is unprecedented.

Besides, Chowdhury and Zaman (2018) concludes their investigations by alluding to the need for more research on liquidity risk and profitability in nonfinancial sector to broaden the understanding. Huong *et al.* (2021) insists on doing an alternative study on the effect of liquidity risk on profitability in other middle income economies other than South East Asia, creating a spatial gap. Huong *et al.* (2021) removed small and medium sized firms from their research, concentrating only on firms with extensive operations. This investigation comprehensively captures all firms with mixed levels of operations. Some inquiries by Adegoke and Oyedeko (2018) in Nigeria, Chowdhury and Zaman (2018) in Bangladesh and Huong *et al.* (2021) in Vietnam uses return on assets (ROA) and return on equity (ROE) as performance indicators, ignoring vital profitability indicators such as margin ratios. Huong *et al.* (2021) insist that a study on liquidity risk and profitability in the nonfinancial sectors for a time frame of more than 5 years, would be necessary to enhance the understanding of the relationship and help fill a temporal gap.

1.3 Research Objective

To investigate liquidity risk and profitability of nonfinancial public limited companies in Kenya

Research Hypothesis

H_{01}: Liquidity risk has no significant effect on profitability of nonfinancial listed companies in Kenya

2.0 LITERATURE REVIEW

2.1 Theoretical Framework

2.1.1 Shiftability Theory

This theory provides guidelines on the management of liquidity risk faced by companies, particularly focusing on the assets that they can readily transfer to third parties for the purpose of upholding liquidity and lowering liquidity risk while sustaining profitability concurrently (Cobbinah, Yang, Sarpong & Nyantakyi, 2024).The theory postulate that in moments of crisis companies should be able to shift their earning assets to other institutions with better cash position rather than relying on their own liquidity to create the highly needed cash reserves (Al Zaidanin & Al Zaidanin, 2021). Mwaura and Njoka (2020) argues that shift-ability theory allows firms to move away from the orthodox approach of holding more cash reserve into an idle fund compromising profitability opportunities. The theorization intimates that, nonfinancial and financial companies can take more liquidity risk and still maintain profitability (Gweyi, Olwenyi & Oloko, 2018). This is achieved by holding more transferable assets in their portfolios (Al Zaidanin &

Al Zaidanin, 2021). Gweyi *et al.* (2018) suggest that for assets to be ranked as perfectly shift-able, they should be converted to cash on a short notice in the secondary market without capital loss when the demand for liquidity arises.

Transferrable assets may include: treasury bills, commercial paper, bills of exchange, equities and loan stocks of top-tier companies (Nyangaresi & Simiyu, 2024). Mwaura and Njoka (2020) corroborates this theorization by conceiving a shift-ability doctrine, in which nonfinancial companies acquire assets that can be shifted to financial institutions in times of need. Similarly, during liquidity crisis, banks can transfer their assets to the central bank as the ultimate provider of liquidity (Cobbinah *et al.,* 2024). Shift-ability theorization provides a mechanism for firms to manage liquidity risk using second and third party players, while enhancing profitability (Cobbinah *et al.,* 2024). Mwaura and Njoka (2020) anticipates a negative relationship between liquidity risk and profitability under the shiftability theorization; as liquidity risk is borne by other players within the industry and outside the industry in the money market (Haruna & Garba, 2025). Therefore, it does not need to be solely an internal company affairs that draws away company resources (Gweyi *et al.*, 2018). Hence, the orthodox theory of relying on asset maturity leading to maturity mismatch; which increases liquidity risk is inconsequential under this theorem (Gweyi *et al.*, 2018). Besides, the idle cash component of liquid assets which increases liquidity risk is greatly reduced under this conjecture (Cobbinah *et al.,* 2024).

Even though shiftability forms a strong theoretical argument, it assumes that the financial security market is efficient and maintains a long term stability. In as much as this could be true in the short run (Huong et al., 2021). Financial markets sometimes experience turbulence such as those reported during 2007/2008 financial crisis (Huong et al., 2021). Such turbulence sent ripple effects in the whole economy affecting all companies both in the nonfinancial and financial sectors (Gross & Siklos, 2018). Gross and Siklos (2018) provides empirical evidence which reveal that there is a significant relationship between cross sector contagion effects of liquidity risk from nonfinancial into the financial sector and from financial into nonfinancial and the sovereign sectors including the central bank. During such financial crisis, the proper functioning of financial markets as an intermediary for financial assets transfer can be disrupted, making it difficult for companies to raise liquidity to address the increased demand for their activities, hence increasing liquidity risk (Al Zaidanin & Al Zaidanin, 2021). This raises major challenges and limitations for shiftability theory as tool for liquidity risk management (Cobbinah *et al.,* 2024).

2.2 Conceptual Framework

Gweyi *et al.*, (2018) describes a conceptual framework as a visual depictions of relationships between different concepts diagrammatically to show cause-and-effect relationships. (Gweyi *et al.*, 2018). Figure 1 shows operational risk has one level and profitability has one level.
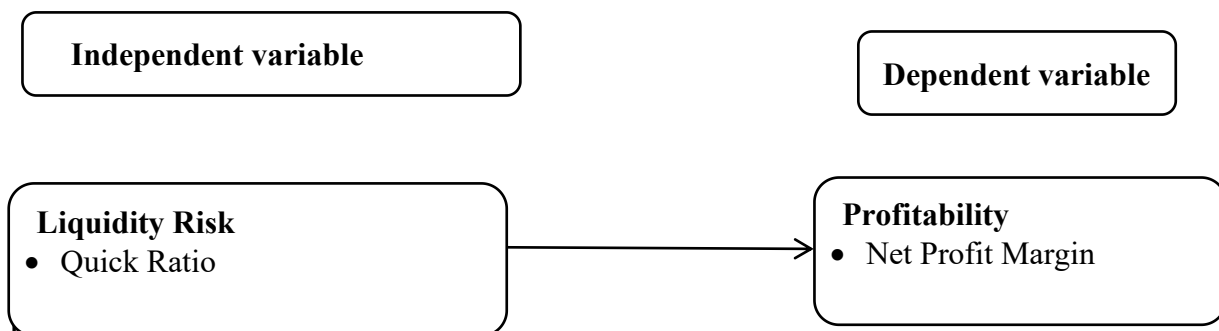

Figure 1 Conceptual Framework

2.2.1 Liquidity Risk

Liquidity risk imply the uncertainty surrounding the firm's inability to unwind a position at a little or no cost and insufficient cash flows to meet financial commitment whenever they fall due (Abbas & Ullah, 2024). Olofin, Muritala, Maitala, Abubakar and Ajalie (2024) defines liquidity risk as the probability that a company will fail to raise enough cash to meet its short-term debts whenever they become payable. Widyawati, Hanani and Az'mi (2022) claim that firms are prone to liquidity risk exposure due to failure to liquidate their assets at a reasonable price. Liquidity problems may arise when firms fail to market their commodities, they cannot receive their cash for products offered for sale, the manufacturing expenses increases extensively and when there is declining efficiency (Mwangi *et al.,* 2019).

The occurrence of liquidity risk is not only pecked on the shortage of financial assets in a company, but also a plethora of unused funds and mismatch between assets and liabilities (Eltweri, Sawan, Al-Hajaya & Badri, 2024). Olofin *et al.* (2024) identifies the repercussions of a company holding lower levels of liquid assets. They include increased cost of liquidation, reduction in the ability to meet the cash obligations, reduced asset value, limited access to funding, inefficiency in executing trade, low working capital, increased liquidity crisis, increased financial distress and depressed growth prospects (Abbas & Ullah, 2024). The consequences of very high liquidity include increased cost of holding liquid assets, reduced investments, decreased asset efficiency, increased financial expenses, clogging capital in low yielding assets and reduced returns (Eltweri *et al.,* 2024).

Business related liquidity risk has recently become more substantial due to the nonfinancial company's heavy reliance on lending institutions (Faruque, 2021). Liquidity risk therefore ranks as one of the most exposed to risk by nonfinancial companies during their operations and life (Abbas & Ullah, 2024). Increased scale of operations of nonfinancial companies enhances their liquidity requirements increasing their vulnerability to liquidity risk (Kakongo & Irungu, 2020). High scale of operations has led to large volume of transactions increasing the short-term obligations, pushing up the demand for liquidity and therefore exposing the nonfinancial companies to more liquidity risk than before (Kakongo & Irungu, 2020). Hence nonfinancial companies are susceptible to liquidity shocks originating from within the sectors and those originating from the financial sectors of the economy (Huong *et al.*, 2021).

Abbas and Ullah (2024) identifies two main sources of liquidity risk exposure to nonfinancial firms: the desire to liquidate assets and the inability to have enough cash flow for normal business operations. Faruque (2021) outlines the main drivers of liquidity risk as asset and liability mismatch, clients' behaviours and financial markets volatilities. Maturity mismatch occurs when liabilities are said to have a shorter maturity period compared to assets (Olofin *et al.*, 2024). These drivers of risk, lead to two main classes of liquidity risks: trading and funding risk (Muthoga, 2019). Funding risk may occur if the firm fails to meet its cash flow requirements forcing it to liquidate assets (Muthoga, 2019).

On the other hand, market liquidity risk may be due to inadequate market depth, market disruption or inability to access the market (Olofin *et al.*, 2024). Liquidity risk indicators include liquid asset holding which is represented by current ratio and quick ratio and liquidity exposure whose proxy is funding or financing gap (Cangoz, Sulla, Wang & Dychala, 2019; Etlwari *et al.*, 2024; Senol, Karaca & Erdogan, 2017). Liquidity exposure or the financing gaps indicate the vulnerability of the firm's current assets to current liabilities and is estimated by dividing current liabilities by short-term assets (Abbas & Ullah, 2024) or gross liabilities divided by aggregate assets (Senol *et al.*, 2017). Liquid asset holding is measured by liquid asset divided by gross asset (Racha, Yasmine & Sherine, 2021). This research will mainly focus on the funding liquidity arm of liquidity risk as used by Senol *et al.* (2017).

2.3 Empirical Review

2.3.1 Liquidity Risk and Profitability

Chowdhury and Zaman (2018) examined the effect of liquidity risk on profitability of financial companies in Bangladesh, for the period spanning from 2012 to 2016 and unveils debate awakening results. The researchers collect financial data set for 6 Islamic banks from the companies' websites. Liquidity risk has liquid asset to total asset ratio and profitability has ROE and ROA as proxies. Descriptive and inferential analyses are done. Liquidity risk proxy shows a positive but negligible impact on the ROA and ROE of the sample firms. Increased exposure to liquidity risk is associated with increasing profitability, while lower risk exposure reduces firm performance (Racha *et al.,* 2021).

These findings by Chowdhury and Zaman (2018) are consistent with the firm's corporate wealth maximization objective which requires that companies should strive to expand in size by investing in projects that yield positive returns. The authors still maintains that exposure to high levels of liquidity risk would run the company into disrepute, making stakeholders to lose confidence in its mission and vision. Such loss of faith would ultimately drive the company into receivership. The researchers identify two main sources of liquidity risk: failure to control declining asset level matched with increasing liabilities and failure to strike a balance between cash inflows and outflows and contingency liquidity requirements.

Huong *et al.* (2021) tests the effect of liquidity risk on performance of banks in South East Asia from 2004 to 2016. The researchers obtained secondary data from websites of 171 banks from Brunei, Cambodia, Indonesia, Laos, Myanmar, Malaysia, Philippines, Thailand and Vietnam. Liquidity risk is measured by liquid assets divided by gross assets and current assets divided by gross liabilities while, profitability is estimated by ROA and ROE. Generalized methods of moments (GMM) is used to test for the effect. Huong *et al.* (2021) find that liquidity risk negatively affects ROE and positively affects ROA of banks and this is insignificant. The study conclude that better performing banks will always incur liquidity risk. Firms with limited liquidity will always experience funding shortfalls. The increased demand for funding propels the company to utilize the existing equity and their cash assets or approach external creditors for the highly needed finances. In the same vein, firms with extreme liquidity problems, fail to meet their cash requirements and are compelled to liquidate their assets at a higher costs. Increased liquidity risk exposure can lead to bankruptcy (Kangongo & Irungu, 2020).

In the African set up Adegoke and Oyedeko (2018) study the effect of liquidity risk on performance of banks in Nigeria, from 2007 to 2016. Expos-factor research design is employed in examining financial statements of 15 listed firms. Panel data regression is used to test this effect. The study decompose liquidity risk into long term risk and current risk exposure. The liquidity risk indicators include current assets to total deposits, current assets to current liabilities and the ratio of financing gap to gross assets. Profitability was indicated by ROA. The study findings showed that, long term liquidity risk had a positive and significant influence on profitability. The same study showed that current liquidity risk showed a positive parameter, which was insignificant while liquidity risk exposure seems to have a negative but statistically insignificant influence on profitability.

Adegoke and Oyedeko (2018) advise companies' strategic managers to ensure proper maintenance of current, medium and long term cash so as to contain illiquidity problems in order to reduce liquidity risk exposure. This will ultimately enhance the managerial capability to address unexpected expenditures and investment opportunities whenever they arise (Abbas & Ullah, 2024). Moreover, Adegoke and Oyedeko (2018) inspires firms to strike a reasonable balance between cash holdings and the marginal costs to help resolve the agency problems, reduce transaction costs and maximize on their competitive advantages, increasing their capacity to wade through unexpected negative changes in cash flows.

Mwangi *et al.,* (2019) test whether liquidity risk affect, price volatilities among Capital Market Authority (CMA) quoted firms in Kenya. The study use secondary data, collected from 19 unit trusts from 2009 to 2017. Longitudinal research design is utilized. Descriptive, correlation and panel data regression analysis are done. Liquidity risk proxies are total equity to gross assets ratio, quick asset ratio and current ratio. The study reported a positive and significant relationship. Mwangi *et al.* (2019) encourage companies' management to occasionally re-evaluate their liquidity risk profile, by putting in place optimal cash targets and setting their lower and upper cash limits. This will help to prevent companies from holding too much excess idle cash float or too little cash that could curtail their smooth operations. Mwangi *et al.* (2019) recommend that companies should ensure that any excess cash is channelled into productive investment projects to generate more income, while at the same time preventing them from landing into illiquidity trap by avoiding very low cash levels that could land them into financial crisis.

3.0 RESEARCH METHODOLOGY

The study adopted a quantitative research design to enable the procurement of data on nonfinancial public limited companies in Kenya. The target population was all nonfinancial public companies listed in Kenya. The Nairobi Securities Exchange (NSE) as at 31$^{\text{ist}}$ December 2019 had 43 nonfinancial companies listed. The investigation covered 30 companies that had full published financial reports from 2009 to 2019. Econometric Views (E-Views 12) was used to do the analysis. Inferential analysis was done using Panel Vector Error Correction (VEC) Model. The choice of Panel VECM was guided by the results of diagnostic testing. Diagnostic testing included normality, autocorrelation, heteroskedasticity, panel unit root, and granger causality and cointegration tests. The choice of random effect model was informed by Hauseman test.

Regression Equation is shown in equations 1.1

$$NPM_{it}=\beta_0+\beta_1 LQR_{it}+\mu_{it} \tag{1.1}$$

Taking the natural logarithm (ordinary square root) of the variables to avoid multicollinearity. Log Transformed as in 1.2

$$LnNPM_{it}=\beta_0+\beta_4 LnLQR_{it}+\mu_{it} \tag{1.2}$$

Where:

NPM_{it} = Profitability

Ln = Natural logarithm

B_0 = the constant term/the intercept

β_1 = coefficient of liquidity risk

LQR_{it} = measure of liquidity risk for company i in time t

t= the period from 2009 to 2019

μ_{it} = the stochastic error term/the unbiased and equally distributed error term

The coefficients (β_1) are used to estimate the sensitivity of the dependent variable *(*profitability) to variations in the liquidity risk.

4.0 FINDINGS AND DISCUSSION

4.1 Descriptive Statistics

Descriptive used include the lowest value, the highest value, the range, the middle value, the average value, the standard deviation, skewness and kurtosis. Table 1 presents the output of the descriptive test. The table highlights descriptive on liquidity risk and profitability.

4.1.1 Descriptive on Profitability

Profitability is measured by net profit margin as shown table 1. Results in table 1 show that all the years report a negative minimum net profit margin ranging from -10.978 in 2018 to -0.0328 in 2010 pointing a red flag in profitability performance among the nonfinancial public limited companies. This imply that some companies report a negative net profit margin throughout the study period. The maximum value range from a low of 0.39804 in 2019 to a high of 1.51528 in 2018. The highest mean value is 0.131079 in 2010 and the lowest mean is -0.39238 in 2018. Most of the companies reported negative profits in three consecutive years from 2017 to 2019, which is evidenced by a negative mean in net profit margin of -0.10842 in 2017, -0.39238 in 2018 and -0.31909 in 2019 and a high standard deviation of 2.090126 (209%) is shown in 2018 and 1.170369 (117%) in 2019 besides high range of 0.78135 (78%) to as high as 12.49338 (125%) in 2018, indicating a wide spread in profitability among the nonfinancial public limited companies and increased volatilities in profitability. The rule of the thumb assume that a 5% (0.05) is a low, 10% (0.1) is a healthy while 20% (0.2) is a high net profit margin (Pervetica & Ahmeti, 2023).

The median is below 0.1 throughout the period from 2009 to 2019 ranging from 0.003211 in 2017 to 0.09648 in 2009; with 6 consecutive years reporting low net profit margin of 0.044705 in 2014, 0.02097 in 2015, 0.049745 in 2016, 0.003211 in 2017, 0.04174 in 2018 and 0.01621 in 2019 in the

median value. Indicating that most nonfinancial public limited companies report a low net profit margin from 2014 to 2019 and most reported below a healthy net profit margin of 0.1 throughout the study period (2009 to 2019). The kurtosis of more than 3 is reported during the entire study period with exceptions in 2015 and 2014, with most years reporting a skewness of 3 and less than 3 which indicate the presence of a heavy tail. A negatively skewed data is visible from 2014 to 2019 implying that most of the mean values are less than the median values during this period.

The result concurs with findings from Wanjiku *et al.,* (2022) that uncovered a minimum values of less than -39% which are low profitability among nonfinancial companies listed at Nairobi securities exchange. Adebayo *et al.* (2020) reported a lowest profitability value of -0.242, an upper value of 0.106 and an average of 0.013 ROA in Nigeria; Abbas and Ullah, 2024 declared an average ROA of 0.0141, a least value of -0.1995 and the highest value of 0.8845 in the financial sector in South Asia, consistent with the current study. This findings concur with Saadun *et al.* (2024) study in Malaysia that reported very low profitability among the nonfinancial sector companies and Abbas and Ullah (2024) in the South Asia that highlighted declining profitability among financial companies. The mixed results highlighted by positive and negative net profit margins indicate increased volatilities in profitability among the nonfinancial public limited companies.

Table 1 Trend Analysis for Profitability (Net Profit Margin)

Year	N	Min	Max	Med	Mean	SD	Skewness	Kurtosis
2009	30	-0.1283	0.79977	0.09648	0.114769	0.153483	3.109068	13.92589
2010	30	-0.0328	1.05345	0.068795	0.131079	0.204266	3.472867	14.6192
2011	30	-0.5087	1.01369	0.08799	0.118574	0.230351	1.576662	9.09692
2012	30	-0.1140	0.93484	0.056045	0.107112	0.17422	3.851584	18.45561
2013	30	-0.1389	0.6425	0.062475	0.101746	0.13677	2.110315	7.862981
2014	30	-0.4470	0.62569	0.044705	0.037755	0.200219	-0.12943	2.96603
2015	30	-0.8397	0.82827	0.02097	0.069906	0.323802	-0.19175	1.788694
2016	30	-1.5432	1.22198	0.049745	0.021459	0.428384	-1.16079	7.401689
2017	30	-3.2384	0.88392	0.003211	-0.10842	0.736624	-3.12882	11.92445
2018	30	-10.978	1.51528	0.04174	-0.39238	2.090126	-4.80555	24.66262
2019	30	-6.0257	0.39804	0.01621	-0.31909	1.170369	-4.31244	20.74223

Source: Research Data 2024

4.1.2 Descriptive on Liquidity Risk

Liquidity risk is measured by quick ratio and results are as in table 2. Table 2 reveal minimum quick ratio values ranging from 0.00658 in 2018 to 0.279 in2010 indicating that some nonfinancial companies showed a high liquidity risk throughout the study period. The maximum quick ratio values range from 2.04091 in 2009 to a high of 6.66919 in 2015 revealing a high liquidity risk among some of the companies. The median values range from 0.635875 in 2018 to 1.063585 in 2010. The median values are below the quick ratio benchmark value of 1.00 (Ishwara & Pour, 2025) in all the years except in 2010 where the value is equal to 1.063585, which reveal a high liquidity risk throughout the period. High mean of values higher than 1.00 throughout the period show low risk. A high range is seen throughout the study period from 1.77472 in 2009 to 6.55561 in 2015, which is accompanied with a high standard deviation of 0.527654 (53%) in 2009 to as high as 1.521729 (152%) in 2015, which indicate a high dispersion in quick ratio.

The findings are inconsistent with a study by Mwangi (2023) that reported a high mean value of 3.16 and a median of 3.21 and a minimum of 2.55 and maximum of 3.59 in quick ratio alluding to high liquidity risk among Unit Trusts in Kenya. The wide dispersion imply that the high mean of above 1.00 in all the years except in 2012 with a low of 0.974916 is mostly explained by some companies with very high quick ratio carrying a high liquidity risk compared with other companies with very low quick ratio which carries very high liquidity risk as well. The data set is positively skewed implying that the means are greater than their respective medians throughout the study period. The kurtosis value is larger than 3 in in four years which include 2010, 2014, 2015 and 2017 implying a large tail.

Table 2 Trend Analysis for Liquidity Risk (Quick Ratio)

Year	N	Min	Max	Med	Mean	SD	Skewness	Kurtosis
2009	30	0.26528	2.04091	0.928215	1.044122	0.527654	0.473026	-0.76077
2010	30	0.279	4.46542	1.063585	1.126905	0.768883	2.891119	12.02459
2011	30	0.09004	2.48325	0.872685	1.025224	0.579913	0.589563	-0.1745

Year	N	Min	Max	Med	Mean	SD	Skewness	Kurtosis
2012	30	0.22678	2.29461	0.880255	0.974916	0.5543	0.626246	-0.24376
2013	30	0.27011	2.79191	0.8791	1.12203	0.733815	0.848586	-0.38449
2014	30	0.15938	6.44198	0.830715	1.261815	1.31015	2.586164	8.006962
2015	30	0.11358	6.66919	0.865535	1.413056	1.521729	2.10555	4.421808
2016	30	0.10868	4.23098	0.96937	1.264268	1.1473	1.352861	1.194217
2017	30	0.07066	6.13077	0.869935	1.225579	1.257632	2.350173	7.224739
2018	30	0.00658	4.07476	0.635875	1.06352	1.062411	1.639111	2.587551
2019	30	0.04785	3.98038	0.79896	1.068829	0.935734	1.516842	2.430325

Source: Research Data 2024

4.2 Diagnostic Tests

Diagnostic tests carried out include normality, autocorrelation, heteroskedasticity, multicollinearity. Normality test in table 3: the test result value for profitability (LNPROFIT) and liquidity risk (LNLQR) is greater and smaller than the significant value for skewness and kurtosis respectively. Hence, the data is not normally distributed. Autocorrelation test results in table 4 show that, the statistic is less than the significant value. Therefore, there is serial correlation in the series. Heteroskedasticity test results in table 5 report a probability value which is inferior to the significant value. Hence, heteroskedasticity is detected in the series. There is no evidence of multicollinearity in the series as the variance inflation factor is less than 5 and the tolerance value is smaller than 1. The evidence is provided in table 6.

Table 3 Residual Normality Tests

Orthogonalization: Cholesky (Lutkepohl)

Null Hypothesis: Residuals are multivariate normal

Date: 12/21/24　Time: 22:08

Sample: 2009 2019

Included observations: 240

Component	Skewness	Chi-sq	Df	Prob.*
LNPROFIT	-0.102535	0.420538	1	0.5167
LNLQR	0.434635	7.556309	1	0.0060
Joint		376.8415	7	0.0000

Component	Kurtosis	Chi-sq	Df	Prob.
LNPROFIT	6.021678	91.30538	1	0.0000
LNLQR	7.559199	207.8630	1	0.0000
Joint		16079.93	7	0.0000

Table 4 Residual Serial Correlation LM Tests

Date: 12/21/24　Time: 22:10

Sample: 2009 2019

Included observations: 240

Null hypothesis:
No serial
correlation at lag
h

Lag	LRE* stat	Df	Prob.	Rao F-stat	Df	Prob.
1	99.32927	49	0.0000	2.076187	(49, 1075.6)	0.0000
2	70.23898	49	0.0249	1.448593	(49, 1075.6)	0.0250
3	139.2649	49	0.0000	2.965264	(49, 1075.6)	0.0000

Table 5 Residual Heteroskedasticity Tests (Levels and Squares)

Date: 12/21/24 Time: 22:13

Sample: 2009 2019

Included observations: 240

Joint test:

Chi-sq	Df	Prob.
1329.155	840	0.0000

Table 6 Multicollinearity Diagnostic Criteria

Var	Eigenval	C_Numnber	C_Index	VIF	1/VIF	R2_xi,X
LNLQR	1.7341	1.0000	1.0000	1.4244	0.7020	0.2980

4.3 Panel Unit Root Test for Liquidity Risk

Testing was done to establish whether the series on liquidity risk (LNLQR) follows a random walk. The test null hypothesis states that panels contain a unit root. If any of the tests employed fails, then it is concluded that the data is non-stationary. The test results in table 7 show that, the Levin, Lin and Chu test statistic has its p-value smaller than the significant value of 0.01. Im, Pesaran and Shin, Augmented Dickey-Fuller (ADF) and Phillips-Peron (PP) statistics have their p-values superior to the significance value of 0.01. On the basis of this findings, there is sufficient evidence to accept the null hypothesis and conclude the data is non-stationary.

Table 7 Panel unit root test: Liquidity Risk Summary

Series: LNLQR

Date: 12/18/24 Time: 17:43

Sample: 2009 2019

Exogenous variables: Individual effects

User-specified lags: 1

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross-Sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.36947	0.0000	30	270
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.59551	0.2758	30	270
ADF - Fisher Chi-square	74.1879	0.1029	30	270
PP - Fisher Chi-square	77.1058	0.0677	30	300

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

4.4 Panel Unit Root Test for Profitability

Testing was done to explore whether the profitability series is non-stationary. The test null hypothesis state that panels contain a unit root. The test results on profitability in table 8 show that the Levin, Lin and Chu test statistic, Im, Pesaran and Shin, the ADF and PP statistics have their p-values larger than the significant value of 5% (0.05) and 1% (0.01). Hence, there is evidence of unit root in the panels. The null hypothesis is therefore accepted that the data on profitability is non-stationary.

Table 8 Panel unit root test: Profitability Summary

Series: LNPROFITABILITY

Date: 12/18/24   Time: 17:41

Sample: 2009 2019

Exogenous variables: Individual effects

User-specified lags: 1

Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross-Sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-0.13442	0.4465	30	270
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.57529	0.7175	30	270
ADF - Fisher Chi-square	54.4663	0.6773	30	270
PP - Fisher Chi-square	86.3438	0.0146	30	300

** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.

4.5 Model Adjustments following Diagnostic Testing

Failure of any of the preliminary diagnostic test implies that the assumptions of the classical linear regression model have been violated and therefore application of the Ordinary Least Square (OLS) models would give rise to spurious regression output. Hence, supplementary testing is required to determine the appropriate model to use for analysis.

4.5.1 Pairwise Granger Causality Tests

Granger Casuality test results are reported in table 9. Liquidity risk (LNQR) significantly affect profitability (LNProfitability) with a probability value of 0.0069 which is less than 0.05. The reverse, show that profitability does not significantly affect liquidity risk as the probability value of 0.3141 is greater than 0.05. This imply that, there is a one way causality between liquidity risk and profitability.

Table 9 Pairwise Granger Causality Tests

Date: 12/21/24   Time: 12:40

Sample: 2009 2019

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
LNLQR does not Granger Cause LNPROFITABILITY	270	5.06484	0.0069
LNPROFITABILITY does not Granger Cause LNLQR		1.16264	0.3142

4.5.2 Pedroni Residual Cointegration Test

The null hypothesis is that there is no cointegration in the variables. Rho, PP, ADF and v statistics are used. Failure of any of the test imply presence of cointegration in the series at the significant level (Suyanto, Prasilowati, Safiri & Jayadi, 2024). Cointegration test in table 10 indicate that Panel Rho-statistics and ADF tests have probability values of 1.0000 and 0.3150 respectively, hence no evidence of cointegration and further testing required. Panel v-statistics and PP test have probabilities of 0.9993 and 0.0000 which strongly suggest that the series is likely to be cointegrated. Thus the null hypothesis that there is no cointegration is rejected for both the panels and the group. Hence there is evidence of cointegration in the series. Upon discovery of cointegration in the series then the regression can be obtained without false results using Vector Error Correction Model (VECM).

Table 10 Pedroni Residual Cointegration Test

Series: LNPROFITABILITY LNLQR LNSVR LNSTR LNFOREX LNOPR

    LNFS

Date: 12/21/24   Time: 12:46

Sample: 2009 2019

Included observations: 330

Cross-sections included: 30

Null Hypothesis: No cointegration

Trend assumption: No deterministic trend

User-specified lag length: 1

Newey-West automatic bandwidth selection and Bartlett kernel

Alternative hypothesis: common AR coefs. (within-dimension)

	Statistic	Prob.	Weighted Statistic
Panel v-Statistic	-3.211565	0.9993	-4.280888
Panel rho-Statistic	6.002429	1.0000	6.734447
Panel PP-Statistic	-13.75934	0.0000	-6.777566
Panel ADF-Statistic	-0.481617	0.3150	-0.247294

Alternative hypothesis: individual AR coefs. (between-dimension)

	Statistic	Prob.
Group rho-Statistic	8.546428	1.0000
Group PP-Statistic	-15.88165	0.0000
Group ADF-Statistic	1.792563	0.9635

4.6 Hausman Test

The test null hypothesis is that random effect assumptions hold (Random effect model is appropriate). The Hausman test results in table 11 indicate that individual variables probability values are greater than the significant value. The panel (group) probability value is equally greater than the significant value of 0.01. Hence, there is no evidence of violation of the random effects assumptions. The decision to use random effect model holds and is justified.

Table 11 Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.442341	6	0.4885

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
LNLQR	-0.118572	-0.189831	0.001854	0.0980

4.7 Inferential Analysis, Findings and Testing of Hypotheses

4.7.1 Correlation Analysis

Findings in table 12 indicate that liquidity risk has correlation coefficient of -0.1346 with profitability. This shows that an increase in liquidity risk (LNLQR) will result in a reduction in profitability among the nonfinancial companies. The correlation clearly indicate that a linear relationship exists between the variables.

Table 12 Correlation Matrix Criterion

	LNPROFITABILITY	LNLQR	LNSVR	LNSTR	LNFOREX	LNOPR	LNFS
LNPROFITABILITY	1	-0.1346	0.0323	0.2779	0.0596	-0.4109	-0.0702

4.7.2 Simple Regression Analysis

Testing was done to establish the relationship between liquidity risk and profitability. Random effect model was employed. The main purpose was to determine the effect of liquidity risk on profitability of nonfinancial quoted companies. Table 13 is used to report the test output.

Table 13 Regression for Liquidity Risk and Profitability

Dependent Variable: LNPROFITABILITY

Method: Panel EGLS (Cross-section random effects)

Date: 12/21/24   Time: 22:52

Sample: 2009 2019

Periods included: 11

Cross-sections included: 30

Total panel (balanced) observations: 330

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.492804	0.173719	-14.34962	0.0000
LNLQR	-0.345125	0.100118	-3.447178	0.0006

Effects Specification		S.D.	Rho
Cross-section random		0.885365	0.3932
Idiosyncratic random		1.099839	0.6068

Weighted Statistics			
R-squared	0.035043	Mean dependent var	-0.850676
Adjusted R-squared	0.032102	S.D. dependent var	1.116583
S.E. of regression	1.098515	Sum squared resid	395.8093
F-statistic	11.91168	Durbin-Watson stat	1.205216
Prob(F-statistic)	0.000631		

Unweighted Statistics			
R-squared	0.030611	Mean dependent var	-2.425277
Sum squared resid	638.7846	Durbin-Watson stat	0.746786

The fitted model is presented as in

Profitability=-2.4928-0.345125LQR

From the table 13, the coefficient of determination (R-squared) is 0.035043 with a model probability of 0.000631. The model emphasize that 3.5043% of the changes in profitability are explained by liquidity risk (LQR) and this is statistically significant. This means 3.5043% of the changes in profitability are accounted for by movement in liquidity risk. The outcomes reveal that liquidity risk has a coefficient of -0.345125 with a probability of 0.0006. Hence, the effect of liquidity risk is negative and statistically significant as the p-value is less than the significant value of 0.05. It is therefore clear that, the null hypothesis which state that liquidity risk has no influence on profitability is rejected. This imply that a unitary increase in liquidity risk would result in a decrease in profitability by 0.345125 units holding other factors constant. This findings show that a high liquidity risk hurts profitability of nonfinancial companies. This results are corroborated by Eltweri *et al,* (2024) claim that companies with high liquidity risk may face challenges such as inability to liquidate assets and failure to honour financial obligations when they mature.

These findings are consistent with Eltweri *et al,* (2024) who reported that liquidity risk had a negative and significant effect on profitability measured by ROA and ROE among the listed financial institutions in the United Kingdom (UK). The investigation happened within the periods spanning from 2015 to 2021. In another research by Mwangi *et al,* (2019) on liquidity risk and unit trust price volatility among the quoted companies in Kenya from 2009 to 2017, published contradictory results. Mwangi *et al,* (2019) disclosed that liquidity risk had a positive and significant influence on unit trust price volatility. Furthermore, Ngunjiri *et al.* (2025) interrogated the effect of liquidity risk on performance from 2013 to 2022. Ngunjiri *et al.* (2025) found that liquidity risk had a positive and significant effect on performance in the financial sector in Kenya. These later results by Mwangi *et al,* (2019) and Ngunjiri *et al.* (2025) ignites more debate on the liquidity risk and profitability nexus as they disagree with the current study's outcomes.

5. CONCLUSIONS

The main aim of the investigation was to establish the impact of liquidity risk on profitability of nonfinancial companies. The results revealed that liquidity risk had a negative and significant effect on profitability. The research conclude that, liquidity risk is a significant component that determines the profitability of nonfinancial companies. Nonfinancial companies run their operations using liquidity. Inadequate liquidity or too much liquidity rises the liquidity risk level and this would pose a major challenge for nonfinancial companies' returns. Company management should therefore consider the level of liquidity risk as they engage in investment decisions.

Recommendations

Nonfinancial companies should critically examine liquidity risk to sustain and improve their profitability. The management should strike a balance between assets and liabilities in order to contain liquidity risk. Nonfinancial companies should strive to maintain optimal level of liquidity as levels above optimal or below optimal tend to increase liquidity risk which lowers their profitability. Shiftability theory which claims a negative relationship between liquidity risk and profitability encourages nonfinancial company managers to transfer the risk factor to a third party through insurance. Managers can then make use of excess liquidity by investing in diverse and productive projects to reduce liquidity risk exposure and generate more profits for nonfinancial companies. The management should increase their awareness of the company liquidity position in diverse investments. This will assist in improving investment portfolio and provide the company with competitive advantages in the industry. Maintaining a healthy liquidity position will positively influence the profitability of nonfinancial companies.

Future Research

The current inquiry on liquidity risk and profitability covered a period of 11 years. The sample used in this study was 30 companies. Further study should cover extended period of at least 20 years. Long term analysis would be beneficial as it would capture significant events such as pandemics, financial crisis, policy shifts and other macro-economic factors that are to impact on firm behaviour and response. This will help in capturing the potential impact across the economic cycles. Future studies should also increase the sample size to large samples. This will increase the reliability of the study outcomes and conclusions.

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