

Assessing the Impact of Bank Liquidity on the Performance of Banks in Ghana

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ABSTRACT

The ability of banks to perform their core role effectively depends largely on liquidity. In this study, the main objective is to examine the impact of bank liquidity on the performance of banks in Ghana. The study used both regression (pooled regression) and descriptive methods. The main findings indicate that liquidity has a positive impact on the performance of the bank. Further, interest income, efficiency of management staff as bank-specific factors promote liquidity of the banks. For macroeconomic variables, exchange rate volatility showed a significant inverse effect on the liquidity. As policy implication, management should adopt best liquidity management practices and a more efficient and advanced approaches to improve efficiency. This can be achieved by taking advantage of the revolution in Information Telecommunication (IT) and the mobile telecommunication industry. Also, the banks should reduce their concentration of loans and diversified to other less risky but attractive areas such as investment into government securities.

Keywords: bank liquidity, Return on Asset, Return on Equity, bank performance

Introduction

Banking firms have become the key global foundation of every nation's socio-economic growth, and Ghana is no exception. Banks function as a means of economic growth and development in the new global economy (Geiger et al. 2019; Anbar and Alper, 2011). The ability of banks to perform their core roles effectively (provide loans and accept deposits) depends enormously on liquidity. Liquidity serves as the blood of banks; banks are unable to survive without it. Although liquidity is part of the key sources of the vulnerability of a bank, it provides justification for its protection in bank running times (Musah, 2022, Gobat 2021). Banks liquidity paves space for mass depositors to withdraw at an unannounced time factor as banks issue out demand deposits, creating a discrepancy between the asset and liability of a bank where unbalanced liquidity will emerge to promote liquidity risk (Fungacova et al. 2015; Ismal, 2010). The preference of individuals for liquidity is due to the fact that they are unsure about the timing of their intake. During the imminent past financial dilemmas, liquidity was a critical issue (Canlas et al. 2018). During the study period, many banks in Ghana found themselves in situations where they were unable to settle their financial liabilities as they were due.

Banks own liquidity, and their function as providers of liquidity are intricately related (Elliott, 2014). Fundamentally, most banks are willing to supply less liquidity to the market as they need more liquidity

for themselves (Sing et al. 2016). Banks minimize their liquidity risk by holding more liquid assets. The holding of liquid assets that exceed the requirements is called a liquidity cushion or buffer that helps banks meet these liquidity needs in times of elevated liquidity pressure. Thus, having a liquidity buffer decreases the amount of liquidity a bank can produce in normal times for the market.

Many banks have faced some difficulties during the recent global financial crisis because they have not been able to handle liquidity in a prudent way (Aboagye, 2020). The financial crisis faced by banks in Ghana had also illustrated the importance of liquidity for the proper functioning of the financial markets and the banking sector. Financial intermediaries were stable before the financial crisis as financing was readily available and at a low cost (Musah, 2022). The negative turnaround of the market conditions showed how rapidly liquidity can evaporate. Illiquidity can reverse profits already earned as financial institutions are either compelled to deplete their profits, sell assets well below their market value or at worst borrow at interest rates higher than their weighted asset return (Baldo et al. 2022, Coste et al. 2021). Due to liquidity crisis, some financial institutions in many countries have collapsed or compelled to amalgamate in order to stabilize their respective financial structures (Claessens et al. 2014; Longworth, 2010, Grauwe, 2008). Na-Ihmatu (2015) posits that liquidity risk concerns should not be underestimated because the unexpected liquidity problem affecting one major bank in a country can cost the entire financial industry entirely and thereby influence the working of the entire economy. The market havoc that erupted in mid-2007 shed further light on how the financial markets and the banking sector together have great influence on liquidity (Bank for International Settlements, 2018).

Sheikhdon et al. (2016) posit that poor liquidity threatens the lending ability of banks, makes them vulnerable and even destabilizes their conditions. Most banks in Ghana experienced similar situations thereby compelling central bank's (BOG) recent quest to improve the industry. Recent mismanagement of funds by some banks and improper regulation by the Ghanaian central bank have contributed to the failure of banks in the sector, leading depositors to panic (Bank of Ghana, 2023, 2021). The result of this is the recent withdrawal of deposits, creating liquidity crises within the industry (Bank of Ghana, 2021). Kwamina (2018) opines that Ghana's banking sector, which is rife with credit problems, needs to change its stance on credit problems, and that it will only be effective if corporate companies also improve their credit settlement actions. In an attempt to meet the central bank's recapitalization, most banks in the industry, indigenous banks in particular are trying to reserve as much deposit as possible while at the same time trying to meet the withdrawal demands of their cherished customers (Ashiagbor, 2019).

There has been a considerable amount of literature on the impact of liquidity on the performance banks (Opoku-Agyeimag et al. 2021; Aboagye, 2020; Boadi et al, 2016; Na-Ihmatu 2015; Gyamerah & Amoah, 2015; Opoku-Agyeamang, 2015). The available literature on the subject matter does not sufficiently draw a close to the debate, as more dynamics are emerging in the banking industry.

Empirical Review

An examination of liquidity management and profitability among Nigerian banks showed that the liquidity management and profitability are significantly related (Adebayo et al.2011). Obilor-Ibe (2012) posits that liquidity has a substantial effect on the profitability of different banks. The study utilized liquidity proxies including cash and short-term funds, bank balances and treasury bills, as well as certifications to assess

possible correlations with the performances of the banks. The study shows that the impact of liquidity on bank performances differ from bank to bank, depending on the business model of the bank and the state of the bank's economy. Shahchera (2012) found evidence of a non-linear relationship between profitability and liquid asset holdings using a sample of Iranian listed banks and panel data from 2002-2009.

Richard et.al (2018) posit that liquidity of Ghanaian banks listed in the stock market is positively associated with both return on assets and return on equity. On the contrary, Lartey et. al. (2013) examined the effect of liquidity on the profitability of listed banks in Ghana with the conclusion that the regression and correlation analysis between liquidity and profitability of the listed banks was a weak positive one, and therefore statistically insignificant relationship. Using generalized least square approach with unbalanced panel data of 8 banks, Simon (2016) concludes that liquidity gap and bank deposits have significant positive effects on profitability. Also on the influence of bank-specific-factors on commercial banks profitability in Ghana, Ibrahim (2017) employed ordinary least square regression and indicated that bank size, liquidity, capital adequacy, asset management, expense management, and real interest rate were positively related to profitability. The study used data from the annual financial statements of five commercial banks from 2010 to 2015. Using data sets (2011-2015) from 15 Jordanian banks listed at Amman Stock Exchange (ASE), Nimer et al. (2013) argued that liquidity had a huge negative effect on profitability. They attribute this reverse relationship to the fact that the banks could not spend their surplus money in order to produce another source of profit due to excessive liquidity.

Methodology

Data Sources

The study used secondary data from eleven (11) Ghanaian banks. The data for this study was obtained from 2008 to 2018. The time period selected was based on the reason that it provided recent time series observations and it also represented a period of major changes for the Ghanaian banking system; typified by the universal banking principle resulting from the enactment of the Banking Act, 2004 (Act 673). The study sourced the data from the Annual Financial Reports of the selected banks from Price Water Cooper's (PWC) Annual Reports. The banks were purposively sampled due to data availability. The sampled banks were; Ghana Commercial Bank (GCB), Agricultural Development Bank (ADB), CAL Bank (CMB), ECOBANK, STBC, National Investment Bank (NIB), ZENITH Bank, Fidelity Bank, Republic Bank, Access Bank and Prudential bank.

Econometric Technique

The study employed pooled regression technique to establish the relationship between bank specific factors and the performances of the banks. The regression equation equations were logged because, first, it eliminates hetroscedascity. Secondly, coefficients sufficiently measure elasticities. Following from the reviewed literature, equation 1 measures the effects of liquidity on returns on asset. In this study, return on assets (ROA) measures the bank's performance.

$$\ln ROA_{it} = \beta_1 + \beta_2 \ln lqty_{it} + \beta_3 \ln bs_{it} + \beta_4 \ln npl_{it} + \beta_5 \ln effi_{it} + \beta_6 \ln infl_{it} + \beta_7 \ln nim_{it} + \varepsilon_{it} \dots \dots \dots 1$$

The subscript i refers to the individual banks and t is the time period.

Where $i = 1,2,3 \dots \dots \dots N$

$t = 1,2,3 \dots \dots \dots T$

and β_s are regression coefficients to be estimated which show the effects of the independent variables on the dependent variable.

$lnlqty$ measures liquidity which is total loans granted as a ratio of total customers' deposits.

$lnnpl$: this is bad debts relative total loans

$lneffi$ measures management efficiency, $lninfl$ is level of inflation.

$lnbs$ is the bank size (bank totals assets). Finally, $lnnim$ is the interest income.

Since the liquidity of banks are influenced by prevailing macroeconomic conditions, equation 2 was estimated as follows;

$$lnlqty_{it} = \beta_1 + \beta_2lnnim_{it} + \beta_3lnbs_{it} + \beta_4lneffi_{it} + \beta_5lnexrate_{it} + \beta_6lngs_{it} + \beta_7lngov_{it} + \varepsilon_{it} \dots \dots \dots 3$$

Where , $lnnim$, $lneffi$, $lnbs$ are bank-specific factors and they denote the same meaning as in equation 1. However, $lnexrate$ is log of exchange rate, $lngs$ is the log of gross savings in the economy and finally, $lngov$ is the log of government expenditure. These are macroeconomic factors as informed in literature. Both Equations 1 and 2 were estimated using pooled regression technique since the data was in a form of a panel. The study could not use either fixed effect or random effect because these techniques are appropriate if $T > N$. However, in this study, we have 11 banks which is N and 11 years which is the T .

Analysis

Descriptive Statistics

The effects of bank liquidity on the performance of the banking industry in Ghana was examined. The descriptive results are presented in Table 1. The Summary statistics indicate that the mean values of bank specific factors such as non-performing loans (NPL), net interest income (NIM), efficiency of management staff (EFFI), return on asset (ROA) and bank liquidity (Lqty) were; 0.036, 0.084, 0.563, 1.221 and 0.833 respectively. Of greater interest in this study is the bank liquidity. The summary statistics show that during the period under consideration, the banks retained substantial liquidity (83.3%). The large liquidity retention implies that the banks could easily meet maturing liabilities without facing any liquidity crisis.

In respect of the macroeconomic variables, the mean values were; 12.97, 16.57, 16.67, and 1.53 for Inflation (Inf), gross savings (GS), government spending (Gov) and exchange rate (ExRate) respectively. Thus, yearly average inflation was about 13% while gross savings as a percentage of gross domestic product was 16.67%. Government expenditure and exchange rate were 16.7 and 1.5 respectively.

Table 1: Summary of Statistics

Variable	Observation	Means	Std Dev	Min	Max
NPL	118	0.03637	.0519816	-0.00800	0.49000
NIM	118	0.08380	.0792377	0.00000	0.85000
EFFI	118	0.56349	.1831624	0.00000	1.01000
ROA	118	1.22132	1.885223	-0.02500	7.00000
LQTY	118	0.83370	1.199364	0.12300	10.29000
INFL	118	12.97011	4.182966	7.13100	19.25100
GS	118	16.57284	2.729034	9.34257	19.99172
GOV	118	16.67451	3.693979	10.35531	20.88796
EXRATE	66	1.52657	.2903453	1.05786	1.95405

Source: Author’s own calculations, 2020

Analysis of bank-specific factors and macroeconomic variables on bank liquidity

The study estimated the impact of selected bank-specific and macroeconomic variables on bank liquidity. The explanatory variables were; net interest income, bank size, efficiency of bank management staff (bank-specific factors), exchange rate, gross savings and government spending (macroeconomic factors). The pooled regression revealed the results on Table 2.

The results indicated that interest income denoted by *lnnim* was positively related to liquidity and statistically significant. The coefficient indicates that a 1% increases in interest income contributed to a more proportionate increase in bank liquidity of about 4%. The result was statistically significant at 1% as revealed by Table 2. On the contrary, bank size reveals a negative effect on liquidity but statistically insignificant. The result implies that bank size is inversely related to liquidity of the bank albeit insignificant.

Another important bank-specific factor considered in the study was banks’ efficiency. This variable measures and represents the efficiency of management staff. The effects of this bank-specific factor is in line with the expectation of the study. It reveals a statistically significant positive effect on banks’ liquidity. As the banks’ management staff is improved, it leads to improvement in liquidity. This is in line with theory. Thus, more and more improved management skills will lead to improved liquidity of the bank to operate efficiently. Specifically, the study indicated that a 1% improvement in the efficiency level of management staff will lead to about 0.3% improvement in liquidity. This outcome is consistent with the findings of Alharbi (2017).

On the effects of macroeconomic factors considered in the study, exchange rate changes reveal a statistically significant negative effect on liquidity. Thus, an increase in exchange rate (depreciation of the cedi) will lead to reduction in banks’ liquidity. This is because the depreciation of the local currency contributes to inflation and thereby stimulates withdrawals by depositors to meet their consumption and import needs since the economy is largely import dependent.

Furthermore, gross savings (as a ratio of GDP) and government expenditure both indicated positive effects on liquidity but both coefficients were statistically insignificant in determining liquidity of the banks.

Table 2: Effects of bank-specific and macroeconomic factors on liquidity

Variables	Lnlqty
Lnnim	4.292*** (1.065)
Lnbs	-0.000499 (0.00579)
Lneffi	0.329** (0.131)
Lnexrate	-0.380* (0.214)

Lngs	0.0433 (0.130)
Lnlgov	0.116 (0.148)
Constant	-1.128** (0.536)
Observations	66
R-squared	0.286

Table 3 shows the results of the pooled regression. The baseline regression is column 6. Table 3 indicates that not only does liquidity reveal its theoretical expectation of positive effects on bank performance, but was also statistically significant at 5% significance level. The results suggest that a 1% increase in banks' liquidity will lead to about 0.7% increases in returns on assets. This finding is consistent with the study of Alshatti (2015). This study further examined the robustness of the results by estimating equations 1 to 5 by adding the explanatory variables one after the other to check if the liquidity coefficient will lose its significance at some point. As can be observed from Table 3, the liquidity variable demonstrates its positive effects on return on assets from equations 1 to 5. This demonstrates that the estimated results were not by chance and that liquidity of a bank is an important determinant of performance. The findings of this study are consistent with similar studies on the impact of liquidity on performance indicators as in (Kavale (2016), Olongo (2013), Wanjohi (2013). However, the findings are inconsistent with those of Bassey (2015), Molefe and Muzindutsi (2016) and Vintila, and Nenu (2016).

Like liquidity, bank size also demonstrated a statistically significant positive impact on the banks' performance in all equations in Table 3. The baseline equation shows that a 10% increases in banks' size results in about 2.4% increases in the performance of the banks. In other words, an increase in banks' assets to total assets of all banks by 1% leads to about 0.24% increase in the banks' performance. This outcome is consistent with the aprior expectation of the study.

Table 3: Effects of liquidity and other variables on Return on assets

Variables	(1) Lnroa	(2) lnroa	(3) Lnroa	(4) Lnroa	(5) lnroa	(6) lnroa
Lnlqty	0.516* (0.295)	0.792** (0.308)	0.760** (0.293)	0.760** (0.293)	0.747** (0.293)	0.685** (0.299)
Lnbs	0.221*** (0.0345)	0.228*** (0.0338)	0.246*** (0.0325)	0.246*** (0.0325)	0.247*** (0.0325)	0.239*** (0.0333)
Lnnpl		-10.82** (4.222)	-10.17** (4.019)	-10.17** (4.019)	-10.90*** (4.081)	-11.26*** (4.095)
Lneffi			2.767*** (0.743)	2.767*** (0.743)	2.835*** (0.746)	2.989*** (0.761)
Lninfl					0.535 (0.518)	0.564 (0.519)

Lnnim						5.945 (5.764)
Constant	-3.199*** (0.278)	-2.700*** (0.334)	-4.423*** (0.561)	-4.423*** (0.561)	-5.781*** (1.429)	-6.365*** (1.537)
Observations	126	126	126	126	126	126
R-squared	0.256	0.294	0.367	0.367	0.373	0.378

Source: Author’s own construct, 2020

Other explanatory variables include non-performing loans and efficiency of bank management staff, both of which constitute bank-specific factors. Non-performing loans reveals an inverse relationship with the banks’ performance. It shows that as non-performing loans increases, the banks’ performance is reduced. Non-performing loans are considered as bad debts to total loans and this clearly demonstrates that it may reduce liquidity and for that matter the banks’ performance. This bank-specific variable (non-performing loans) is robustly significant from equations 2 to 5 indicating that its negative effect on the performance of banks cannot arise by chance. On the other hand, efficiency of management staff indicated a positive effect on the banks’ performance. This means proper management of the bank leads to higher performance. The elasticity indicates in the base line equation that, a 1% increases in management staff efficiency, will lead to a more than 1% increase in performances of the banks as shown in Table 3. This result is also robust as shown from equations 3 to 5.

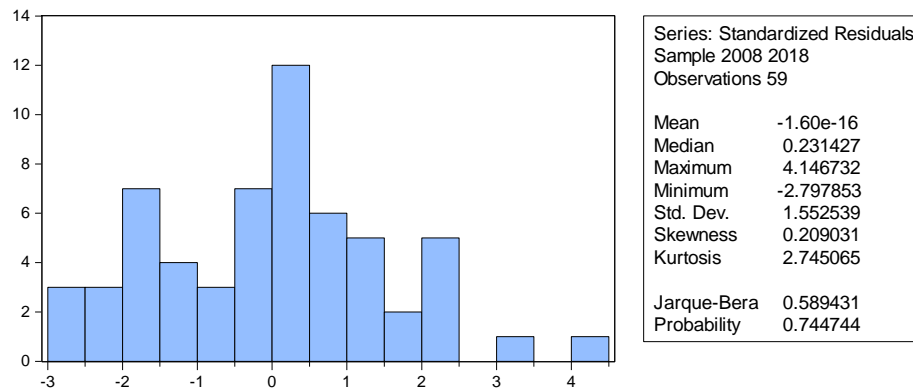
Contrary to aprior expectations, inflation shows a positive effect on bank performance, it was however statistically insignificant. Finally, interest income indicates its theoretical expectation of positive effects on banks’ performance albeit insignificance levels as shown in Table 3.

The study concludes that the ability of banks to perform their core role of providing loans and accepting deposits depend enormously on liquidity. Liquidity constitute the heartbeat and/or blood of the banks. Bank-specific and macroeconomic factors have significant influences on bank liquidity. The most influential explanatory variables determining bank liquidity in this study are; interest income, efficiency of bank management staff and exchange rate volatility.

In view of the recent failures of many banks in the Ghanaian economy to meet their liquidity requirements, it is important for the government and policy makers to pay special attention to the key variables affecting bank liquidity. Banks should adopt best liquidity management practices and a more efficient and advanced approaches to improve efficiency. This can be achieved by taking advantage of the revolution in Information Telecommunication (IT) and the mobile industry. Also, the banks should reduce their concentration on interest on loans as major source of profit and diversify to other less risky but attractive areas.

Appendix

Figure 1: Normality Test



References:

1. Aboagye A.Q. (2020). Ghana banking crisis of 2017-2019 and related party transactions. African Journal of Management Research, Adebayo, O. Adeyani O. and Olabode, O. (2011): Liquidity Management and Commercial Banks Profitability in Nigeria. Research Journal of Finance and Accounting 2(7/8): pp. 24.
2. Al-Harbi, A. (2017). Determinants of banks liquidity: evidence from OIC countries. Journal of Economic and Administrative Sciences, 33(2), 164–177. <https://doi.org/10.1108/JEAS-02-2017-0004>
- Alshatti, A. sulieman. (2015). The effect of credit risk management on financial performance of the Jordanian commercial bank. Investment Management and Financial Innovations, 12(1), 338– 345. <https://doi.org/10.5897/AJBM2013.7171>
3. Anbar, A. and Alper, D. (2011) ‘Bank specific and macroeconomic determinants of commercial bank profitability: empirical evidence from Turkey’, Business and Economics Research Journal, Vol. 2, No. 2, pp.139–152.
4. Ashiagbor V. (2019). Banking reforms so far: topmost issues on the minds of bank CEOs.
5. Baldo L., Heider F., Hoffman P., Sigour J.D., and Vergote O. (2022). How do banks manage liquidity? Evidence from the European Central Bank’s tiering experiment.
6. Bank for International Settlements. (2018). Basel III: Principle of sound liquidity risk management and supervision. Basel Committee on banking Supervision. Retrieved from <https://www.bis.org/publ/bcbs188.pdf>
7. Bank for International Settlements. (2010). Basel III: International framework for liquidity risk measurements, standards and monitoring. Basel Committee on banking Supervision. Retrieved from <https://www.bis.org/publ/bcbs188.pdf>
8. Bank of Ghana (2023). Regulatory role of the Bank of Ghana in the financial intermediation industry.
9. Bank of Ghana (2021). Financial Stability Review
10. Bank of Ghana (2020). Bank of Ghana Monetary Policy Report, banking sector report.
11. Bassegy, G. and Moses, C. (2015). Bank Profitability and Liquidity Management: A Case Study of Selected Nigeria Deposit Money Banks. International Journal of Economics, Commerce and Management.
12. Boadi, E., Li, Y., & Lartey, V. (2016). Determinants of Liquidity of Rural and Community Banks in Ghana. British Journal of Economics, Management & Trade, 12(3), 1–15. <https://doi.org/10.9734/BJEMT/2016/24121>
13. Claessens S. and Kose A.M. (2014). Financial crisis: explanations, types, and implications

14. Canlas B.D., Noe J.R., and Remolona M.E. (2018). Do small bank deposits run more than large one? Three event studies of contagion and financial inclusion.
15. Coste C.E., Techeng C., and Vansielegheem I. (2021). One size fits some: Analysing profitability, capital and liquidity constraints of custodian banks through the lens of the SREP methodology.
16. Diamond, Douglas W., and Philip H. Dybvig. 1983. Bank Runs, Deposit Insurance, and Liquidity. *Journal of Political Economy* 91: 401–19.
17. Dore, M. (2013). An Empirical Analysis of Bank Profitability in Ghana: Evidence from Bank-Specific and Macroeconomic Factors, (January).
18. Elliott D.J. (2014). Bank liquidity requirements: An introductory overview.
19. Fungacova Z., Turk R., and Weil L. (2015). High liquidity creation and bank failures. IMF Working Paper.
20. Grauwe D.J. (2008). The banking crises: causes, consequences, and remedies
21. Gobat J. (2021). Banks: At the heart of the matter. Policy Research Working Paper.
22. Gyamerah, I. A., & Amoah, B. (2015). Determinants of Bank Profitability in Ghana, 5(1), 173–187. <https://doi.org/10.5296/ijafr.v5i1.7368>
23. Geiger M., Trencezek J., Konstantin W.M (2019). Understanding the economic growth in comparative perspective. IMF Policy Research Working Paper 8699
24. Ibrahim S.S. (2017). The impact of liquidity on profitability in banking sectors of Iraq: A Case of Iraqi Commercial Banks. *International Journal of Financial Banking Studies* (2147-4486). 6(1). 113-121.
25. Ismal R. (2010). Managing banking liquidity risk in the current economic conditions: A Conceptual Framework.
26. Lartey V.C., Antwi S. and Bosadi K.E (2013). The relationship between liquidity and profitability of listed banks in Ghana.
27. Longworth (2010). “Bank of Canada Liquidity Facilities: Past, Present, and Future”
28. Molefe, B. & Muzindutsi, P. (2016), Effect of Capital and Liquidity management on Profitability of Major South African Banks. Proceedings of the 28th Conference of the South African Institute of Management Scientists.
29. Na-ihmatu, S. (2015). College of Humanities University of Ghana Explaining Bank Liquidity in Ghana by Na-Ihmatu-Sumaila This Thesis is submitted to the University of Ghana, Legon in Partial Fulfillment of the Requirement for the Award of Master of Philosophy (Mphil) Finance.
30. Nimer, M, Warrd, L. & Omari, R. (2013). The impact of liquidity on Jordanian Banks profitability through return on Assets. *International journal of contemporary research in business* 5(7), 70-76.
31. Nisar, Shoaib; Wang, Susheng; Jaleel, Ahmes; Peng, K. (2015). Determinants of Banks’ Profitability in Pakistan: A Latest Panel Data Evidence, III (4), 1–16.
32. Olongo, O. (2013). The Effects of Financial Fraud and Liquidity Management On Financial Performance of Commercial Banks in Kenya. Unpublished MBA Project, University of Nairobi.
33. Opoku-agyemang, D. A. (2015). Factors influencing the profitability of Domestic and Foreign banks in Ghana, (201308805)
34. Opoku-Agyeiman O., and Ayim O.I (2021). The Effect of Credit Risk on the Profitability of Banks Listed on the Ghana Stock Exchange.
35. Richard C. Alhassan M., Evan A., and Erasmus G. D (2018) The Impact of Liquidity on Performance of Commercial Banks in Ghana.
36. Shahchera .M (2012) The impact of liquidity on Iranian bank profitability. *Journal of Money and Economy*, vol 7, 1, October, p 139-160

37. Sheikhdon, A. A., & Kavale, S. (2016). Effect of Liquidity Management on Financial Performance of Commercial Banks in Mogadishu, Somalia. *International Journal for Research in Business, Management and Accounting*, 2(5), 101–123.
38. Singh, A., & Sharma, A. K. (2016). An empirical analysis of macroeconomic and bank-specific factors affecting liquidity of Indian banks. *Future Business Journal*, 2(1), 40–53. <https://doi.org/10.1016/j.fbj.2016.01.001>
39. Vintila, G. & Nenu, E.A. (2016), Liquidity management and Profitability Analysis on the Romanian Listed Companies. *Journal of Eastern Europe Research in Business& Economics*, Vol 2016, 1-8.
40. Wanjohi, G. (2013). The effect of financial risk management on the financial performance of commercial banks in Kenya. Unpublished MBA Project, University of Nairobi.