LIQUIDITY AND PERFORMANCE OF BANKS LISTED ON THE GHANA STOCK EXCHANGE

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Abstract

The aim of the study was to examine the effect of liquidity on the performance of banks listed on the Ghana Stock Exchange. The study employed annual panel data of 8 out of the 9 banks listed on the Ghana Stock Exchange. The random effect model was used with the aid of Hausman test. The data used for the study spans from 2015 to 2019. The study found among other things that 34.8% variation in the return on asset of banks listed on the Ghana Stock Exchange can be explained by sales growth rate, firm size and liquidity. The study revealed that liquidity and sales growth do not have any statistically significant effect on the profitability of banks listed on the Ghana Stock Exchange. However, the size of a bank in terms of its total assets has a significant effect on the profitability of banks listed on the Ghana Stock Exchange. The study finds that liquidity and sales growth do not have any statistically significant effect on the profitability of banks listed on the Ghana Stock Exchange, the size of a bank has statistically significant effect on the return on assets of banks listed on the Ghana Stock Exchange. It was recommended that banks listed on the GSE must work on reducing their interest expense to enhance their liquidity positions. Managers of banks listed on the GSE must work at increasing their asset base as there exists a significant relationship between size and profitability

Keywords: liquidity; performance; banks listed;

INTRODUCTION

There can be no undermining of the role of the financial sector in economic life. Banks' role in financial intermediation means that funds are channelled from surplus units to deficit units. The Bank is a financial intermediary that provides excess funds for parties which need funding at the specified time (Purbaningsih & Fatimah, 2014). "Acceptable financial intermediation needs a decisive approach from the management of the banks to profitability and liquidity, which are two conflicting goals of banks," (Imegi & Ogbeide, 2017).

The Bank has an undeniable role to play in boosting the national economy, as banks are collectors of surplus funds and credit providers, deficit units, reliable and active community savings and promote payments across all economic sectors (Malayu & Hasibuan, 2005: 3). Trust is a very important factor in the achievement of this important role in financial intermediation.

In 2017, the financial sector crisis led to the collapse of Ghana's banks, as well as the merger of other financial institutions. Financial sector investors in Ghana are worried that this all-important element anchors a strong financial industry. Liquidity is one of the most significant objectives in managing working capital and the key goal of maximizing sales and financial output of the business. After the 2007-2008 global financial crisis (also known as GFC), it has gained the forefront of banking and finance. This is due to an abundance of liquidity from the high risk-taking in United States (US) banks which led to the GFC of 2007-

2008. A liquidity danger and/or deteriorating liquidity situation means that companies are deprived of the liquidity required by the Du Pont equation to handle operations that form a key part of profitability.

Liquidity has survived over time since the era of the "Great Depression in the 1930s" till date. This period renders liquidity management the difficulty task from its source, uses, risk and its effect on firm performance (Nyamador, 2021). Liquidity is the bank's capacity to fund asset rises and to satisfy debts, without inadmissible losses (BIS, 2008). The IFRS 2005 indicates that liquidity risks are the possibility of an organization experiencing difficulties in fulfilling financial liabilities commitments. GARP (2015) believed that liquidity was basically a short-term issue triggered by unforeseen short-term liabilities and long-term liabilities that had negative impacts on corporate financial performance. The market power theory aids in examining the performance of banks. It postulated that some banks make higher profit because they are more effective than others and especially in minimizing risks (Olweny & Shipho, 2011).

(Ejike & Agha, 2018) perceive liquidity management as managing the risk of resources of a firm to have efficient liquidity equity with the profit of the firm. In their work, Elloumi and Gueyie (2001) concluded that failure to fulfil contractual debt obligations because of bad income is the main factor in identifying liquidity companies. This has a negative influence on the financial condition of businesses. Halling & Hayden, (2006) describe the need to define the liquidity risk of an organization. The liquidity requirements of a company and the sources of liquidity at its disposal greatly depend on its on-and off-balance sheet commitments performance in its market and product mix, balance sheet structure and cash flow profile.

Any negative developments in the banking field would have a negative effect on all other sectors of the economy, the opposite is also true, because banks are interrelated with other economic sectors. This makes the industry a very significant contributor to every economy's progress. This makes it important to research how events in this field are fully understood. A search in the area of liquidity on performance shows less work done in the banking and financial sector. There is a significant investigative void which must be filled. The literature on the impact of liquidity on banks was reviewed systematically in (Mairafi et al., 2018). The authors observed that bank liquidity has a major effect upon bank outcomes like banks' profitability, banks' risk-taking behaviour.

Mairafi et al., (2018) considers, however, that all these empirical data were primarily distorted in the growth of the market. This is a strong argument for emerging market studies in the field. In this report, the influence of liquidity on banks' success in Ghana is assessed. The bank's determinants in Ghana have been analyzed by (GEORGE et al., 2014). Amongst other items, the authors found that greater liquidity risks contributed greatly to banks' success. (Ware, 2015) examined the relationship between liquidity administration and the viability of particular companies trading on the Ghana Stock Exchange. The study made use of information from 33 companies over the course of five years, from 2005 to 2009. Liquidity was assessed by the cash change cycle, the average collection duration, and the average payment period, had no significant impact on the returns of the companies.

Agyemang et al., (2023) conducted a study using data from Ghana's publicly traded non-financial companies. Liquidity had a strong relationship with the firms' return on assets (ROA), but had a negligible relationship with the firms' return on equity (ROE) and return on capital employed (ROCE). Moreover, several other studies have found that liquidity risk is one of the factors influencing bank performance. This makes the liquidity risk and efficiency discussion very relevant. The relationship between liquidity risk and other risk types, which it is subjected to, should be fully understood and considered. In carrying out their operations, businesses, in particular financial institutions, face a variety of financial and operational risks. These include risks in terms of interest, loans, operational, law and reputation. These risks have a big effect on the liquidity profile of a firm.

Studies including (Hamdi & Hakimi, 2019; Partovi & Matousek, 2019) indicate that liquidity serves as a basic component of banks' operations and therefore, poor liquidity result in the instability of banks performance and in the long run affects the financial sector in a whole. Hamdi & Hakimi, (2019) posit that low liquidity is realize when banks fail to meet all the request of depositors either in part or whole in a particular time.

The recent developments in the banking sector have resulted in the merging of six banks and consolidation of five banks due to mainly their inability to meet the current minimum capital requirement of the Central Bank of Ghana which is Gh400million. Aside this, some banks' license was revoked due to their insolvency. However, the after-mouth situation led to reduction in deposit by 17 percent and panic withdrawal increased by 13 percent due to liquidity management challenges that have also affected their return on equity (Ghana Banking Survey, 2019). The Central Bank of Ghana has recommended effective liquidity management among the commercial banks. This study aimed at adding to existing knowledge by examining the effect of liquidity on financial institution performance from the perspective of an emerging market.

METHOD RESEARCH

The analysis used quantitative testing methods. Kumar, (2014) defines quantitative research as a structured, objective, systematic method for defining and evaluating relationships, and for analysing interactions between causes and effects of variables. Quantitative research focuses on data collection and interpretation calculation (Agbodjah, 2008). In this approach, mathematical and statistical methods are used to classify evidence and causal relations. It is used for the compilation of numerical data that can be calculated by statistical analysis.

The study was longitudinal research. Ployhart & Vandenberg, (2010) described "longitudinal research as a study of change, containing, on at least one substantive interest building, at least three repetitive observations (although more than three are better). Typically, a longitudinal study makes many findings over a period of time about the same phenomena or subjects (lasting many years or seasons). The analysis adopted panel research design. Typically, panel designs are often longitudinal. These designs calculate each wave of data collection with all the variables of interest. This design was appropriate since it helped the researcher to gather data on 8 solvent listed banks on GSE for 5 years.

Data Type and Source

Basically, the analysis relied on secondary data. They are already data collected on the same or related interest variables of the researchers by various writers and institutions. The data came from the released 2015-2019 GSE Financial Reports. There were 23 solvent banks in Ghana (between the period of 2015 to 2019) as the study population. Nevertheless, the analysis included 8 of those solvent banks. These were the current banks after the recapitalization of banks in 2018 whose have up-to-date information on their financial reports. Study data is accessed on the Ghana Stock Exchange website (GSE). ROA and ROE assess bank efficiency. Other researchers also use ROA and ROE. These include: Najid and Rahman 2011, (Alkhatib & Harasheh, 2012; Almumani, 2013), Roman and Sargu 2014, Rose and Hudgins 2013, and Saeed and Rahman. The liquidity ratio was used as a metric of liquidity calculation. Company size and revenue growth are used as controls to differentiate liquidity's effects on banks' financial performance from other factors that affect financial performance.

Operationalization of variables

The dependent variables used in this research are Return on Equity (ROE) and Earnings per share (ROA) indicating financial profitability. The independent variable, which in this case is liquidity, is denoted by current ratio, sales growth and firm size. The table below summarizes the variables used and how they were computed.

Table 1: The summary of variables used and their expected signs

Variable	Legend	Measurement	Sign
Return on Equity	ROE	net profit before interest and taxes over Equity	
Return on Assets	ROA	Net profit before interest and Tax over total asset	
Independent variables			
Current Ratio	CR	Current Assets/Current liabilities	-
Firm size	FIRMSIZE	Natural logarithm of total assets	+
Sales growth	SG	Sales growth of firm i in time t	+

Time series and cross-sectional data from audited companies' financial statements have been used to produce panel data. It has also been used ideally because it helps to distinguish results that cannot easily be indicated by simply using cross-sectional or series data and other relevant aspects. This study employed explanatory variables such as current ratios, business size and revenue growth debts, thus re-evaluated and re-established assets-based variable.

The data analysis is the process of the systematic application of statistical and logical methods to describe, explain, condense and recap and assess data, according to Prabhat and (Meenu et al., 2015). After this information has been obtained, the data was processed and handled by coding, editing the data if possible, entering the data into the software (STATA software version 15.0) to produce results and cleaning the data finally, in order to eliminate types of error that could not be detected. In addition, the results have been analyzed using descriptive statistics, an analysis of correlation and regression.

RESULT AND DISCUSSION

Table 1: Descriptive Statistics

Variables	Mean	Std Dev	N

ROA	2.3130	2.21921	40
CR	.3513	.14502	40
FS	22.1315	.64799	40
SG	17.0228	29.04004	40

Source: Data from Ghana Stock Exchange (2000-2019)

The Table 2 shows the descriptive statistics of the study. The mean return on asset of banks listed on the Ghana Stock Exchange (GSE) is 2.31, mean current ratio is 0.3513, mean firm size is 22.1315 and the mean sales growth rate is 17.0228% The performance of banks listed on the GSE is very good in terms of ROA. However, banks listed on the GSE are in a very poor liquidity position.

Table 2: Model Summary

R	R^2	Adjusted R^2	Durbin-Watson
.590[a]	.348	.294	1.523

The results from the Durbin-Watson of 1.523 indicates that there is not autocorrelation in the residuals (Table 3). This is because the DW figure is greater than 1.5 but less than 2.5. The Adjusted R-square figure means that 29.4% variation in the return on asset of banks listed on the GSE can be explained by sales growth rate, firm size and liquidity. Thus, about 70 percent of the variation is caused by other factors that were not included in the model. Table 4 shows the strength and nature of relationship between the variables of the study.

Table 3: Correlation Matrix

	ROA	CR	FS	SG
ROA	-	0.212	0.541*	0.223
CR		-	0.113	-0.103
FS			-	0.115
SG				-

N= 40, *Significant (p<0.05)

Table 4 shows that there is a moderate positive relationship between the profitability (ROA) of banks listed on the GSE and sales growth (SG) while there was weak positive relationship between profitability (ROA) and liquidity (CR) and firm size (FS). However, there were weak relation among the independent variables depicting that there was no problem of multicollinearity.

Table 5: Collinearity Statistics

Variable	Tolerance	VIF
CR	0.974	1.027
FS	0.971	1.030
SG	0.973	1.028

Multicollinearity is a general term for the existence of linear associations between explanatory variables. It is used to test the relationship between independent variables. There is no multicollinearity if Tolerance value is greater than 0.10. Also, if Variance Inflation Factor is less than 10, then it means there is no multicollinearity and vice versa. Therefore, there was no problem of multicollinearity among the independent variables because the tolerance values were all greater than 0.10 and the VIF values were all below 10 (Table 5).

Table 6: Effect of Liquidity and banks' performance (ROA)

Model	Std. Coefficient (β)	Error	t	Sig
(Constant)		0.401	-3.579	0.001
CR	.174	0.055	1.278	0.209

FS	.500	0.010	3.660	0.001
SG	.183	0.040	1.343	0.188
F	6.406			
Prob(F-stat)	0.001			

The Table 6 shows the test of significance. From the results presented (F=6.406, p=0.001), it can be concluded that variation of the profitability (ROA) of banks listed on the GSE can be explained by sales growth, liquidity and firm size. Table 6 shows no statistically significant impact on the profitability of GSE-listed banks on liquidity and sales growth. The analysis also does not refute the null hypothesis since they have Sign values greater than 0.05. However, the size of a bank has major consequences for the profitability of the GSE-listed banks in terms of its total assets. Since the test is designed to unravel the relationship between cause and effect, we use standardized coefficients. With a continuing rise in unit size, the profitability of such banks rises by 0.182.

This finding confirms that of Marozva (2015) who points to other studies that observed parallel relationship between these variables. He found that there was a positive relationship between bank liquidity and performance (profitability). Similarly, Agbada and Osuji (2013) examined the efficiency of liquidity management and bank profitability using a survey design, their findings also indicated a positive relationship between effective liquidity management and bank profitability. In addition, Isik (2017) researched on the profitability determinants of 153 quoted real sector businesses in Turkey. The study's results discovered liquidity as a significant determinant of the firms' profitability as measured by ROA.

On firm size, Mpesum (2010) researched on Cal Bank Ghana Ltd. and the factors that influenced profitability of the bank. Results suggest that industry Size was a the most important factor with regards to banks profitability. He observed an "inverse relationship between size and profitability", he therefore concluded that for a bank to be profitable they need to be mindful to their size as well as the bureaucratic issues associated with it.

Table 7: Descriptive Statistics

Variables	Mean	Std Dev	N
ROE	38.0325	94.48556	40
CR	.3513	.14502	40
FS	22.1315	.64799	40
SG	17.0228	29.04004	40

The Table 7 is the descriptive statistics. It can be seen that the mean return on equity of banks listed on the GSE is 38.0325%, mean current ratio is 0.3513, mean firm size is 22.1315 and mean sales growth rate is 17.0228%. The Table 8 shows the correlation between the variables.

Table 8 Correlation Matrix

	ROE	CR	FS	SG
ROE	-	-0.094	0.102	0.155
CR		-	0.113	-0.103

FS	-	0.115
SG		-

Table 8 shows that there is a weak positive relationship between the profitability (ROE) of banks listed on the GSE, Firm size (r=0.102, p>0.05) and sales growth (0.155, p>0.05) while there was weak negative relationship between profitability and liquidity (r= -0.094, p>0.05). However, these relationships were not statistically significant. Nevertheless, there were weak relation among the independent variables depicting that there was no problem of multicollinearity.

Table 4: Model Summary

R	R^2	Adjusted R^2	Durbin-Watson
0.198	0.039	-0.041	2.127
F	0.491		
Prob(F-stat)	0.091		

a. Predictors: (Constant), SG, CR, FS
b. Dependent Variable: ROE

From the model summary (Table 9), it can be seen that there is no autocorrelation in the residuals. This is because the DW results is greater than 1.5 and less than 2.5. It can also be that there exists a weak positive (19.8%) relationship between the return on equity of banks listed on the GSE and the regressors.

F Statistics is used to evaluate if the mean difference between more than two independent (unrelated) groups is important. It thus contrasts the difference in more than two categories. The dependent variable is evaluated on a constant scale and more than two independent classes can be used in the independent variable. When performing the test, F-Test is the value arrived and will decide if the means are different for three or more classes.

The Table 9 shows the test of significance. From the results presented above (F=0.491, p=0.091), it can be concluded that variation of the profitability (ROE) of banks listed on the GSE cannot be explained by sales growth, liquidity and firm size. The above result shows that variation in the return on equity of banks listed on the GSE cannot be explained by regression model due to the fact that mean difference between more than two independent variables are not significant. Table 10 depicts the collinearity statistics of the variables.

Table 5: Collinearity Statistics

Variable	Tolerance	VIF
CR	0.974	1.027
FS	0.971	1.030
SG	0.973	1.028

From Table 10, the test of multicollinearity can be assessed using the Tolerance and Variance Inflation Factor (VIF). From the results, it can be concluded that there is no multicollinearity among the independent variables. The tolerance values are all greater than 0.10 and VIFs are also less than 10. Table 11 presents on the relationship between liquidity and banks' performance (ROA).

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           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(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                    =       4.83
         Prob>chi2 =     0.1847
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Figure 1: Hausman Test

The thumb rule about hausman test is that when the p-value is less than or equal to 0.05, the null hypothesis is rejected and vice versa. According to Figure 1, chi 2 (4.83), p=0.1847 which is greater than the p-value of 0.05. Therefore, the study accepts the hypothesis that stipulated that the unique errors (ui) are not correlated with the regressors. Therefore, random effect is reported from the ordinary Least Square (OLS) and the results is presented in Table 13.

Table 6: Effect of liquidity on banks' performance (ROE)

Model	Std. coefficient (β)	Error	t	Sig
(Constant)		0.011	.626	.626
CR	-.091	0.851	.585	.585
FS	.097	0.744	.563	.563
SG	.134	0.381	.422	.422

The results in Table 11 indicates that current ratio, firm size and sales growth do not have any statistically significant effect on the return on equity of banks listed on the GSE. This finding was contrarily to that of Kosmidou et al., (2005) who found out that there was a positive relationship between banks' ROA and the ratio of liquid assets to customer and short funding obligations. Similarly, Olangunji *et al.* (2012) in their study found that there is a significant positive relationship between bank liquidity and its performance. In addition, Mohammed and Yusheng (2019b) conducted a study on quoted non-financial firms in Ghana. From the study's findings, liquidity had a material connection with the firms' ROA, but insignificant link with the firms' ROE. Moreover, Mutwiri (2015) analyzed the economic viability of five quoted energy and petroleum sector firms in Kenya. From the study's multiple regression analysis, liquidity was an insignificant determinant of the firms' ROE

CONCLUSION

Panel design of the Longitudinal study was conducted appropriately and the following conclusions can be drawn: the study concludes that, liquidity and sales growth do not have any effect on the profitability of banks listed on the GSE. However, the size of a bank positively affect on the return on assets of banks listed on the Ghana Stock Exchange. In all, liquidity affect the ROA but not ROE of banks listed on the GSE

REFERENCES

Agbodjah, L. S. (2008). A human resource management policy development (HRMPD) framework for large construction companies operating in Ghana.

Agyemang, A. O., Yusheng, K., Twum, A. K., Edziah, B. K., & Ayamba, E. C. (2023).

Environmental accounting and performance: empirical evidence from China. Environment, Development and Sustainability, 1–26.

Alkhatib, A., & Harasheh, M. (2012). Financial performance of Palestinian commercial banks. International Journal of Business and Social Science, 3(3).

Almumani, M. A. (2013). Liquidity risk management: A comparative study between Saudi and Jordanian banks. Interdisciplinary Journal of Research in Business, 3(2), 1–10.

Ejike, S. I., & Agha, N. C. (2018). Impact of operating liquidity on profitability of pharmaceutical firms in Nigeria. International Journal of Academic Research in Accounting, Finance and Management Sciences, 8(3), 73–82.

GEORGE, O.-A., ANTWI, J., & CRABBE, M. (2014). The Performance of Rural Bank's in Ghana: The Ages Have Past Anything Recommended for the Future. International Review of Management and Business Research.

Halling, M., & Hayden, E. (2006). Bank failure prediction: a two-step survival time approach. Available at SSRN 904255.

Hamdi, H., & Hakimi, A. (2019). Does liquidity matter on bank profitability? Evidence from a nonlinear framework for a large sample. Business and Economics Research Journal, 10(1), 13–26.

Imegi, J. C., & Ogbeide, S. O. (2017). Empirical assessment of frauds on banks' liquidity: Evidence from Nigeria. AFRREV IJAH: An International Journal of Arts and Humanities, 6(2), 159–170.

Kumar, V. (2014). Understanding cultural differences in innovation: A conceptual framework and future research directions. Journal of International Marketing, 22(3), 1–29.

Mairafi, S. L., Hassan, S., & Mohamed-Arshad, S. B. (2018). Systematic review of literature on effect of liquidity on bank. Academy of Accounting and Financial Studies Journal, 22(4), 1–7.

Meenu, B., Neeraja, E. D., Greeshma, R., & Alexeyena, V. (2015). Impatiens balsamina: an overview. Journal of Chemical and Pharmaceutical Research, 7(9), 16–21.

Nyamador, Y. (2021). Effect of Liquidity Management on the Financial Performance of Banks Listed on the Ghana Stock Exchange. University of Cape Coast.

Olweny, T., & Shipho, T. M. (2011). Effects of banking sectoral factors on the profitability of commercial banks in Kenya. Economics and Finance Review, 1(5), 1–30.

Partovi, E., & Matousek, R. (2019). Bank efficiency and non-performing loans: Evidence from Turkey. Research in International Business and Finance, 48, 287–309.

Ployhart, R. E., & Vandenberg, R. J. (2010). Longitudinal research: The theory, design, and analysis of change. Journal of Management, 36(1), 94–120.

Purbaningsih, R. Y. P., & Fatimah, N. (2014). The effect of liquidity risk and non performing financing (NPF) ratio to commercial Sharia bank profitability in Indonesia. LTA, 60(80), 100.

Ware, E. O. (2015). Liquidity management and its effect on profitability in a tough economy:(A case of companies listed on the Ghana Stock Exchange). International

Journal of Research in Business Studies and Management, 2(11).