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Liquidity Ratios and Stock Returns of Deposit Money Banks in Nigeria

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ABSTRACT

Liquidity ratios are ratios that measures the ability of a firm to fund its short-term obligations as they mature. The major objective of this study was to ascertain the relationship between liquidity ratios and stock returns of deposit money banks in Nigeria for the period 2011-2022. The study used cash ratio as the independent variable and adopted secondary data obtained from the financial statement of sampled banking firms and the records of Nigeria Exchange Limited (NGX) for analysis and adopted the Generalized Method of Moments (GMM) technique for data analysis. Findings from the analysis showed that, cash ratio had a significant and positive relationship with stock returns of deposit money banks in Nigeria. The findings of this study may have been triggered by the reforms done in the Nigerian banking sector in the recent times. Therefore, the study recommended that; Regulatory agencies should stabilize the investment environment, as stable environment guarantees thorough execution of operational plans and policies, as it relates to management of current assets and liabilities. Companies that operate in stable economies seems to have a better and predictable relationship between current assets and liabilities.

INTRODUCTION

Fundamental analysis is using examination of corporate accounting reports to assess the value of the company, which investors can use to analyze a company's stock prices (Purwaningrat, 2014). This indicates that, the information from the financial statements of a company can be the fundamental factors to be considered by (or for) investors as a medium to estimate the stock price of a company. Financial ratios will show all aspects of finance, such as liquidity, solvency, profitability, efficiency and investment related elements. Interpretation or analysis of a company's financial statements is very useful to know the progress and weaknesses of the activities undertaken by a company. Liquidity Ratios are used to measure a corporation's readiness and ability to pay her short-term liabilities. Current Ratio and Cash Ratio measures the ability of current assets and cash to pay short term debts. They are computed by dividing current assets by current liabilities, as well as dividing cash by current liabilities. They demonstrate how assets that will be transformed to cash in the near future aid current liabilities.

Current assets include cash, tradable securities, receivable accounts, and inventories. Current liabilities consist of payable accounts, short-term receivable notes, long-term debts, taxes and accrued salaries (Brigham & Houston, 2019). Liquidity ratios or short-term solvency ratios provide information about firm's cash holdings or net cash in the balance sheet. Traditionally, the main concern was the firm's power to obligate its matured short-term obligations without unjustifiable concern, so, the focus is on short term assets and short-term liabilities (Jaffe *et al.*, 2013). According to Gitman *et al.* (2015), liquidity ratio is a measurement for analyzing short-term obligations. In general, the higher the ratio, is a signal of

a better liquid firm. While, lower current ratio, is a signal of likely liquidity issues. It is used to know the capacity of a firm to be able to pay its short-term payables as they come due.). The financial values of a firms' operations are summarized and recorded in financial statements, hence it is expected that ratios computed from such statements should have a relationship with investors income.

Efficient market hypothesis as put forward by Fama (1970) and the works of Ali (2011) posit that market fundamentals as well as microeconomic and macroeconomic factors influence stock prices and returns. Afriyani *et al.* (2020) argued that technical factors are priced into stocks thus influences stock returns, while, Muradoglu and Harvey (2012); John *et al.* (2022) posited that behavioral and psychological factors affects stock prices and ultimately influences stock returns, as a rise in stock price will sway stock returns upward and a fall will sway it otherwise.

Thampanya *et al.* (2020) showed that financial ratios could predict stock returns in Malaysia, Thailand, and Singapore, but lack such predictive ability in Indonesia and Philippines. Thus, suggesting that the predictive power of financial ratios could be affected by level of economic development and economy, capital market development, industry and industrial policies, company as regard accounting procedures and account preparations etc. The study of Budiantara and Wiagustini (2021) also showed that, the relationship between financial ratios and stock returns were not continuously the same in the three capital markets of Indonesia, Germany and United States of America. In addition, the works of Jahidur and Ruoling (2021) asserted that, the relationship between accounting information and the responses stock prices is acknowledged in the United States and other

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major developed economies. Nevertheless, what is the relationship between share prices and financial statement information in emerging economies like Nigeria?

LITERATURE REVIEW

Conceptual Review

Liquidity Ratios

Liquidity ratios or short-term solvency ratios provide information about firm's cash holdings or net cash in the balance sheet. Traditionally, the main concern was the firm's power to obligate its matured short-term obligations without unjustifiable concern, so, the focus is on short-term assets and short-term liabilities (Jaffe *et al.* 2013). According to Gitman *et al.* (2015), liquidity ratio is a measurement for analyzing short-term obligations. In general, the higher the ratio, is a signal of a better liquid firm, while, lower current ratio, is a signal of likely liquidity issues. They are used to know the capacity of a firm to be able to pay its short-term payables as they come due.

Stock Returns

Stock Returns is the return on investment in shares. It consists of dividends and capital gains. Dividends represent the proportion of income distributed to shareholders, while, capital gains are the spread between the bidding price and the asking price of an investment instrument (Yudianto *et al.*, 2018). The average return is the rate of return that investors expect in the future, while the actual return is the rate of return that has been obtained in the past. Between the expected level of return and the actual return is a risk that must be measured in the investment process (Wilkens *et al.*, 2006). Expected return is the return expected by investors in the future (Ivanisevic & Hernaus, 2019; Wilkense *et al.*, 2006). The sum of dividends and movement in stock price represented the return on stock. Stock return could be calculated by the following formula: Return on Stock = Shareholders Total Returns = Dividends + Capital Gains/Loss

Where;

Dividend: represent the proportion of income distributed to shareholders (per share)

Capital Gain/Loss: represent the periodic movement of stock price (the price of a single stock of a company's saleable equity shares).

Theoretical Review

Agency Theory

Jensen and Meckling (1976) defined an agency relationship "as a contract by which one or more persons (the principal) engage another person (the agent) to perform some services on their behalf which involves delegating some decision making authority to the agent". In the finance and economic literature, the agency theorists are anxious on how to design optimal contract to monitor managers' decision making in order to reduce the principal (stockholder) – agent (managers) problems.

That is, ways to resolve conflicts between managers and their principal on issues related proper management of the firm in order to maximize return.

Separation Theorem

Irving Fisher postulated the theory known as separation theorem in 1930, in which he stated that in an efficient market, managers should solely focus on maximizing profits irrespective of the goals and preferences of the shareholders. Fisher's separation theorem also referred to as the portfolio separation theorem, states that the foremost thing that a corporation need to do is to grow its present value as much as possible. The portfolio separation theorem shows that optimal investment decision is independent of shareholder preference, which means that in the perfect market, choices made by management will not depend on the shareholders' preference. Fisher's answer to this problem is for managers to optimize profits and company value, though it may contradict shareholder utility preferences, their long-term utility will still be maximized by this approach. The conclusion of Fisher's separation theorem is a result of the lending and borrowing (trading) opportunities in the efficient market. By utilizing these opportunities, investors can make trades according to their individual marginal rate of substitution to achieve their personal preferences and reach optimal allocation.

Efficient Markets Hypothesis

Fama (1970) theorized the efficient market hypothesis, which described the efficient market as a market where prices of securities fully reflect all available information. This is the basic meaning of efficiency in the markets. That is, a market where prices of securities becomes the signal for efficient resource allocation. Thus, market is informationally efficient if security prices instantly and properly mirror all the available information that is germane to the future profitability of a company. In that sense, share price establishes the best possible guess of the company's intrinsic value, given the information available at that point in time. Accordingly, if security prices were separated from earnings' potential, they would send distorted signs for resource allocation, and so the resultant capital allocation would be less than optimum. Accordingly, the efficient markets hypothesis avowed that security prices adjust to three subsets of information; adjustment to historical information (weak form), adjustment to publicly available information (semi-strong form) and adjustment to insider or private information (strong form).

This study is eclectically anchored on three theories: Agency Theory as put forward by Jensen and Meckling (1976), Fisher's Separation Theorem as theorized by Irvin Fisher in 1930 (Investopedia, 2021; Lu *et al.*, 2022; Ekman, 2022) and the Efficient Market Hypothesis as advanced by Fama (1970). The agency theory emphasized the duty of managers to manage firms in the interest of their principal. But, a corporate firm has numerous

stockholders who has differing utility preferences. The separation theorem provide solution to the satisfaction of the different utility preferences of stockholder (principal), by postulating that managers should separate firms from owners and choose a goal for the firm. A goal that can be transformed by the individual stockholders to meet their respective utility preferences. The chosen goal was to maximize profit. Maximized profit must be reflected in the values of traded securities for the benefit of investors via increased stock prices and ultimately, maximized stock returns.

Liquidity Ratios and Stock Returns

In Dhaka Stock Exchange (DSE), Sani, et al (2025) investigated at the main factors influencing share prices. Assembling data from 206 firms that are listed on the DSE the study investigated the sway liquidity, EPS, ROA, NAV, business size, and cash dividend rate (CDR) on stock prices. The findings indicated that these factors explain 56% of the movements in share price. Particularly, share prices are negatively impacted by liquidity and ROA, while CDR has the most favorable impact. The outcomes of the research provide investors with insightful information that helps them make better decisions by demonstrating how important financial parameters impact share prices

The works of Jihadi *et al.* (2021) examined the effect of profitability, activity, liquidity and leverage on firm value, as well as the effect of Corporate Social Responsibility (CSR), employed in the study as a moderator and company size as a control variable. The study used purposive sampling technique with certain gauges, to obtain a sample of 22 LQ45 index companies listed on the Indonesia Stock Exchange for the period spanning 2014–2019. Data for the study were analyzed with the Multiple Linear Regression Analytical method using the SPSS 18 Program. The findings revealed a significant relationship between financial ratios liquidity and firm value. Corporate Social Responsibility (CSR) plays a role as a moderating variable and company size variable as a control variable on the effect of financial ratios on firm value. Furthermore, the study revealed that CSR plays a very central role in raising company value. To attract more investors, companies must pay attention to both financial performance and social performance. Thus, large-scale companies are advised to do more CSR so that the company value will increase.

The research work by Phong (2012) evaluated the effects of liquidity and risk of liquidity to stock returns as registered in Vietnamese stock market. The study adopted three approaches to evaluate liquidity; the portion between number of shares traded and number of share outstanding (called Liq1), the portion between average of number of shares traded in a month and average of total number of shares traded of the market in the month (called Liq2) and the portion between the average of traded value in a month and market

capitalization of share (called Liq3). Differing from preceding studies, the research showed that, there is a positive correlation between indicators Liq1, Liq3 and stock returns. While indicator Liq2 has no relationship with rate of return, also the correlation between Beta coefficient and rate of return is weak.

The work of Razak *et al.* (2020) studied the effect of Return on Assets, Debt to Equity Ratio Current Ratio and Total Assets Turnover on stock returns of enterprises in the machinery and heavy equipment sub-sector and allowed to trade on the Stock Exchange Indonesia (IDX) for the period 2014 - 2018. Stock returns were computed with changes in closing stock prices. The study used the panel data estimation method. The result of the empirical findings showed that financial performance represented with; current ratio, total asset turnover, return on asset, and debt equity ratio have no effect on stock returns. The findings of the study revealed that company's financial statement records and ratios computed therefrom are not significant determinants of stock return in the Machinery and Heavy Equipment Sub-sector enterprises in Indonesia.

The work of Enekwe *et al* (2015) titled “the relationship between financial ratio analysis and corporate profitability: A study of selected quoted oil and gas companies in Nigeria”, examined the link between financial statement ratios and corporate profitability of Nigeria oil and gas sector for a period of five years-2008-2012. The study adopted five financial ratios which include total assets turnover ratio, debt equity ratio, debtor's turnover ratio, interest coverage, and creditors' turnover ratio as independent variables. While, return on assets of oil and gas companies in Nigeria as used as dependent variable. Ex-post facts research design was employed for the analysis. The data were obtained from the financial account and annual reports financial statements of the selected quoted oil and gas firms on the Nigeria stock exchange (NSE). Descriptive statistics, correlation and multiple regression technique were used to find out the relationship between the variables as well as their effect on corporate profitability. The findings showed that total assets turnover ratio, debtor's turnover ratio and interest coverage has a direct relationship and statistically significant with corporate profitability while debt equity ratio and creditor's turnover ratio have indirect relationship and statistically not significant with corporate profitability in the Nigeria oil and gas industry. The analysis further advanced that debtor's turnover ratio had a direct relationship corporate profitability and statistically significant. While, total assets turnover ratio had indirect and significant effect on corporate profitability. Also, DTR, DER and CTR have no effect on corporate profitability in quoted oil and gas companies in Nigeria. The study therefore recommend that creditor's and purchases must be equalized in order to take the advantage of credit facility and any discount associated with prompt payment for products to increase

the corporate profitability. Management should utilize its assets efficiently in order to generate more income for the company.

The research by Obala and Olweny (2018) sought to ascertain the relationship between financial performance and stock returns. Using Data obtained from 10 listed banks in the Nairobi Securities Exchange for the selected period of 2011 and 2015. Performance factors investigated against stock returns are; Debt to Equity Ratio, Return on Asset, Current Ratio and firm's growth represented by Asset growth ratio. Multiple Regression analysis was adopted for the study. The findings showed that return on Asset, Current ratio and Asset growth ratio have moderate but positively influences stock returns. The effect of Debt to equity ratio on stock returns was showed to be inverse and insignificant.

In the United States of America (USA), Choi *et al.* (2021) examined the possibility of using a firms' book-to-market ratios (B/M) to value its investment and the implications for movements in firms' stock returns and trading volumes. The study showed that B/M has become progressively separated from other alternative valuation ratios gradually and becoming worse at forecasting upcoming returns and growth absolutely and relatively. Notwithstanding these trends, some major U.S. stock indexes and institutional funds still rely on B/M when identifying value stocks and selecting index weights.

METHODS AND MATERIALS

This research study focused on the relationship between liquidity ratios and stock returns of deposit money banks in Nigeria. For the purpose of this research, the quasi-experimental research design was adopted.

Population and Sample

The population of this study comprises the nineteen (19) deposit money banks in Nigeria with international and national license as published in the Central Bank of Nigeria website as at 30 September, 2021. The sample was selected according to data availability criteria. Hence, twelve (12) listed deposit money banks represents the sample size for this study for a twelve (12) years period; from 2011-2022. The twelve (12) years period is chosen, taking cognizance of the post consolidation in the Nigerian banking sector and data availability, in order to have a fairly, reasonable, reliable, and up-to-date financial data and also to keep the range of data within the short-term data, in order to avoid cross sectional dependence associated with long-term data-above 20 year period, in panel analysis (Torres-Reyna, 2007; Maeso-Fernandez, Osbat & Schnatz, 2004).

Sample of the Study

S/N Company/Firm

1. Access Bank Plc
2. Fidelity Bank Plc
3. First Bank of Nigeria Plc
4. First City Monument Bank Plc

5. Guarantee Trust Bank Plc
6. Stanbic IBTC Bank Plc
7. Sterling Bank Plc
8. United Bank for Africa Plc
9. Union Bank of Nigeria Plc
10. Unity Bank Plc
11. Wema Bank Plc
12. Zenith Bank Plc

Sources and Nature of Data

This study employed secondary panel data, sourced from the publications of the Nigeria Exchange Limited (NGX) and the annual report and accounts of the sampled deposit money banks as well as their respective notes.

Model Specification

The model for the estimation of the relationship between liquidity ratios and stock returns of deposit money banks in Nigeria is adopted from the study of Razak *et al.* (2020). The adopted model is stated thus:

$$RS = f(CR, TAT, ROA, DER)$$

Where; RS = Stock return, CR = Current Ratio, TAT = Total Assets Turnover, ROA = Return on Assets, DER = Debt to Equity Ratio

The above model was modified for the purpose of this study as stated below;

$$SR = f(CAR) \dots \dots \dots \text{Model 3}$$

Where;

SR = Stock Return

CAR = Cash Ratio

$$SR_{it} = \beta_0 + \beta_1 CAR_{it} + E_{it} \dots \dots \dots \text{Equation 3}$$

β_0 = Intercept

β_1 = Coefficient of independent variables

i = cross section

t = Time

E = Error term

A priori expectation: $\beta_1 > 0$

Measurements of Variables

Dependent Variable

In this study, the dependent variable is stock returns. It is the return expected by an investor in stock. It is the combination of dividend and capital gain/loss;

$$\text{Stock Return} = \text{Dividend} + \text{Capital gain/loss} = \frac{\text{Div.} + (P_1 - P_0)}{P_0} \times \frac{100}{1}$$

Where:

Div. = Dividend

P1 = Current market price of share

P0 = Previous market price of share (immediate past year)

Independent Variable

The independent variable adopted for this study is as shown below.

Liquidity Ratios: Measures the ability of the corporation to meet its short-term obligation

Variables	Measurement	Operationalization
CAR	Cash ratios in numbers	Cash & cash equivalents divided by current liabilities

Method of Data Analysis

This study conducted a descriptive test for variables, to ascertain the nature of the data, correlation between the independent variables and the dependent variable were also ascertained. The study employed the Orthogonal Deviation option of the Generalized Methods and Moment (GMM) on the panel data collected, to test the significance of the relationship between the independent variables and the dependent variable and to test stated hypothesis. This option of analysis was adopted because “GMM estimator of the model transformed by the forward orthogonal deviation tends to work better than that transformed by the first difference” (Hayakkawa, 2009). Additionally, Sarafidis and Robertson (2006) concluded that orthogonal deviations are more robust to small samples sizes and can handle fewer observations more efficiently.

Decision rule: Decision is based on the P-value of independent variables. P-values ≥ 0.05 indicate the independent variable have no significant relationship with the dependent variable. While, P-values < 0.05 is indicative of a significant relationship with the dependent variable.

RESULTS AND DISCUSSION

Analysis Data

Descriptive statistics of variables is used to explain the data collated and to condense and describe variables under investigation. The descriptive statistics of variables used for the study of the relationship between liquidity ratios and stock returns of deposit money banks in Nigeria from 2011 to 2022 is presented in the table below.

Table 1: Descriptive Statistics

	SR	CAR
Mean	25.01627	1.105269
Median	14.15000	0.201127
Maximum	227.0000	169.5183
Minimum	-55.80000	-39.75607
Std. Dev.	54.77199	14.51999
Skewness	1.279517	10.79314
Kurtosis	4.905465	127.8882
Jarque-Bera	61.07674	96378.23
Probability	0.000000	0.000000
Sum	3602.343	159.1588
Sum Sq. Dev.	428995.9	30148.70
Observations	144	144

Table 1 showed that stock return has a mean value of 25.01, with a standard deviation of 54.77, while, the minimum and maximum values are -55.8 and 227.00,

respectively. Cash ratio has a mean value of 1.11 and standard deviation of 14.52 minimum and maximum values of -39.75 and 169.51 respectively.

Table 2: Correlation Analysis

	SR	CAR
SR	1.000000	0.036852
CAR	0.036852	1.000000

Table 2 show the correlation matrix of the dependent and independent variable. From the table it can be seen that cash ratio is positively correlated with stock returns of deposit money banks in Nigeria.

Regression Result

Table 3: Orthogonal Deviations Estimations Dependent Variable: SR

Variable	Coefficient	Standard Error	t-Statistic	Prob.
SR (-1)	-0.096805	0.059371	-1.630500	0.1057
CAR	0.190118	0.077205	2.462517	0.0152

Mean dependent var 1.224065 S.D. dependent var 55.29010

S.E. of regression 54.95362 Sum squared resid 356348.3

J-statistic 10.76248 Instrument rank 12

Prob(J-statistic) 0.376320

The result of the orthogonal deviations estimation revealed that, the model is correctly specified as shown by the probability of J-statistics the value of 0.376, thus, showing that the instruments employed in the model are valid and the sample moments are close to the theoretical (population) moments.

Lagged value of stock returns is negatively and insignificantly related to the current value of stock returns of deposit money banks with a coefficient of -0.0968 showing that a dynamic unit change in previous stock returns can cause 0.0968 -unit decrease in current stock returns. Cash ratio (CAR) is shown to be positive and significantly related to stock returns with a coefficient of 0.19 units. This indicate that a unit change in CAR can cause a 0.19-unit increase in stock returns of deposit money banks.

Discussion of Findings

The result of the orthogonal deviation estimation revealed that cash asset/ratio is positively and significantly related to stock returns of deposit money banks in Nigeria. These finding is consistent with the findings of Obala and Olweny (2018) in Nairobi that revealed a positive relationship between current ratio and stock return in Kenya. However, the finding of this research based on the Nigeria economy disagree with the Adawiyah and

Etiyawdas (2019) in Indodesia: Rasak *et al.* (2020), also, in Indonesia that found a negative relationship between current ratio, financial performance and stock returns. Furthermore, in Indonesia Ramly *et al.* (2018) as well as Jihadi *et al.* (2021) found a significant relationship between liquidity ratios and stock returns.

The above result/findings lay credence to the fact that the relationship between liquidity ratios and stock return is dependent of the time of research, market regime (bearish or bullish) as well as level of capital market efficiency and development. These findings may also have been coloured by the nature of industry (banking).

Summary of Findings

Findings from the analysis showed that, cash ratio had a positive significant relationship with stock returns of deposit money banks in Nigeria. the findings of this study may have been triggered by the reforms done in the Nigerian banking sector in the recent times

CONCLUSION

Financial ratios are veritable means of analyzing firms' ability to survive and earn profit for her owners, and the owners of firms determine their earnings via stock returns. However, for financial statement data to transform to good stock returns the capital market of a nation must be efficient enough to reflect such financial statement information(s) in the prices of traded securities/stocks. The findings of this study revealed that, liquidity ratios of deposit money banks as represented by cash ratio have positive and significant relationship with stock returns of deposit money banks in Nigeria. This, suggest that the Nigerian Capital Market is moderately-efficient (semi-strong) in her operations to reflect financial statements data in the prices of securities traded in the capital market. Hence, investments in the Nigerian Capital Market may not just be based on intuition of market players and/or technical analytical considerations, but include company fundamentals in the determination of stock prices and ultimately stock returns.

Based on the empirical findings of the study, we make the following recommendation:

(i) Regulatory agencies should stabilize the investment environment, as stable environment guarantees thorough execution of operational plans and policies, as it relates to management of current assets and liabilities. Companies that operate in stable economies seems to have a better and predictable relationship between current assets and liabilities.

(ii) Managers of firm as agents should be thorough (maintain ethics) in the report of financial statement information. While, the Nigerian Security and Exchange Commission should enforce timely disclosure with electronic/information technology platforms, such that new information from financial statements, that may influence stock value is received by all stakeholders at about the same time, causing almost instantaneous

reevaluations.

(iii) Managers compensation should be structured based on stock return expectations, to enable the synchronization of financial ratios and stock returns.

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