

Liquidity and Working Capital Management Practices on Firm Value of Listed Non-Financial Companies in Nigeria

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ABSTRACT

The value of a firm, often represented by its market capitalization, reflects the market's perception of its future earnings potential, growth prospects, risk profile, and overall financial health. Conversely, poor financial management practices can expose firms to increased risks, reduced profitability, and potential value erosion. This study examined the relationship between liquidity and working capital management practices and the value of listed non-financial companies in Nigeria. To achieve these objectives, ex- post facto research design was employed and the study utilized seventy (70) selected listed non-financial firms that had consistently published their audited annual financial reports from 2011 to 2022, and analyzed the data using panel multiple regression technique with the help of E- view statistical tools. The result of the study revealed that liquidity management practices had negative and insignificant effect on firm value of listed non-financial firms in Nigeria. While working capital management practices had positive and significant effect on price to book value of listed non-financial firms in Nigeria. Based on this finding, it is recommended that the management of non-financial companies in Nigeria should improve on working capital management to balance operational needs with cost considerations and also avoid overstocking or under stocking, which can tie up resources or disrupt operations.

Keywords: Liquidity Management Practice, Working Capital Management Practice Firm Size and Firm Value.

INTRODUCTION

Companies in the world are solely established by the owner not just to generate profit but also to maximize the firm value of such a company. Firm value is a state that defines the success of a company (Othman & Haron, 2021). Where the value of the company is good, the company will be regarded as healthy by potential investors and be able to attract other interested parties to join the company. Firm value is defined as investors' perception of the company's level of success in managing resources as reflected in the company's stock price at the end of the year (Machmuddah *et al.*, 2020). Firm value is also an indicator used by investors as a benchmark for assessing a company before investing. The higher the stock price, the higher the company's value, and vice versa. With a lower company's stock price, the company's value will also be lower, so the company's performance will be considered less good Husain *et al.*, (2020). Performance on the stock market is an index or indicator of corporate success. Any corporate entity experiencing a rise in the market price of its stocks is considered a good company by investors. Maximizing firm value is essential for a company because it means increasing the prosperity of shareholders and other stakeholders, which becomes the company's main goal.

Companies that have high firm value will always attract investor interest and foster the trust of stakeholders in the company. According to Rosada and Idayati (2017), firm value is very important in a company because the high value of the company will be followed by a high prosperity of the shareholders. The firm's value is believed not only in the company's current performance but also in its prospects. Therefore, companies listed on the Nigerian exchange group will try to convey the best possible information to the public about the condition of their company as a basis for consideration in investment decisions as regards the management of the company they manage. The stock price is usually used as relevant information and a reflection of company value. However, it is very pertinent to ascertain factors that have an important role to play in the stock market to improve the firm's value. The price of a stock in the security market is significantly influenced by several internal and external determinants (Rajhans & Kaur, 2013). The internal determining factors are working capital, liquidity, and other components of financial management practices while external factors are those macro- and micro-economic variables that cannot be controlled by the company, such as Gross Domestic Products, inflation exchange rate, and monetary policy Mohammed, (2017). The internal determinants of firm value are also both financial and non-financial, according to Endri (2019). Hanafi and Halim (2019) stated that the firm's value can be measured by the ratio of the market. The market ratio is the ratio that measures the market price relative to book value. There are several ratios to measure the market value of companies, out of which the price-to-book value which will be considered in this study. The price-to-book value will be used to measure the firm's value due to its wider acceptability.

In this current study, Liquidity and working capital management practices as well as firm size will be considered as variables. Liquidity is the ability of the firm to meet its short-term obligations when due. It is expressed as the ratio of a firm's current assets to current liabilities, with a higher liquidity ratio indicating a higher likelihood of meeting projected arrears and maintaining sound financial management Kimondo *et al.*, (2016). Working capital management is a strategy used by a firm to ensure the best utilization of a business's current assets and liabilities for the effective operation of a company. It is a measure of firm current assets and current liabilities in such a way that the optimum level of cash flow is maintained in an organization (Raza & Haq, 2020). An optimum level of working capital is one that level which supports daily operations without compromising efficiency.

The motivation for this study is that in Nigeria nowadays, many non-financial companies have recorded poor performance as a result of inefficient liquidity and working capital management practices, leading to their being delisted from the Nigerian Exchange Group in recent times. For instance, this is shown by the Nigerian Exchange Group factbook (2021), through a resolution adopted at their annual general meeting, where some firms left the Nigerian Exchange Group (NGX) willingly, while others were required by regulation to delist themselves from the NGX. Mobil Oil Plc., Re-Insurance Plc., Dangote Flour Mills Plc., and Anino International Plc., are a few examples of delisted companies that were either delisted voluntarily or as a result of regulatory action due to poor financial management practices (Nigeria Exchange Group Factbook 2021). These features have threatened their continued existence and performance, which negatively affects their firm value.

However, difficulties in a company's internal and external environments prevent it from achieving its stated goals. In other words, a company's capacity to manage its resources in a variety of ways to gain a competitive edge on the world market is reflected in its performance index, which serves as a measure of firm value. As a result, the majority of non-financial enterprises in Nigeria encountered numerous difficulties when making decisions about managing their working capital and liquidity about the value of their company. Therefore, this aspect of working capital and liquidity management techniques and their impact on company decision-making remain unclear and unsettled, providing considerable opportunity for further study. Based on the foregoing and identified gaps, the study sets out to assess and seek to unveil the liquidity and working capital management practices on firm value of non-financial companies in Nigeria to fill the existing research gaps. The basic hypotheses underlying this study are stated in null form and will be

tested in this study are;

H₀₁: Liquidity management practice has no significant relationship with the Price to Book value of listed non-financial companies in Nigeria.

H₀₂: Working capital management practice does not significantly affect the Price to Book value of listed non-financial companies in Nigeria.

LITERATURE REVIEW

Conceptual framework

Liquidity Management Practice

Liquidity is simply referred to as the ability of a manager to invest in the current asset and current liability of a company and ensure a firm survival. It has been described by many scholars in the field of research. According to Nimalathasan and Priya, (2013), Liquidity Management Practice is a state in which a firm's ability to meet its short-term obligations as at when due, without affecting the normal operations of an entity. It is concerned with developing a method for managing its daily operations to ensure that its corporate obligations which are to maximize earnings and shareholder value are achieved, Joseph *et al.*, (2016). It also involves planning investment in current assets and current liabilities of an entity to avoid excessive financing of current assets, as well as a shortage in current liabilities. (Yameen *et. al.*, 2019). Liquidity is the difference between current assets and current liabilities of an establishment in an accounting period, which may be positive or negative (Okoro, 2016). Liquidity determines to a great extent the profitability and growth of a firm. This is a result of the fact that insufficient liquidity or excess liquidity may hurt the smooth running of a business, which in turn affects the profitability of a business (Okoro, 2016). Liquidity management determines to a great extent the growth and profitability of a firm. This is as a result of the facts that insufficient liquidity or excess liquidity may has negative effect to the smooth running of a business, which in turns affect the profitability of a business. The major issue in liquidity management is the ability to strike a balance between liquidity position of an entity and profitability; as both are expected to influence value of firms positively and significantly.

Working Capital Management Practice

Working capital management is an important component of the success and survival of a business firm's liquidity and profitability. It is the use of firm's current assets and current liabilities in such a way that optimum level of capital is maintained (Sabo, *et al.*, 2015). It is also primarily concerned with the problems that arise in an attempt to manage the current assets and the current liabilities and the interrelationships that exist between both of them, (Van Horn, 2015). This is a strategy used by a firm to ensure the best utilization of a business's current assets and liabilities for the effective operation of a company. It is a measure of firm current assets and current liabilities in such a way that the optimum level of cash flow is maintained in an organization (Raza & Haq, 2020). An optimum level of working capital supports daily operations without compromising efficiency. It does not expose the firm to losses associated with excess or inadequate working capital. Adequate working capital enhances the operational performance of a firm thereby ensuring its continued existence while its inadequacy of the work is the opposite (Rehman 2017).

Van Horn, (2015) argued that there are two concepts of working capital; gross working capital and net working capital. Gross working capital simply means investment in current assets, which can be converted into cash within an operational cycle. These include inventories, trade receivables, cash and cash equivalents, prepaid expenses, marketable securities, and other liquid assets. Net working Capital simply

means the difference between current assets and current liabilities. Current liabilities are those claims which are expected to mature for payment in an operational cycle. Examples of such are bank overdrafts, bill payables, bank loans, outstanding expenses, interest payable, accrued interest, and other short-term liabilities. Net working capital may be positive or negative. A positive net working capital will arise when current assets exceed current liabilities. A negative net working capital will occur when current liabilities exceed current assets. It has been emphasized that both gross and net are important for the efficient and effective management of working capital. (Pandey, 2017).

Firm value

Any firm in the world tries to establish short-term and long-term objectives. Short-term objectives are used for profit maximization while long-term objectives are considered for maximizing company value Nwamaka, (2017). It is very important because it describes the prosperity of shareholders. Aroh *et al*, (2021), opined that the higher the firm value, the higher the prosperity of shareholders, also the higher the stock price, the higher the firm value, which served as a good indicator to assess firm performance. The wealth of shareholders and the company is presented by stock price as a reflection of investment decisions, finance, and asset management. The main corporate objective of any company is to maximize the firm value and the manager is the person appointed by the shareholders to manage the entity and ensure optimal maximization of the value of the firm which forms the fundamental objective of any organization (Bhabra, 2017). A high firm value indicates that the company is prosperous. Hence, the shareholders' wealth is maximized, which also indicates that their prosperity level is reflected in the firms' value. Investors also perceive the company through its firm value, and this is related to its stock price. Yanti and Darmayanti, (2019), opined that firm value is the price paid by the wealthy buyer when a firm is being sold, and the public also sees firm value as a direction for firm survival.

Price-to-Book Value

The price-to-book value ratio refers to a valuation ratio that is used by investment advisors, fund managers, and investors to compare a company's market value (market capitalization) to its book value (shareholders' equity). It expresses the relationship between the stock price and the book value of each share. Price to book value ratio captures the relationship between the market value of the share capital and its financial position value which is very common among investment advisors, fund managers as well as investors. According to Reilly and Brown, (1997). Price to book value ratio greatly attracts the attention of investment advisors, fund managers and investors, because shares selling at below the book value are generally considered as being undervalued whereas, those selling for above book value are considered as being overvalued. For this purpose, it requires that shares with low price to book value ratios should outperform those with high price to book value ratios. While some investors have used low price to book value ratio as an investment screen to identify undervalued shares, other investors combine price to book value ratio with its fundamentals to make the same decision.

Firm size

Firm size has been a major determinant of performance in any business. It has always been the objective of firms to multiply in size to have an edge over their competitors. The positive relation between size and performance is explained by economies of scale. However, many firms while increasing in size are also recording poor performance every year. Large-scale firms tend to attract economies of scale, as well as large numbers of investors because the size of a firm determines the firm's profitability which plays a very important role in competing with competitors in areas of cost reduction of a company. Firm size is a total reflection of the assets owned by a company, and firms that have large total assets are considered to have good prospects in a relatively stable period and can generate profits compared to companies that have small total assets. Large-scale firms have a higher competitiveness than small firms because large firms have a

large market so they have a great opportunity to obtain large profits. Moreover, large companies can finance their investment easily because of access to funds and little asymmetric information occurs. This can be said that the size of the company influences the capital structure and is supported by research (Marfuah & Nurlala, 2019).

Empirical Review

Olayiwola and Intan (2022), examine the relationship between financial management practices and the financial performance of quoted Nigerian manufacturing firms. The study has a population of 39, and a sample of 33 quoted Nigerian manufacturing companies from the years 2015 to 2018 was selected. A multivariate regression analysis was performed based on 132 firm-year observations, where it is documented that solvency, as proxied by the debt-to-assets ratio, is positively and significantly related to the firm's profitability. Results, however, revealed an insignificant relationship between liquidity and the firm's profitability. The study then recommended that firms should sustain being solvent to generate business growth and achieve set development goals. The study was conducted using return on assets to measure profitability, whereas, there are other better yardsticks for measuring profitability such as net margin ratio etc.

Luiin and Jian (2022). Assessed the impact of working capital management (WCM) on the profitability of Chinese agricultural companies. This impact is examined using descriptive and correlational methods as well as regression analysis for eight years (2012–2019). The ordinary least squares (OLS) method is applied to analyze the data. The study has a population of 237 observations, and a sample of 37 was selected for the study. The finding shows a positive relationship between firm size, sales growth, and ROA and a negative relationship between debt used by the firm and ROA. The study then recommends that the management ensure adequate requirements for efficient working capital management to maximize the profitability of the analyzed companies. The study was conducted outside of Africa; the economic variables and geographical differences may not make the results and recommendations applicable to Nigeria's environment, and the number of samples chosen was too small for the study, thereby creating the problem of generalizations.

Emmanuel and Paymaster (2022), examined the relationship between financial management difficulties and financial institution performance in Nigeria. The study used a descriptive research design with a population of 702 secretariat staff of banks in Bayelsa State, out of which a sample of 254 was selected. The questionnaire was the major data-gathering tool. A Spearman rank correlation coefficient statistic was used to test the hypotheses based on the data that was obtained. The findings of the study suggest that a lack of financial competence in Nigeria has a beneficial and substantial impact on the country's banks. It was recommended that management also consider expanding the financial expertise, financial policies, and monitoring and control programs to cover all departments and do reviews to ensure the programs are relevant. The study used a questionnaire to collect data, which might lead to dishonest answers among the respondents; the results and recommendations might provide incorrect feedback; and because only one state was selected for the study, the results and recommendations might not be generalized.

Abdirahim and Willy (2021), research on the effect of financial management practices on manufacturing firms' financial performance in Bosaso, City Puntland, and Somalia. It used a questionnaire to gather information from the company's managers. The study has a population of 76 registered manufacturing companies in Bosaso City, where 64 sample sizes were selected. Specific objectives were to identify the effect of the management of working capital on financial performance. The study's primary data collection instrument was a structured questionnaire through the four-point Likert scale, showing the extent to which, each factor affects financial performance. Data analysis was done using SPSS, and presentations were made in pie charts, distribution graphs, diagrams, and figures to clearly show the respondents' responses according to the different variables in the tables. The study showed that the management of working capital did not impact the financial output of manufacturing companies. It was recommended that business owners

collect enough information before deciding on the financial source to use. The study also suggests that proper evaluation of risks before making investment decisions is necessary. The study was carried out in Somalia, and its findings and recommendations may not apply to Nigeria's environment.

Muthama and Warui (2021), assessed the relationship between financial management practices and the performance of devolved sub-county treasuries in Makueni County, Kenya. The study anchored on positive accounting theory. The research adopted a cross-sectional survey design. The study targeted the 227 employees working in the devolved sub-county treasuries within Makueni County, from which a sample of 144 respondents representing top-level management, senior management, and supervisory level staff was considered. The study revealed that revenue collection practice ($r=0.213$) has a weak relationship with the performance sub-county treasuries in Makueni County. It then recommended that the revenue officers working in the sub-county treasuries of Makueni County improve the revenue collection systems in place. The study used the primary means of collecting data, which makes the recommendations more subjective.

Faith and Monica (2021), researched on the effects of selected financial management practices on the financial performance of commercial banks in Kenya. The research employed a descriptive research design. The population of the study comprises all 43 commercial banks in Kenya, and the census method of sampling was employed, where the 43 commercial banks formed the study sample units. Both primary and secondary data were used. Secondary data was obtained from the audited annual financial reports of the commercial banks in Kenya, while primary data was collected using a questionnaire that was designed in the form of a Likert scale. Descriptive and inferential statistics were used, whereby correlation and regression were used to establish the strength of the relationship between the financial management practices and the financial performance of the commercial banks. Data was presented in the form of tables, mean and standard deviation. A correlation analysis was performed to examine the relationship between financial management practices and the financial performance of commercial banks. The study concludes that capital structure management practices have a positive and significant effect on the financial performance of commercial banks in Kenya. The study recommends that bank management make sure that they maintain substantial levels of liquidity to maintain competitive performance. The study focused on commercial banks in Kenya. Generalizing the findings and recommendations in Nigeria might be difficult, due to macro- and microeconomic differences.

Olowookere *et al.* (2021), researched on the effect of financial management practices on the performance of consumer goods companies listed on the Nigerian Stock Exchange (NSE). The study adopted an ex-post facto research design, and the population of the study under review was 20. The sample data were sourced from the annual financial reports of 10 selected consumer goods companies listed on the Nigerian Stock Exchange from 2013 to 2019. The cumulative result showed that financial management practices had a significant relationship with return on equity. The study concluded that there was a significant relationship between financial management practices and the return on equity of Nigerian-listed consumer goods companies. The study, therefore, recommends that senior managers of consumer goods companies develop and maintain financial management policies to improve the financial performance of their respective companies. The study also focuses on financial performance, which is not different from other studies by other scholars. Also, it is limited to one sector of the economy, which is consumer firms.

Ismail and Anwaru (2021), investigated the liquidity management and financial performance of listed oil and gas companies in Nigeria. The study used 10 listed oil and gas companies as the population as well as a sample for the study. The data were subjected to a fixed-panel regression study. Secondary asset data was gathered for ten years, from 2011 to 2020, from their published annual reports. Profit after tax (PAT), return on asset (ROA), and return on equity (ROE) were used to determine profitability (ROE). Internal liquidity variables such as equity, debt, and sales were utilized to determine the behavior of the dependent variable, but external elements such as the lending interest rate and exchange rate were employed to further explain

profitability behavior. The data were analyzed using a multiple regression approach. The findings reveal that debt has a significant negative impact on companies' profitability. The study, therefore, recommends that oil and gas firms boost their equity capital, improve their revenues, increase their retained earnings, and reduce their debt financing to enable them to generate more wealth for shareholders. The study has an institutional gap as it only focused on the oil and gas sector, which is just one sector of Nigeria's economy. Wider coverage would have brought robust conclusions and recommendations.

Abdul, *et al.* (2021), investigated the relationship and the impact of working capital management on firm performance across Bumiputera and non-Bumiputera manufacturing firms in Malaysia. The study used panel data and employed descriptive statistics, correlation analysis, and pooled ordinary least squares (OLS) to test the effect of inventory days, account receivable days, and account payable days (independent variables) on firm performance measured by return on assets (ROA). The population of the study was 100 listed manufacturing companies, of which a sample of 40 listed manufacturing firms was evaluated for the period under review. The findings show that there is a significant negative relationship between inventory days and account receivable days on firm performance. The study recommends that executive management increase the working capital management of a firm to increase firm performance and profitability at manufacturing firms in Malaysia. The study used a census sampling method. Whereas another sampling method might be explored.

Oluyinka *et al.*, (2020), examined the effect of liquidity on the performance of listed manufacturing companies in Nigeria. The study employed an explanatory research design to assess the relationship using data obtained from audited financial statements of 16 manufacturing firms in the consumer goods sector from 2009-2018, from the total population of 20 manufacturing firms in Nigeria. The collected data were analyzed using SPSS and E-View. The study employed panel multiple regression to analyze the data. The study found that the quick ratio has a significant adverse effect on the performance of listed manufacturing firms. The study recommends that manufacturing firms should put down, and follow strict adherence to policies and practices that help the firm to maintain a proper balance between their liquidity position and profitability. The study used the combination of SPSS and E-view to analyze data. It should have used either of the two because there is a slight difference between the tools of analysis.

Saheed and Salleh (2017), examined working capital management and firm value: the role of firm innovativeness and non-innovative firms in an emerging market in Malaysia. The study was carried out based on 400 listed firms in Bursa Malaysia for the period 2006-2015. By using a fixed regression estimation, the findings indicate that innovative firms have better-working capital performance than non-innovative firms since they apply their innovative capabilities toward improving their working capital performance. The study suggests and recommends that firms need to align their innovative capabilities toward working capital management to improve firm value. The study was conducted outside Nigeria, and the results and recommendations may not be applicable in Nigeria.

Theoretical Framework

Agency Theory.

Agency theory was developed by Jensen and Meckling, (1976), and it's the theory that talked about the relationship between principals and their agents. It described a relationship where one party (the principal) delegates work to another (the agent). Furthermore, it is concerned with resolving the problems in a relationship with conflict of interests and risk sharing when attitudes toward risk diverge. By nature, the principal-agent relationship creates a problem when there is a conflict of interest between the principal and agent. The theory has resulted in two strands of literature that address the same problem: positive agency theory and principal-agent theory (Jensen 1986). According to Jensen (1986), positive research has focused

almost exclusively on the relationship between the owner and the manager in public companies. Above all, positivist literature aims at identifying situations where the interest diverges and describing instruments that limit the agent's opportunistic behavior. The manager in an establishment performs the controlling tasks of a firm and seeks to maximize its utility and a self-interested or conflict of interest arises. Since the managers have effective control of the firm, they have the incentive and the ability to consume benefits at the expense of the owners. Jensen and Meckling (1986), define the costs caused by the divergence of interests between owners and managers as agency costs. Which consist of the monitoring cost by the principal, bonding cost by the agent as well as residual loss. Which is referred to as loss arising from an agency relationship. According to Jensen and Meckling (1989), these costs can be grouped into three categories: Monitoring costs borne by the principal to limit the opportunistic behavior of the agent and incentive costs (incentive systems) incurred by the principal to orient the agent's behavior. Also, the obligation or commitment costs that may have been incurred by the agent to win the principal's trust (motivation cost). The third type of cost is an opportunity cost referred to as "residual loss" which equates to the loss of utility suffered by the principal following a divergence of interest with the agent, such as the cost sustained by the principal following the unfavorable management of the principal's interests by the agent.

Stakeholder Theory

This study is hinged on stakeholder theory. This theory was developed by Freeman (1984) who asserts that organizations are accountable to the shareholders as well as other stakeholders in a company, which is contrary to the belief that only the shareholders are the only stakeholders in a company. It also explains the tripartite relationships that exist in an organization: agents (managers), principals (shareholders), and stakeholders. Moreover, it also promotes a practical, efficient, effective, and ethical way to manage organizations in a highly complex and turbulent environment. Freeman, (1984) defines Stakeholders typically are individuals, groups, and organizations that have an interest in the processes and outcomes of the firm and upon whom the firm depends for the achievement of its goals. These are employees and managers, shareholders, financiers, customers, and suppliers, who are involved in the value-producing processes of the firm. These stakeholders may be referred to as primary stakeholders or legitimate stakeholders (Harrison *et al.*, 2010). Stakeholder theory suggests that "managing for stakeholders" involves attending to the interests and well-being of these stakeholders, at a minimum (Harrison *et al.*, 2010). Hence, other stakeholder groups are included, such as communities, special interest or environmental groups, the media, or even society as a whole. The study is underpinned by stakeholders' theory simply because it holds that companies that have high firm value will attract investors' interest and foster the trust of shareholders and other interested parties in the company and also shows that the company with high firm value will always have high profitability and liquidity.

METHODOLOGY

This study adopts the ex-post facto research design, and panel regression analysis. The population of the study comprises of all the Hundred and Seven (107) listed non-financial companies in the Nigerian Exchange Group as of December 31, 2022. The sample size comprises seventy (70) listed non-financial companies in Nigeria using a purposive judgmental sampling technique, for a period of twelve (12) years (2011-2022) selected to present a clearer picture of the problem in a determinable period. The baseline of 2011 was chosen, because it marked the end of the end of global recession experienced in the 2009-2010.

3.1 Model specification

The multiple regression model used in this study is specified below;

$$\text{Model: } PBV = \beta_0 + \beta_1 LIQ + \beta_2 WC + FS + \epsilon_{it} \text{-----eq. (i)}$$

Where:

PBV = Price to Book Value.

β_0 = The autonomous parameter estimates (constant Term)

β_1 – β_2 Parameter of Coefficient of financial management practice, and firm size

LIQ = Liquidity Management Practice

WC = Working Capital Management Practice

FS = Firm Size

ϵ_{it} = Stochastic Error term.

Table 3.2: Study Variables and their Measurement.

Variable Acronym	Variable Name	Variable Type	Measurement	Source
PBV	Price-to book value	Dependent	Stock market price book value Divided by value of Shares	Kenneth and Ambrose 2017
WC	Working Capital	Independent.	The use of the firm’s current assets and current liabilities in such a way that optimum level capital is maintained (CA/CL) Ratio.	Sabo, <i>et al</i> , (2015).
LIQ	Liquidity	Independent	The ability of a firm to meet its short-term obligations as at when due. CA-INVENTORY /CL (ratio)	Oluyinka. <i>et al.</i> , (2020).
FZ	Firm Size	Control	Natural logarithm of total Assets	Marfuah and Nurlala, (2019)

Source: Researcher’s Compilation 2023.

A priori Expectation

The current research study predicts that the implementation of liquidity and working capital management practices would significantly boost the firm value of non-financial companies in Nigeria. If all aspects of liquidity and working capital management are strong, effective, and efficient, it is presumable that a favorable and positive relationship is required in raising the company value.

RESULT AND DISCUSSION

4.1 Descriptive Statistics

In order to have glimpse of the data used in the study, a first pass at the data in form of descriptive statistics was carried out. This gives us a good idea of the patterns in the data used for the analysis. The summary statistics is presented in Table 1.

Table 1: Descriptive Analysis Result

	PBV	LIQ	WC	FSZ
Mean	0.235289	0.196916	6.426557	7.145994
Median	0.163000	0.185020	6.424501	7.026656
Maximum	0.979408	2.343428	8.775411	9.637000
Minimum	-0.133967	-0.586820	0.000000	2.837000
Std. Dev.	0.242380	0.215440	0.919863	0.839044
Skewness	1.187249	4.233161	-0.633715	0.101525
Kurtosis	3.564105	36.35346	6.167859	3.427538
Jarque-Bera	208.4758	41444.61	386.6017	7.840617
Probability	0.000000	0.000000	0.000000	0.019835
Sum	197.6432	165.4091	5121.966	6002.635
Sum Sq. Dev.	49.28981	38.94169	673.5334	590.6517
Observations	840	840	840	840

Source: E-View 10 Output (2023).

Table 1 shows the total observations of eight hundred and forty (840) consisting of 70 sampled listed non-financial companies in Nigeria for the period of 10 years (2011 to 2022). The probability value for price to book, liquidity, working capital, and firm size is 0.00 which is less than a 5% significant level. The Mean and Median determine the measure of location or value at the center of a frequent distribution. The highest and the lowest values of the mean are 7.145994 and 0.196916 representing firm size (FZ) and liquidity respectively. It reveals that the mean return on price-to-book (PBV) of the sampled listed non-financial companies in Nigeria is 0.235289 with a standard deviation (SD) of 0.242380. The maximum and minimum for PBV, LIQ, WC, and FSZ are 0.979408, 2.343428, 8.775411, and 9.637000 while the minimum values were -0.133967, -0.586820, 0.000000, and 2.837000 respectively. Standard deviation measures the spread of the series; a higher value standard deviation indicates higher dispersion from the mean, while a lower standard deviation value signifies lower dispersion from the mean. The highest and lowest standard deviation recorded was 0.919863 and 0.215440 for working capital and liquidity respectively. The maximum and minimum values help disclose if outliers exist in the dataset. In arriving at the study sample the issue of outliers and missing data was dealt with. The data for price to book value (PBV) is positively skewed with a coefficient of 1.187, meaning that most of the data falls slightly to the right-hand side of the normal curve. The kurtosis coefficient of 3.564 shows that the data is above zero. The kurtosis determines the pickiness or fitness and flatness of the distribution recorded 36.35346 and 3.427538 as the highest and lowest values for liquidity (LIQ) and Firm size (FSZ) respectively. The mean of liquidity in the sampled listed non-financial companies in Nigeria is 0.1969 with a standard deviation (SD) of 0.2154. Its maximum value is 2.3434 while the minimum value -0.5868. The data for liquidity management practice (LQ) is positively skewed with a coefficient of 4.2331, meaning that most of the data falls significantly to the right-hand side of the normal curve. The kurtosis coefficient of 36.3535 shows that the data is far away from zero. The variability of data is disclosed by standard deviation, skewness, and kurtosis. The mean working capital management practice (WC) of the sampled listed non-financial companies in Nigeria is 6.4265 with a standard deviation (SD) of 0.9198. The maximum value is 8.7754 while the minimum value was 0.000. The data for working capital (WC) is negatively skewed with a coefficient of -0.6337, meaning that most of the data falls slightly to the left-hand side of the normal curve. The kurtosis coefficient of 6.1678 shows that the data is far away from zero. The variability of natural capital data is revealed by standard deviation, skewness, and kurtosis. The mean firm size (FSZ) which is the control variable used for the sampled listed

non-financial companies in Nigeria was 7.1460 with a standard deviation (SD) of 0.837. The maximum value is 9.637 while the minimum value was 2.8370. The data for firm size (FSZ) is positively skewed with a coefficient of 0.1015, meaning that most of the data fall slightly to the right-hand side of the normal curve.

Correlation Analysis

Table 2 presents correlation values between dependent and independent variables and the correlation among the independent variables themselves. These values are generated from Pearson Correlation output. The Table contains correlation matrix showing the Pearson correlation coefficients between the dependent and independent variables and among the independent variables of the study. A correlation value above 50% between dependent and independent variables is deemed to be high and a correlation among the independent variables is presumed to be high if the values are 80% and above.

Decision Rule: The Correlation is between two variables which must be -1 and +1

Table 2: Correlation Analysis Result

Correlation				
Probability	PBV	LIQ	WC	FSZ
PBV	1.000000			
	—			
LIQ	-0.055519	1.000000		
	0.1173	—		
WC	0.057617	-0.071744	1.000000	
	0.1041	0.0429	—	
FSZ	-0.118413	0.044376	-0.026097	1.000000
	0.0008	0.2108	0.4619	—

Source: E-View 10 Output (2023)

Table 2 shows the correlation between the dependent variable, PBV and the independent variables of LIQ and WC and among the independent variables themselves on the other hand. Generally, a high correlation is expected between dependent and independent variables while a low correlation is expected among independent variables. According to Gujarati (2004), a correlation coefficient between two independent variables of 0.80 is considered excessive, and thus certain measures are required to correct that anomaly in the data. From the table, it can be seen that all the correlation coefficients among the independent variables are below 0.80. This points to the absence of possible multicollinearity among the independent variables and the correlation between the variables shows that there is a mix of both positive and negative correlation among the dependent and independent variables. There exist negative and significant relationship of 11% correlation between firm value and firm size respectively indicating that the higher the firm value the lower the firm size. Furthermore, it is notable from the analysis that there is a weak negative significant relationship between firm value and working capital to the tune of 7%.

Multicollinearity Test (VIF)

Multicollinearity arises in multiple regression models when two explanatory (independent) variables are “collinear” that is when they stand in an exact or almost exact linear relationship to each other (or to one another). In other words, when one or more independent variants have a stronger influence on others and this condition is a violation of the linear regression model, that so it may affect the validity of the outcome

in any analysis. Variance Inflation Factor (VIF) is used to detect multicollinearity in regression analysis. VIF measures how much the variance of an independent variable is influenced or inflated by its interaction or correlation with other independent variables (Arumona, et al., 2022; Gujarati and Porter, 2009).

The diagnostics test was performed using the variance inflation factor (VIF) to further confirm the absence of multicollinearity problem between independent mutations.

Decision rule: Medium VIF less than 10 indicates the absence of multi-collinearity, while VIF intermediate over 10 is a sign of multi-collinearity. The results of the collinearity diagnostic test are presented in Table 4.3 below:

Decision Rule: A Centered VIF of less than 10 is an indication of an absence of Multicollinearity, while a centered VIF of more than 10 is a sign of Multicollinearity.

Table 3: Multicollinearity Test (VIF)

	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	0.009055	126.1184	NA
LIQ	0.001541	1.824229	1.007004
WC	8.54E-05	5.15607	1.005706
FSZ	0.000101	7.17307	1.002503

Source: E-View 10 Output (2023)

As noted above, the law of multicollinearity test rule uses a variance inflation factor that centered VIF above indicates a lack of multi-collinearity, while VIF intermediate over 10 indicates the presence of multi-collinearity. Table 4 above shows the absence of multicollinearity between independent variables, as all independent variables (LIQ, WC and FSZ) have less than 10 centered VIF.

Heteroskedasticity Test

A heteroskedasticity test was performed as a diagnostic check to verify the robustness of the estimates. Heterogeneous variance occurs when the standard error of the variable being monitored is not constant over time. Heteroscedasticity violates linear regression modelling assumptions and can affect the validity of analytical results. However, heteroscedasticity does not cause any bias in the coefficient estimates, but it reduces the precision, and less precise coefficients are more likely to be estimated. The decision rule is that at 5% level of significance, the null hypothesis will be rejected if the probability value is less than 0.05 otherwise, we do not reject.

Hypothesis

H_0 : The Error Variances are all Equal (Homoskedastic)

H_1 : The Error Variances are not Equal (Heteroskedasticity)

Decision Rule: The Null Hypothesis is to be accepted if the P Value is greater than 5% level of significance

Table 4: Heteroskedasticity Test

Panel Cross-section Heteroskedasticity LR Test
Null hypothesis: Residuals are homoscedastic

Equation: UNTITLED			
Specification: PBV C LIQ WC FSZ			
	Value	Df	Probability
Likelihood ratio	580.0806	70	0.0900
LR test summary:			
	Value	Df	
Restricted LogL	7.485336	836	
Unrestricted LogL	297.5256	836	

Source: E-View 10 Output (2023)

Table 4 shows the results of the panel cross-section Heteroskedasticity regression test. From the result above with a ratio value of 580.0806 and a corresponding probability value of 0.0900 which is greater than 5%, the study therefore posits that, there is no reason to reject the null hypothesis. The residuals are homoskedastic indicating that the samples give a true reflection of the population.

Hausman's Test

The Hausman specification test is a model specification test used in panel data analysis to select between fixed and random effects models. Since the datasets utilised in this investigation were panel, both fixed and random effects regressions were performed. A Hausman specification test was then used to choose between the fixed-effects and random-effects regression models. This test determined if the error term was connected to the regressor. As a result, the decision rule for the Hausman specification test is presented at a 5% level of significance: the hypothesis is stated as follows;

Decision Rule: If the P value is greater than 0.05 (5%), the alternate hypothesis is rejected and the null hypothesis should be accepted

H_0 : Random effect is more appropriate for the Panel Regression analysis

H_1 : Fixed effect is more appropriate for the Panel Regression analysis

As previously stated, if the p-value is less than 0.05, the null hypothesis is rejected. According to the null hypothesis, fixed effects are best suited for panel regression analysis (that is, the preferred model is the fixed effects) if the p-value is less than 0.05. As a result, fixed effects are best suited for panel regression analysis (meaning we reject the random effects model).

Table 5: Hausman Specification Test.

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.290446	3	0.9618

Source: E-View 10 Output (2023)

The result of the Hausman test appended in the table above provide sufficient evidence not to reject the null hypothesis at 5% level of significance as it can be seen that the probability value of 0.9618 is greater than the critical value of 0.05. Therefore, the study upholds that difference in coefficients is not systematic and hence, the random effect model is the most appropriate models for the study.

It is most logical therefore to proceed to another test which is the Langranger Multiplier Test specification test, which will show the appropriateness of otherwise of using the pooled effect or random effect model.

Langranger Multiplier Test (Test between Random and Pooled)

The Langranger Multiplier test is a test for model specification in panel data analysis, which is employed to choose between pooled effect model and the random effects model. Due to the panel nature of the data set, both pooled effect and random effect regression analysis were run (as shown in appendix II as attached). The breusch-pagan langranger multiplier test was then conducted to choose the preferred model between the pooled effect and the random effect regression models and the decision rule for the breusch-pagan langranger multiplier test is stated thus; at 5% Level of significance:

H₀: Pooled effect is not appropriate for the Panel Regression analysis

H₁: Random effect is most appropriate for the Panel Regression analysis

As encapsulated above, if the p-value is less than 0.05 the decision rule is to reject the null hypothesis which states that pooled effect is most appropriate for the Panel Regression analysis (meaning that the preferred model is random effects). Similarly, if the p-value is greater than 0.05 the decision rule is to accept the null hypothesis which states that pooled effect is most appropriate for the Panel Regression analysis (meaning that the random effect model is to be rejected).

Table 6: Breusch-Pagan Langranger Multiplier Test

Cross-section means were removed during computation of correlations			
Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	4647.031	2415	0.0000
Pesaran scaled LM	32.11638		0.0000
Pesaran CD	-1.137067		0.2555

Source: E-View 10 Output (2022)

Based on the probability value of the Breusch-Pagan Langranger Multiplier Test at 0.0000, the null hypothesis is rejected, thus random effect is most appropriate when compared to pooled effect.

Test of Research Hypotheses.

H₀₁: Liquidity management practice has no significant relationship with the Price to Book value of listed non-financial companies in Nigeria.

H₀₂: Working capital management practice does not significantly affect the Price to Book value of listed non-financial companies in Nigeria.

Decision Rule: If P value is less than 5%, it means the probability is significant and should be accepted. If it is more than 5%, it means is insignificant and should be rejected.

Table 7: Random Effect Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.398597	0.125933	3.165141	0.0016
LIQ	-0.040677	0.037705	-1.078815	0.2810

WC	0.007027	0.408642	2.813045	0.0164
FSZ	-0.027998	0.015383	-1.820092	0.0691
Effects Specification				
			S.D.	Rho
Cross-section random			0.176429	0.5233
Idiosyncratic random			0.168380	0.4767
Weighted Statistics				
R-squared	0.606385	Mean dependent var		0.062495
Adjusted R-squared	0.572819	S.D. dependent var		0.168345
S.E. of regression	0.168107	Sum squared resid		23.62540
F-statistic	1.790694	Durbin-Watson stat		1.772094
Prob(F-statistic)	0.000000			

Source: E-View 10 Output (2023)

Table 7 displays and analyses the panel random regression results of the explained variable proxied by PBV as well as the explanatory variables LIQ, WC and FSZ. Between the R^2 and the adjusted R^2 , there is a range of values 60% and 57% respectively. The variation in the dependent variable (PBV) as a result of change in the independent variables is explained by the R^2 of 60%. Therefore, it can be concluded that the independent variables have a combined predictive power of influencing the firm value of listed non-financial firms in Nigeria, with the remaining 40% been explained by other factors not included in the model. Furthermore, the regression results as presented above reveals an intercept of 0.398597 which is positive. This simply implies that when other variables are held constant, the firm value of listed non-financial firms increases by 0.398597. The result of the constant is statistically significant, as indicated by a P-value of 0.0016.

The coefficient of the variable LIQ is -0.040677 with a p-value of 0.2810 (>0.05). It can be deduced that liquidity management practice has a negative and insignificant effect on the firm value of listed non-financial firms which provide support for the null hypothesis.

Also, the second hypothesis revealed that the coefficient of the variable WC was 0.007027 with a p-value of 0.0164 (<0.05). It can be deduced that working capital management practice has a positive and significant effect on the firm value of listed non-financial firms which provide support for the alternative hypothesis. Finally, it is evident from the control variable that firm size has a negative and insignificant effect on the firm value of listed non-financial firms in Nigeria.

DISCUSSION OF FINDINGS

The result of the analysis as explained above revealed that liquidity management practices have a negative and insignificant effect on firm value of listed non-financial firms. The effect of explanatory variables on observed variables was analyzed in terms of strength and significance while panel multiple regression analyses were used to determine the relationship among variables. As shown in Table 7 above, liquidity (LIQ) recorded a co-efficient of -0.040677 with a P value of 0.2810. Using the decision rule of 5% significantly level. The P. value of 0.2810 and a coefficient value of -0.040677, show that the P. value of 0.2810 is greater than 5%. This explains that the relationship between liquidity (LIQ) and price-to-book

value (PBV) is insignificantly and the coefficient is negative. This describes an increase in liquidity by one value will bring about a correspondence decrease of 4% in Price- Book Value (PBV), holding other variables constant and the effect is insignificant. The finding is in tandem with the study of Oluyinka *et al.*, (2020) but disagrees with the study of Ismail and Anwaru (2021). It is evident from the second hypothesis that a positive and significant effect exists between working capital management practice and firm value of listed non-financial companies. The research outcome is in tandem with the apriori expectation. Working capital has a co-efficient value of 0.007027 and a P value of 0.0164. Using the decision rule of 5% significantly level. The P. value of 0.0164 and a coefficient value of 0.007027, show that the P. value of 0.0164 is less than 5%. This indicates that the relationship between working capital management (WCM) and price–book–value (PBV) is significant and the coefficient is positive. This signifies an increase in working capital (WC) by one, holding other variables constant will positively increase Price- to Book Value (PBV) by 7% and the effect is statistically significant. This study is in tandem with the study of Abdul *et al.*, (2021) but disagrees with the study of Abdirahim and Willy (2021). When taken collectively, the probability of (F-statistic) 0.0000, and F- statistics result of 1.790694 showed that in the long- run liquidity and working capital management are both positively and significantly related to firm value.

CONCLUSIONS AND RECOMMENDATIONS

The firm value of business reveals the strength and the extent of organization solvency and it's affected by the way and manner liquidity and working capital are managed by an organization. Certainly, inefficient companies are usually the product of poor management of their liquidity and working capital. The study therefore, examine the relationship between liquidity and working capital management practices on firm value of listed non-financial companies in Nigeria from 2011-2022, using data obtained from audited financial statement of seventy (70) companies under non-financial firms. It was discovered that liquidity is negatively and insignificantly related to firm value while working capital is positively and significantly related to the firm value of non-financial companies in Nigeria. This reveals that liquidity and working capital management practices of non-financial firms in Nigeria increase the profitability and firm value of a company. Based on the findings of this study, the following recommendations are made for efficient financial management practices of listed non-financial firms on the Nigeria Exchange Group.

1. The management of non-financial companies should review the liquidity management practice to anticipate potential liquidity gaps, as a result of its negative effect on firm value. This will help to allocate resources effectively and make informed decisions about financing and investments, thereby increasing their profitability and firm value.
2. It also recommended that the management of non-financial companies should improve working capital management practices to balance operational needs with cost considerations since it has a positive effect on firm value and also avoid overstocking or understocking, which can tie up resources or disrupt operations of the company. Hence, increasing the company's profitability and firm value.

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