LIQUIDITY AND SOLVENCY ON PROFITABILITY OF BREWERIES IN NIGERIA

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Abstract: *The study examined the effect of liquidity and solvency on profitability of brewery firms in Nigeria. The study was carried out on the four (4) brewery firms listed on Nigeria Stock Exchange during the period from 2011 to 2022. The four brewery firms are: Guinness Nigeria Plc, Nigeria Breweries Plc, Champion Breweries Nigeria Plc and International Breweries Plc. Ordinary Least Square Regression Analysis was used to examine the effect of liquidity and solvency on profitability of the brewery firms. Results from the study suggest that the effect of Current Ratio and Debt Equity Ratio on Return on Equity of the Brewery firms is positive, but statistically non-significant while the effect of Quick Ratio and Debt Equity Ratio on Return on Equity is negative, but statistically non-significant. In view of these results the study **r**ecommended that the firm managers of brewery firms in Nigeria should maintain their current ratio at the industrial average of at least 2:1 at all times by investing idle funds on government bonds, treasury bills and other near cash items that can easily be converted to cash in order to mitigate liquidity risk. Also, the firm managers should maintain their quick ratio at the industrial average of at least 1:1 by using inventory management techniques such as economic order quantity, reorder level and so on. Furthermore, the firm managers should increase return on equity and maximize shareholder's wealth by using more of equity financing than debt to fund their assets. Lastly, the firm manager should maximize return on equity by locating their firms' optimal capital structure and fund their business operations in line with the optimal capital structure.*

1. INTRODUCTION
1.1 Background of the Study

The concern of business owners and managers all over the world is to devise a strategy of managing the day to day operations of their business in order to meet their short-term and long-term business obligations as they fall due and also to increase firm profitability and create wealth for the shareholders of the firms (Janglani & Sandhar, 2013). Hence, the achievement of business goal depends to a large extent on the ability of firm to manage its sources of funds optimally. The fund must be available in a certain amount so that it is enough when needed and not too much where it would be idle and considered lost potential (Kanaan & Saoud, 2018). Thus, liquidity and solvency are the two important aspects of overall financial security management of every firms. They are the two important key indicators used to measures the

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efficiency and long term sustainability of firms. While there may be interrelations between liquidity and debt based on the hedging theory, large firms normally manage the level of liquidity and debt to maximize their performance and returns (Burrow, Martin, Martin, Keown, Titman & Petty, 2015).

Bodie and Merton (2000) defined liquidity as the relative ease, cost, and speed with which an asset can be converted into cash which gives an insight of the ability of the firm to meet its maturing current obligation and pay off creditors as the loan matures and is essential for firms' existence. Ogundipe; Idowu and Ogundipe (2012) suggested that firms are required to maintain an appropriate balance between liquidity and profitability while conducting their daily operations. This is because both inadequate liquidity and surplus liquidity directly affect profitability. In support of this, Spinella (2007) stated that when the necessary level of liquid assets is exceeded, their surpluses when the market risk remains stable, become a source of ineffective utilization of resources which has an adverse effect on profitability. An insufficient working capital on the other hand, result in a liquidity crisis which is life threatening and can force a firm into bankruptcy, often with little notice. Robinson; Henry; Pirie and Broihahn (2015) identified liquidity ratios include as; current ratio, cash ratio, and quick ratio which indicates the conversion of assets into cash and it also measure the ability of a firm to meet short-term liabilities.

Goel, Chadha and Sharma (2015) defined solvency otherwise known as financial leverage as the relationship between borrowed funds and owner's funds in the capital structure of a 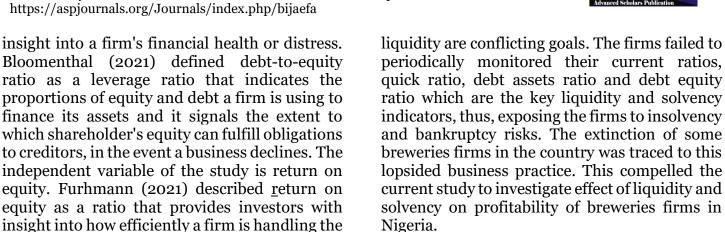firm. It includes debt, common equity that are used to finance the firm's total assets, operations and financial growth. Kasmir (2014) opined that when comparing the debt of one firm to that of others, leverage ratio is frequently used. The leverage ratio or also known as the solvency ratio is used to measure the extent of the company's assets that are financed by debt. Murray (2017) stated that along with liquidity, solvency enables a firm to maintain continuity in business. Solvency is the ability of a business to have enough assets to cover its liabilities. The business assets are the things the business owns, and the liabilities are what the business owes on those things. Every business has problems with cash flow occasionally, especially during financial crises or when starting up the business. If the business has too many bills to pay and not enough assets including cash to pay those bills, the business will not survive. Some of the most commonly used solvency ratios are: debt equity ratio and debt assets ratio.

Mukhopadhyay and Vaidya (2020) defined he current ratio as a liquidity ratio that indicates a company's capacity to repay short-term loans that are due within the one year or one business operating cycle. It is a liquidity ratio that measures a firm's ability to pay off its short-term liabilities with its current assets. Seth (2021) described quick ratio as a liquidity ratio that measures a company's ability to meet its short-term business obligations with its most liquid assets. It is an indicator of a company's short-term liquidity position. A ratio of 1:1 is regarded ideal for quick ratio. Carlson (2020) described debt-to-asset ratio as a leverage ratio that measures the amount of total assets that are financed by creditors instead of investors. It is an indicator of financial leverage or a measure of solvency. It also gives financial managers critical

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insight into a firm's financial health or distress. Bloomenthal (2021) defined debt-to-equity ratio as a leverage ratio that indicates the proportions of equity and debt a firm is using to finance its assets and it signals the extent to which shareholder's equity can fulfill obligations to creditors, in the event a business declines. The independent variable of the study is return on equity. Furhmann (2021) described return on equity as a ratio that provides investors with insight into how efficiently a firm is handling the money that shareholders have contributed to the firm. Similarly, Prihadi (2010) also defined return on equity as a ratio that measures the effectiveness of the company's performance viewed from gains or profits obtained by utilizing the capital or equity owned.

1.2 Statement of the Problem

The importance of liquidity and solvency in business operation cannot be overemphasized. Liquidity and solvency are the two important aspects of overall financial management of every firms. They are the two important key indicators used to measures the efficiency, short-term and long-term sustainability of firms. Liquidity and solvency ensure that a firm has enough assets to meet their short-term and long-term business obligations as they fall. They represent one of the crucial areas that firms' management require constant attention because of their importance to firm sustainability and survival. Thus, proper liquidity and solvency management ensure that firm are able to generate enough cash flow to cover short-term and long term business needs. Unfortunately, the main focus of most breweries firm in Nigeria is profitability maximization while the need for efficient management of liquidity and solvency is ignored. This approach is justified by the belief that profitability and liquidity are conflicting goals. The firms failed to periodically monitored their current ratios, quick ratio, debt assets ratio and debt equity ratio which are the key liquidity and solvency indicators, thus, exposing the firms to insolvency and bankruptcy risks. The extinction of some breweries firms in the country was traced to this lopsided business practice. This compelled the current study to investigate effect of liquidity and solvency on profitability of breweries firms in Nigeria.

1.3 Objectives of the study

The main objective of this study is to determine effect of liquidity and solvency on profitability of breweries firms in Nigeria. Specifically, the study seeks to:

i. Evaluate effect of current ratio on return on equity of brewery firms in Nigeria.
ii. Investigate effect of quick ratio on return on equity of brewery firms in Nigeria.
iii. Examine effect of debt assets ratio on return on assets of brewery firms in Nigeria
iv. Ascertain effect of debt equity ratio on return on equity of brewery firms in Nigeria.

1.4 Research Questions

The following research questions have been raised to address the specific objectives of the study:

i. What is the effect of current ratio on return on equity of brewery firms in Nigeria?
ii. To what extent does quick ratio effect return on equity of brewery firms in Nigeria?
iii. How does debt assets ratio affect return on equity of brewery firms in Nigeria?

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iv. To what degree does debt equity ratio affect return on equity of brewery firms in Nigeria?

1.5 Statement of Hypotheses

The following hypotheses were formulated in line with specific objectives of the study:

i. Current ratio does not significantly affect return on equity of brewery firms in Nigeria.

ii. Quick ratio does not significantly affect return on equity of brewery firms in Nigeria.

iii. Debt assets ratio does not significantly affect return on equity of brewery firms in Nigeria.

iv. Debt equity ratio does not significantly affect return on equity of brewery firms in Nigeria.

2. REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 Liquidity and Solvency Ratios

Kesimli and Gunay (2011) define liquidity as investment in current assets and current liabilities which are liquidated within one year or less and is crucial for day to day operations of a firm. Reschiwati; Syahdina and Handayani (2020) equally describe liquidity as a ratio that measure a firm's ability to meet its short-term obligations. A high liquidity firms can pay its short-term business obligation without difficulty and so tends to reduce total debt in its capital structure. In view of this, it can be stated that liquidity affects capital structure of firm. Also a highly liquid firm send sends positive signal to the stock market which causes the stock market value of the firm to rise thus increasing the firm value of the firms. Therefore, it can be stated that liquidity affects the value of firms. Janglani and Sandhar (2013) state that liquidity and its

management determines to a great extent the growth and profitability of a non-financial firms. This is because either inadequate liquidity or excess liquidity may be injurious to the smooth operations of the organization. Kanaan and Saoud (2018) suggest that in order to achieve the performance that companies desire, they must maintain acceptable levels of liquidity and achieve a balance between internal and external sources of financing. Khidmat and Rehman (2014) state that liquidity ratios are used within the support of liquidity management inside each organization in the form of current ratio and quick ratio with the intention of extremely influence on the profitability of organization. Evan (2015) confirms that current ratio, quick ratio and operating cash flow ratio or cash ratio are among the liquidity ratios that are commonly used to compare a firm's most liquid assets to its total current liabilities.

Dahiyat (2016) states that solvency ratios help to determine whether an entity will be able to meet its financial obligations in the short-and long term. Moreover, the solvency ratios provide an assessment of the likelihood of a company to continue meet its debt obligations. Solvency is traditionally viewed as arising from financing activities, firms borrow to raise cash for operations. Yusoff (2017) asserts that solvency ratios provide an indication of the business's ability to repay all financial obligations if all assets were sold, as well as an indication of the ability to continue operations as a viable business after a financial adversity. If a firm is unable to meets its obligation, it is said to be insolvent and must undergo bankruptcy in order to either liquidate or restructure. Wohler (2017) opines that the most popular solvency rations used in empirical studies include: debt to equity

ratio, debt assets ratio and interest coverage ratio while the most liquidity ratios used are, current ratio and quick ratio. This study used current ratio, quick ratio, debt assets ratio and debt equity ratio to examined the effect of liquidity and solvency on profitability of breweries firms in Nigeria

2.1.2 Current Ratio

Kibet (2021) defines current ratio, sometimes referred to as the working capital ratio as a metric used to measure a company's ability to pay its short-term liabilities due within a year. In other words, it shows how a company can maximize current assets to settle its short-term obligations. The current ratio weighs up all of a company's current assets to its current liabilities. A good current ratio is typically considered to be anywhere between 1.5 and 3. Robinson et al., (2015) define current ration as a company's ability to pay short-term liabilities such as payable accounts and short-term loans, which represents the ratio of current assets to current liabilities. The current ratio helps investors and creditors understand the liquidity of a company and how easily that company will be able to pay off its current liabilities. This ratio expresses a firm's current debt in terms of current assets. So a current ratio of 4 would mean that the company has 4 times more current assets than current liabilities. A higher current ratio is always more favorable than a lower current ratio because it shows the company can more easily make current debt payments.

Robinson et al., (2015) state that companies have limited amount of time in order to raise funds to pay for its short current liabilities. Current assets like cash, cash equivalents, and marketable securities can easily be converted into cash in the short term. This means that companies with larger amounts of current assets will more easily be able to pay off current liabilities when they become due without having to sell off long-term, revenue generating assets. Also the generally accepted accounting principle requires that companies separate current and long-term assets and liabilities on their statement of financial position. This split allows investors and creditors to calculate important ratios like the current ratio. Smita (2016) asserts that current assets and current liabilities are the two basic components of current ratio and describe current assets to include cash and those assets which can be easily converted into cash within one year or one business operating cycle. Current assets include, cash, bills receivables, sundry debtors, inventories, work-in-progress and so on. Fernando (2021) states that a current ratio that is in line with the industry average or slightly higher is generally considered acceptable. A current ratio that is lower than the industry average may indicate a higher risk of distress or default. Similarly, if a firm has a very high current ratio compared with its peer group, it indicates that management may not be using its assets efficiently.

2.1.3 Quick Ratio

Seth (2021) describes quick ratio as a liquidity ratio that measures a firm's ability to meet its short-term business obligations with its most liquid assets. It is an indicator of a company's short-term liquidity position. A ratio of 1:1 is regarded ideal for quick ratio. Since it indicates the company's ability to instantly use its near-cash assets (assets that can be converted quickly to cash) to pay down its current liabilities, it is also called the acid test ratio. An "acid test" is a slang term for a quick test designed to produce instant results. Sinha (2012) states that

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quick ratio includes the most liquid of current assets to current liabilities. This ratio excludes prepaid expenses and inventory from current assets being difficult conversion into cash. The rise in the value of quick ratio expresses high liquidity of the firm. Shobhit (2021) opines that the quick ratio measures a firm's capacity to pay its current liabilities without needing to sell its inventory or obtain additional financing. The quick ratio is considered a more conservative measure than the current ratio, which includes all current assets as coverage for current liabilities. The higher the ratio result, the better a company's liquidity and financial health; the lower the ratio, the more likely the company will struggle with paying debts.

Folger (2022) states that both the current ratio and quick ratio measure a company's short-term liquidity, or its ability to generate enough cash to pay off all debts should they become due at once. Although they're both measures of a company's financial health, they're slightly different. The quick ratio is considered more conservative than the current ratio because its calculation factors in fewer items. Since it indicates the firm's ability to instantly use its near-cash assets (assets that can be converted quickly to cash) to pay down its current liabilities, it is also called the acid test ratio. Shumba (2021) asserts that quick ratio measures a company's ability to pay its short-term liabilities when they come due by selling assets that can be quickly turned into cash. It's also called the acid test ratio, or the quick liquidity ratio because it uses quick assets, or those that can be converted to cash within 90 days or less. This includes cash and cash equivalents, marketable securities, and current accounts receivable. A quick ratio of 1 is considered the industry average.

2.1.4 Debt Assets Ratio

Peavler (2018) describes debt to asset ratio, also known as the debt ratio, as a leverage ratio that indicates the percentage of assets that are being financed with debt. The higher the ratio, the greater the degree of leverage and financial risk. Bankers often use the debt-to-asset ratio to see how a firm's assets are financed. In general, a bank will consider a lower ratio to be a good indicator of a firm's ability to repay debts or take additional debt to support new opportunities. A high ratio indicates a substantial dependence on debt and could be a sign of financial weakness. Carlson (2020) also posits that a high debt-to-assets ratio implies that the firm will have trouble borrowing more money, or that it may borrow money only at a higher interest rate than if the ratio were lower. Highly leveraged firms may be putting themselves at risk of insolvency or bankruptcy depending upon the type of firm and industry. Some industries can use more debt financing than others.

Blakely (2021) states that a debt-to-assets ratio is a type of leverage ratio that compares a firm's debt obligations (both short-term debt and long-term debt) to the firm's total assets. if the debt-to-assets ratio is greater than one, a business has more debt than assets. If the ratio is less than one, the business has more assets than debt. A firm with a high ratio of total debt to total assets has a relatively high degree of leverage and may lack the financial flexibility of a business where assets outweigh debts. A firm's debt-to-assets ratio can reveal information about its capital structure and offer a window into the firm's leverage. The more leveraged a business is, the more it relies on its lenders for

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continued solvency. A firm with high debt can suffer when interest rates rise, forcing the company to channel its revenue toward loan repayments instead of paying salaries or buying new equipment. On the contrary, when a firm's assets exceed its total amount of debt, the company enjoys more financial flexibility. A firm with lower debt can pay higher salaries and expand more aggressively since it does not need to spend a lot of money paying down debt. On the other hand, a reasonable amount of debt can benefit a company. Loans provide immediate cash flow, and cash can be spent on expanding a business.

2.1.5 Debt Equity Ratio

Fernando (2021) posits that debt-to-equity ratio also referred to as gearing ratio. is used to evaluate a firm's financial leverage and is determined by dividing a firm's total liabilities by its shareholder equity. The debt equity ratio is an important metric used in corporate finance and it is a measure of the degree to which a firm is financing its operations through debt versus wholly equity funds. More specifically, it reflects the ability of shareholder equity to cover all outstanding debts in the event of a business downturn. Velnampy and Niresh (2012) state that the proportion of debt and equity is a strategic choice of corporate managers and it is a significant managerial decision because it influences the shareholder's return and risk. Consequently, the market value of a share may be affected by the capital structure decision, and the company will have to plan its capital structure initially, at the time of its inception. Bloomenthal (2021) states that a low debt-to-equity ratio indicates a lower amount of financing by debt compared to funding through shareholders' equity. A higher ratio on the contrary indicates that the firm is getting more of its financing through borrowing funds, which subjects the firm to potential risk as the debt level increases. The greater a firm's operations rely on borrowed money, the greater the risk of bankruptcy, if the business gets into difficult times. This is because debt payment obligation must still be fulfilled even if the firm has not made enough profit to meet the debt obligations. Thus, a highly leveraged firm with sustained earnings declines could result in financial distress or bankruptcy. Khan, Naz, Khan, Khan and Ahmad (2013) also posit that the financing or capital structure decision is significant managerial decision, as it influences the shareholder return and risk. The market price of the shares is also affected by the capital structure decision and the firm has to plan it initially at the time of promotion.

2.1.6 Firm Profitability

Husna and Desiyanti (2016) define profitability as the firm's ability to generate revenue using complete services & resources like capital, sales, cash, number of workers, and the number of branches. Profitability of a firm can be measured through different ratios; they are helpful to calculate the firm's ability in earnings. Examples of profitability ratio are: net profit margin, return on assets and return on equity. Koller (2011) argues that profitability is the most important and reliable indicator as it gives a broad indicator of the ability of a company to raise its income level. In practice, executives define profits as the difference between total earnings from all earning assets and total expenditure on managing entire asset-liabilities portfolio. Chandler (2009) posits that profitability is the firm's ability to produce a profit that would sustain long-term and short-

term growth. The competition in the markets has got a role in determining company's profitability. Regardless of the divergence that exists in the market, the companies retain their profitability over time by the market dynamics. Van Horne and Wachowicz (2012) state that profitability is a firm's ability to generate profit in the future and as an indicator of the successes of the firm's operation. Increasing net profit can be one indication that the firm's value also increases, because the increasing of net firm's profit means stock price increases.

Manoppo and Arie (2016) opine that profitability is a measure of how well a firm can generate profits from operational processes that have been implemented to ensure the continuity of the firm in the future. High profits increases the confidence of creditor to provide loans facility to the firm and also increases the confidence of public investors to invest their capital in the business. In view of this, it can be stated that profitability influences capital structure of a firm. Nawaf (2010) states that profitability as the earning of the firm or consistency of cash inflows of the firm. It is the promise for a company to remain a going concern in the world of business. The amount of profit can be a good measure of the performance of a firm. It is influenced by a number of factors such as firm size, exports of the firm, reliance on debt, age, fixed asset growth and sales growth. Kouser et al, (2012) assert that there are many methods to measure profitability such as profit after tax, return on assets, return on equity and return on sales. This study adopted return on assert as a measure of firm profitability.

2.1.7 Return on Equity

Furhmann (2021) defines return on equity as a ratio that provides investors with insight into how efficiently a firm is handling the money that shareholders have contributed to the firm. It measures the profitability of a corporation in relation to stockholders' equity. The higher the return on equity, the more efficient a firm's management is at generating income and growth from its equity financing. Return on equity is often used to compare a firm to its competitors and the overall market. The ratio is especially beneficial when comparing firms of the same industry since it tends to give accurate indications of which firms are operating with greater financial efficiency and for the evaluation of nearly any firm with primarily tangible rather than intangible assets. Calamar (2015) opines that return on equity may be lower or higher depending on the general profitability of the industry in which the company operates. Also, a firm may have an inflated return on equity because of a very small value of book equity on its statement of financial position. Likewise, the firm may have taken on a large debt burden, increasing its leverage and potentially increasing return on equity without increasing profitability or efficiency.
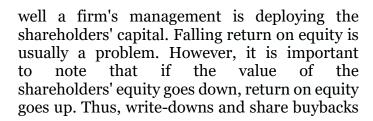
Kabajeh, Al Nu'Aimat and Dahmash (2012) also describe return on equity as a profitability ratio that is used to measure the level of return the firm or the effectiveness of the firm in generating profits that are the rights of capital owners. Return on equity is calculated as net profit after tax divided by the total shareholder's equity. This ratio measures the shareholders rate of return on their investment in the company. Brown (2016) states that return on equity is more than a measure of profit; it's a measure of efficiency. A rising return on equity suggests that a firm is increasing its ability to generate profit without needing as much capital. It also indicates how

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well a firm's management is deploying the shareholders' capital. Falling return on equity is usually a problem. However, it is important to note that if the value of the shareholders' equity goes down, return on equity goes up. Thus, write-downs and share buybacks can artificially boost return on equity. Likewise, a high level of debt can artificially boost return on equity after all, the more debt a firm has, the less shareholders' equity it has.

1. CURRENT RATIO (CURR)
2. QUICK RATIO (QUKR)
3. DEBT ASSETS RATIO (DBAR)
4. DEBT EQUITY RATIO (DBER)

RETURN ON RQUITY

2.3 Theoretical Framework

The study is anchored on the Liquidity Preference Theory propounded by John Maynard Keynes in 1936.

2.2.1 Liquidity Preference Theory

John Maynard Keynes developed the Liquidity Preference Theory in 1936. Keynes (1936) argued that individuals and firms hold money for three motives, the transactions-motive, the precautionary-motive and the speculative-motive. The transactions motive refers to the fact that individuals have a preference for liquidity in order to guarantee having sufficient cash on hand for basic transactions because income is not always readily available. The precautionary motive is related to individuals' preference for liquidity as additional security in the event that an unexpected occasion or problem arises that requires a substantial outlay of cash. Individuals may also have a speculative motive, based on the belief that bond prices may begin to significantly decrease, thus offering the investor the opportunity to use liquid funds to make an investment offering a more attractive rate of return.

Keynes (1936) purported that they tend to relinquish interest earnings on their money in order to spend their money in the present. Keynes also theorizes that when higher interest rates are offered, individuals are more willing to hold on to less money in order to obtain a profit. The liquidity preference theory suggests that an investor demands a higher interest rate, or premium, on securities with long-term maturities, which carry greater risk, because all other factors being equal, investors prefer cash or other highly liquid holdings. Investments that are more liquid are easier to sell fast for full value.

Since its birth, liquidity preference has been the subject of many empirical studies without any apparent consensus on its foundations and meaning. Liquidity preference has evolved like an ice-barrier constituted of various layers of ice,

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each contribution adding its own explanation without removing the others. Keynes presents personal ideas which matured during many years and were the result of many personal syntheses and revisions. The definition of liquidity preference in the General Theory is a good illustration of such a process.

2.4 Empirical Review

2.4.1 Current Ratio and Firm Profitability

Ayoush; Toumeh and Shabaneh (2021) studied the relative impact of liquidity, leverage, and solvency on profitability of industrial enterprises listed on the Amman Stock Exchange. Return on assets (ROA) and return on equity (ROE) are examined as measures of performance, current ratio and quick ratio as measures of liquidity, debt ratio and debt to equity ratio as measures of leverage, and the interest coverage ratio as a measure of financial solvency. The sample consist of forty-four (44) Jordanian industrial companies listed in Amman during the period from 2012 to 2018. Multiple regression analysis was used to test the null hypothesis formulated for the study and to conduct other data analysis. A negative and statistically significant impact was found between financial leverage and profitability. At the same time, findings did not show the same for the effect of liquidity and solvency on profitability. Leverage exerted the highest relative impact on profitability among all the independent variables examined, this was followed by solvency and then liquidity. Firm size was a control variable on the effect of liquidity, leverage, and solvency on performance of the firms.

In Jordan, Dahiyat,; Weshah and Aldahiyat (2021) conducted a study on the impact of liquidity and solvency management on the financial performance of manufacturing firms listed on Amman Stock Exchange during the period from 2010 to 2019. The dependent variables and measures of financial performance are: return on assets and earnings per share. The independent variables are: current ratio (liquidity ratio) and debts to assets (solvency ratio). Firm size was used as the control variable, of the study calculated as logarithm of total assets. The data collect from the selected firms were analyzed using correlation and multi regression analyses. Findings from the study indicate a statistically significant impact of independent and control variables (liquidity and solvency and firm size) on financial performance. Result further reveal that liquidity has an inverse and statistically non-insignificant impact on financial performance. A significant positive impact of size on financial performance and a significant negative impact of solvency on financial performance were equally observed from the study.

Mustafa; Sethar; Pitafi and Kamran (2019) examined the impact of liquidity ratio on profitability of firm using Automobile Industry of Pakistan as an evidence. The liquidity ratio examined were: current ratio, cash ratio, and quick ratio, whereas profitability or financial performance of firm were measured with return on equity and return on assets. A sample of twelve (12) automobile firms listed in Pakistan was selected for the study. Panel data regression and correlation analysis was used to analyze the data extracted for the firms. Results from the analysis suggest that the liquidity (quick ratio) positively effect on profitability; return on assets. However, there is a negative relationship between liquidity (current ratio and cash ratio) with return on asset.

Batrancea (2018) investigated the degree to which financial performance influenced long-

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term financial equilibrium on publicly traded firms listed on New York Stock Exchange during the period from 2007Q1–2020Q3. The study covered two major crises that have marked the dawn of the third millennium and occurred relatively close to one another: the 2008 financial meltdown and the COVID-19 pandemic crisis. The independent variables and proxies for financial performance were: earnings before tax, net profit margin, gross profit margin, operating margin ratio, earnings before interest, tax and depreciation and amortization. The dependent variable of the study which were proxies for current ratio, quick ratio and debt to equity ratio. The sample consists of thirty-four (34) major publicly traded firms listed on New York Stock Exchange during the period. Secondary data extracted from the 34 selected firms were analyzed using descriptive and panel data regression analysis. Results from the data analysis suggest that the short-term and long-term financial equilibria of these public firms measured by current ratio, quick ratio and debt to equity ratio were significantly impacted by different financial performance indicators

Al-Ali (2018) investigated the relationships among financial leverage, liquidity and profitability of firms listed on the Damascus Stock Exchange. The dependent variables which is firm profitability was measured by return on equity and return on asserts while liquidity was measured by current ratio and the cash flow rate from operating activities. A sample of four (4) service and industrial enterprises listed form Damascus Stock Exchange was selected for the study. Time series data of covering the period from 2012 to 2016 were collected and analyzed using regression analysis. Result of analysis indicate that liquidity measured by current ratio and operating cash flow negatively affect return on assets and return on equity. On the other hand, financial leverage positively affect firm profitability measured by return on assets and return on equity.

2.4.2 Quick Ratio and Firm Profitability

Reschiwati; Syahdina and Handayani (2020) studied the effect of liquidity, profitability, and size of companies on firm value. A sample of 15 banking companies listed on the Indonesian Stock Exchange during the period from 2014-2018 were selected for the study. Regression analysis was used to analyze the data collected from the selected banks. Results from the analysis indicate that liquidity, profitability, and firm size significantly influence capital structure. Capital structure is not a mediator of the influence of liquidity and profitability on firm value, while the capital structure is a mediator of the effect of firm size on firm value.

In India, Yameen; Farhan & Tabash (2019) sampled a total of eight two (82) pharmaceutical listed on Bombay Stock Exchange and investigated the impact of liquidity on firms' performance during 2008 to 2017. The data used for the study were extracted from ProwessIQ database which were analyzed using regression analysis. Findings from the study reveal that current ratio and quick ratio have a positive and significant impact on the profitability of the pharmaceutical firms measured by return on assets. Results also show that the control variables consisting of, leverage, firms' size, and age have a negative impact on the profitability of the listed pharmaceutical firms. Regulators, finance managers and other people in India will find this study of importance regulating the liquidity of the pharmaceutical sector in the country.

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Madushanka and Jathurika (2019) conducted a study to analyze the impact of liquidity ratios on profitability of listed manufacturing firms in Sri Lanka. The study targeted the entire population of 56 industrial enterprises listed on the Amman Stock Exchange from 2012 to 2018. A sample of 15 firms were selected from this population after some firms were eliminated from the sample. The sample was chosen based on the exclusion of companies that are subject to mergers or acquisitions by other companies, liquidated or suspended from trading during the study period. In addition, all companies whose full data has not been obtained, including those that are listed for trading in the market after 2012, are excluded. Descriptive, correlation and pane data regression analysis were applied on the secondary data collected for the annual accounts and financial statements of the selected firms. Result of analysis show that liquidity ratios, particularly quick ratio have positive and significantly effect on firm profitability.

Onyekwelu; Chukwuani & Onyeka (2018) used multiple regression analysis to examine the effect of liquidity on financial performance of deposit money banks in Nigeria. The sample consist of five (5) deposit money banks listed on Nigeria Stock Exchange during the period of ten (10) years (2007-2016). Findings from the study show that liquidity has positive and significant effect on banks' profitability ratios and that liquidity also has positive and significant effect on return on capital employed. The Central Bank of Nigeria was advised to critically review and follow-up or monitor the effectiveness of liquidity policy tools in banks and where necessary, appropriate sanctions placed on erring banks to ensure effective implementation of these policy to achieve desired liquidity level.

Khaldun and Muda (2014) studied the influence of profitability and liquidity ratios on the growth of profit of foods and beverage manufacturing firms in Indonesia. Precisely, the study investigated how profitability and liquidity ratios influence profit growth of foods and beverage manufacturing firms listed on Indonesia Stock Exchange the period from 2010-2012. The independent variables examined are: current ratio, quick ratio, cash ratio (liquidity ratio). The profitability ratios are: gross profit margin, return on asset and return on equity. The independent variable is profit growth. The entire population of food and beverage manufacturing firms listed on the Indonesia Stock Exchange during the period were targeted while the sample consist of sixteen (16) of the foods and beverage firms. Data were obtained from the annual report and account of the selected firms and were analyzed using descriptive statistics and panel data regression model. Results show that simultantly, current ratio, quick ratio, cash ratio, gross profit margin, return on assets and return on equity have significant influence on profit growth. Partially, all the six (6) independent variables have no significant influence on profit growth of the food and beverages manufacturing firms.

2.4.3 Debt Assets Ratio and Firm Profitability

In Indonesian, Putro (2021) investigated the effect of debt on asset ratios, return on assets, and earnings per share on stock returns in construction and building sub-sector firm listed on the Indonesian Stock Exchange. The sample consisted of (9) construction and building sub-sector firm listed on Bombay Stock Exchange during the period from 2014 to 2018. The sample was selected using purposive sampling

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technique. Data were extracted from the annual report and accounts of the sampled firms and were analyzed using multiple regression analysis. Findings from the study reveal that debt assets ratio has a significant effect on stock returns. Return on assets and earning per share have no significant effect on stock returns. Results further show that debt assets ratio, return on assets, and earnings per share simultaneously affect stock returns.

Nguyen and Nguyen (2020) examined the determinants of profitability for the companies listed on the Vietnamese Stock Exchange during the period from 2014 to 2017. The sample consist of 1,343 Vietnamese firms classified in six different industries for the period 2014–2017. The determinants examined are company size, liquidity, solvency, leverage, and financial adequacy. Regression analysis was used to analyze the data obtained from the annual report and account of the selected firms. Result of analysis indicate that firm size, financial adequacy, and solvency have a positive effect on both return on assets and return on equity while having a negative effect on return on assets, leverage showed a positive effect on assets and return, but it had a negative one on return on equity and return on sales. The results also showed that liquidity has a negative effect on return on sales whereas a positive one on both return on equity and assets and return

Widyastuti (2019) sampled Seven (7) foods and beverage manufacturing firms listed in Indonesia to investigate the effect of liquidity, activity ratios and leverage on financial performance and firm value of food and beverage firms. All food and beverage companies listed in Indonesia constituted the population of the study. Firms that did not experience losses with

positive capital were sampled for the study. Data were extracted from the selected foods and beverage firms covering the period from 2015 to 2016. Data were obtained from the annual accounts and financial statements of the selected firms and analyzed using multiple regression analysis. Results indicate that liquidity as measured by current ratio, cash ratio, quick ratio has a positive and significant effect on net profit margin and return on assets. Results also suggest that financial performance variables have a significant positive effect on firm value as surrogated by Price Book Value Ratio, Price Earnings Ratio and Tobin Q ratio. While activities measured by fixed assets turnover, working capital turnover, total assets turnover and leverage measured by debt assets ratio and debt equity ratio did not significantly influence financial performance and firm value.

In the Nigerian, Abdul and Badmus (2017) investigated the relationship between leverage surrogated with debt equity) and debt assets ratio on return on assets of Chemicals and Paints firms listed on the Nigerian Stock Exchange. The sample of the study was made up of three (3) Chemicals and Paints manufacturing firms listed in Nigeria Stock Exchange during the period from 2000 to 2009. Time series data covering the ten (10) years period were collected from the annual accounts and reports of the selected firms and analyzed using ordinary least square regression analysis. The study found that the equity finance had a significant and positive impact on return on assets while the debt ratio had a negative and insignificant relationship on the performance measures. In view of these results, of Chemicals and Paints manufacturing

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firms in Nigeria were advised to use more of equity funding and avoid more debt financing. Omar; Abdul; Syed and Nour (2016) studied the relationship between liquidity ratios and indicators of financial performance (profitability ratios) in the food industrial companies listed in Amman Bursa during the period (2012-2014). The study sample consists of eight (8) industrial companies which operate in the field of food listed in Amman bursa during the period. Correlation analysis was used to analyze the data extracted for the study. Results show there is no relationship between all liquidity ratios and the gross profit margin. However, a weak positive relationship between the current ratio and each of the operating profit margins and the net profit margin were observed. Result further indicate the existence of a positive relationship between (quick ratios, defensive interval ratio) and operating cash flow margin. There is also a positive relationship between liquidity ratios (current ratio, quick ratio, cash ratio) and return on assets.

2.4.4 Debt Equity Ratio and Firm Profitability

Orji; Nwadialor and Nwadialor (2021) adopted *ex-post facto* research design to investigate the effect of debt equity financing on performance of manufacturing firms in Nigeria from during the period from 2013 to 2020. The independent variables were debt equity financing are equity financing and debt equity financing while the dependent variable and proxy for firm performance is return on equity. Data from the selected firms were analyzed using ordinary least square regression analysis. Results from the study disclosed that equity financing and debt equity financing has significant and positive effect on return on equity in Nigeria. The study concluded that debt-equity financing improves firm's performance over the years. Manufacturing firm managers in Nigeria were advised to finance their investment activities with debts and equity and consider either debt or equity as a last option.

Aliwi (2019) conducted a study on the effect of financial leverage on financial performance in Jordan. Debt to equity ratio was as the independent variable and measure of financial leverage while both return on equity and return on assets were used as measures of financial performance. The sample of the study consists of forty none (49) Jordanian public shareholding firms listed in Amman during the period from 2013-2017. Multiple regression analysis was adopted and was used to analyze the time series data extracted from the annual accounts and financial statements of the selected firms. Findings form the analysis indicate that the effect of leverage (debt equity ratio) on return on equity are positively and statistical significant during the period. while there was no impact of financial leverage (debt equity ratio) on financial performance as measured by return on assets.

Affandi; Sunarko and Yunanto (2018) targeted the entire population of manufacturing firms listed on Indonesia Stock Exchange during the period from 2011 to 2016 and investigated the impact of cash ratio, debt to equity ratio, receivables turnover, net profit margin, return on equity, and institutional ownership to dividend payout ratio. Purposive sampling technique was used to select a sample of nineteen (19) manufacturing firms out of this population. Time series data were extracted from the annual financial statement and accounts of the 19 firms and analyzed using multiple linear regression analysis. Other

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statistical tests such as, F-test statistics and T-test were also used in the data analysis. Results of analysis show that receivables turnover, return on equity, and institutional ownership have a significant positive effect on dividend payout ratio. It was further observed from the analysis that cash ratio, debt equity ratio, and net profit margin did not significantly affect dividend payout ratio of the manufacturing firms during the period.

In Indonesia, Nasution, Putri and Dungga (2019) appraised the effect of debt to equity ratio and total asset turnover on return on equity of automotive firms and components in Indonesia. The study targeted the population of thirteen (13) automotive and component companies listed on the Indonesia Stock Exchange during the period from 1998 to 2017. Purposive sampling technique was used to select ten (10) out of the 13 firms to conduct the study. Multiple linear regressions analysis was used to analyze the data collected from the selected firms. Results indicate that debt equity ratio had a significant effect on return on equity. Result further shows that total assets turnover has a significant effect on return on equity.

Yusoff (2017) used quantitative panel data methodology to examine the effect of liquidity and debt on the profitability among large firms in consumer product sector in Malaysia. In order to conduct the study, a sample of one hundred and sixteen (116) firms in consumer product sector listed in Malaysia during the period from 2012- 2015 was selected for the study. Time series data were extracted from the sampled firms and analyzed using multiple regression analysis. Results suggest quick ratio has positive and significant effect on profitability while current ratio has negative but insignificant effect on profitability. It was also observed from the study that solvency has no significant effect on profitability. The study recommends that the firms can improve their performance by increasing the level of liquidity and maintaining their optimal debt structure level.

3. METHODOLOGY

3.1 Research Design: This study adopted *ex-post facto* researcher design. This is the type of research design in which the investigation starts after the fact has occurred without interference from the researcher. The research was therefore conducted with historical financial data obtained from the annual financial statements of brewery firms in Nigeria.

3.2 Area of Study: This study was carried out on the four (4) brewery firms listed on Nigeria Stock Exchange during the period of 2011 to 2020.

3.3 Sources of Data: The data for the study were sources from annual financial statement of the breweries firms listed on Nigeria Stock Exchange during the period.

3.4 Population: Four (4) brewery firms are listed on Nigeria Stock Exchange during the period from 2011 to 2020. These four firms constituted the population of the study.

3.5 Sample Size Determination: The study targeted the entire four (4) brewery firms listed on Nigeria Stock Exchange during the period. The four breweries firms are: Champion Breweries Nigeria Plc, Guinness Nigeria Plc, International Breweries Plc and Nigeria Breweries Plc.

3.6 Model Specification: The researcher developed the following model which are in line with the variables of the study:

$ROE = \beta_0 + \beta_1(CURR) + \beta_2(QUKR) + \beta_3(DBAR) + \beta_4(DBER) + \varepsilon$

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Where: DBAR = Debt Assets Ratio
ROE = Return on Equity   DBER = Debt Equity Ratio
CURR = Current Ratio   β = Beta
QUKR = Quick Ratio   ε = error term

3.7 Description of Variables

Variable Name	Label	Variable Description	Formula
Return on Equity	ROE	This is a profitability or financial performance indicator that measures how efficiently a firm's management is utilizing its total equity to generate returns for the shareholders of the firm. Because shareholders' equity is equal to assets minus its liabilities, the ratio is also referred to as return on net assets.	Return on Assets = Profit for the Year/Total Assets
Current Ratio	CURR	This is a liquidity ratio also known as working capital ratio that measures the ability of a firm to meet its short-term obligations that fall due within a year. A current ratio of 2:1 is considered ideal for most businesses.	Current Ratio = Current Assets/ Current Liabilities
Quick Ratio	QUKR	This is a liquidity ratio that indicates short-term liquidity or the ability to of a firm raise cash to pay its obligations that are due within the next 90 days. It differs from current ratio because it excludes inventory from current assets. A quick ratio of 1:I is ideal for most businesses.	Quick Current Ratio = Current Assets-Inventory / Current Liabilities
Debt Assets Ratio	DBAR	This is a leverage ratio that shows the degree to which a firm has used debt to finance its assets. A firm with high leverage may find it difficult to stay afloat during a recession than one with low leverage.	Debt Assets Ratio = Long Term Loans/ Total Assets
Debt Equity Ratio	DBER	This is a financial leverage ratio that indicates the relative proportion of debts and shareholders' equity used by a firm to finance its asset.	Debt Equity Ratio = Term Loans/ Total Equity

3.8 Method of Data Analysis

Multiple regression analysis was adopted to analyze the data collected for the study annual reports and financial statement of the selected breweries firms. The independent variables and measures of liquidity and solvency ratios are: Current ratio, quick ratio, debt assets ratio and debt equity ratio while the dependent variable and measure of profitability is return on equity.

4. DATA PRESENTATION AND ANALYSIS

4.2 Data Analysis

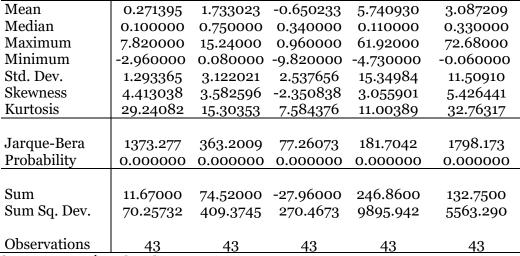The secondary data collected from the annual financial statements of the selected foods and beverage firms were analyzed using descriptive statistics and panel least square regression analysis. The results of the analysis are presented in tables 4.2.1 and 4.2.3.

Table 4.2.1: Descriptive Statistics

	ROE	CURR	QUKR	DBAR	DBER

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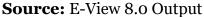|					
Mean	0.271395	1.733023	-0.650233	5.740930	3.087209
Median	0.100000	0.750000	0.340000	0.110000	0.330000
Maximum	7.820000	15.24000	0.960000	61.92000	72.68000
Minimum	-2.960000	0.080000	-9.820000	-4.730000	-0.060000
Std. Dev.	1.293365	3.122021	2.537656	15.34984	11.50910
Skewness	4.413038	3.582596	-2.350838	3.055901	5.426441
Kurtosis	29.24082	15.30353	7.584376	11.00389	32.76317
Jarque-Bera	1373.277	363.2009	77.26073	181.7042	1798.173
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	11.67000	74.52000	-27.96000	246.8600	132.7500
Sum Sq. Dev.	70.25732	409.3745	270.4673	9895.942	5563.290
Observations	43	43	43	43	43

Source: E-View 8.0 Output

Table 4.2.1 presents the Descriptive Statistics of the variables used to conduct the study. The variables are: Return on Equity (ROE), Current Ratio (CURR), Quick Ratio (QUKR), Debt Assets Ratio (DBAR) and Debt Equity Ratio (DBER). The table shows that the mean value of the variables is: 0.271395, 1.733023, -0.650233, 0.740930 and 3.087209 while the standard deviations are: 1.293365, 3.122021, 2.537656, 15.34984 and 11.50910 respectively. It can be inferred from the results of the mean and Standard Deviations that all the variables were volatile during the period under review. Results from the table further reveal that the data set used for the study are normally distributed during the period. This was observed from the Jacque-Bera Statistics with p-values of 0.000000 respectively. This was collaborated by the Skewness and Kurtosis Coefficients, which are all above the benchmark rates of 1 and 3 respectively.

Table 4.2.2: Unit Root Test
Null Hypothesis: Unit root (common unit root process)
Series: ROE
Date: 04/01/23   Time: 17:18
Sample: 2011 2022
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Total (balanced) observations: 40
Cross-sections included: 4

Method	Statistic	Prob.**

Levin, Lin & Chu t*	-2.24106	0.0125

** Probabilities are computed assuming asympotic normality

Intermediate results on ROE

Cross section	2nd Stage Coefficient	Variance of Reg	HAC of Dep.	Lag	Max Lag	Band-width	Obs
1	-0.70981	0.0162	0.0186	1	1	4.0	10
2	-1.26248	0.0702	0.0607	1	1	2.0	10
3	-0.77899	0.0084	0.0213	1	1	1.0	10
4	-1.71096	5.4960	1.1572	1	1	10.0	10

	Coefficient	t-Stat	SE Reg	mu*	sig*		Obs
Pooled	-0.86863	-5.384	1.044	-0.554	0.919		40

Source: E-View 8.0 Output

Results of the unit root test for all the variables are presented in table 4.2.2. This test was conducted to test for the presence of unit root in the model of the study, and hence confirm its fitness for regression analysis. The null hypothesis is that the data set contains a unit root while the alternative is that the data set is stationary. Results from the table show that the coefficient of Levin, Lin & Chu t* is 2.24106 while the p-value is 0.0125, which is less than 0.0, (0.0125<0.05). Hence, we reject the null hypothesis that the data set contains a unit root and accept the alternative that the data set is stationery.

Table 4.2.3: Panel Least Square Regression
Dependent Variable: ROE
Method: Panel Least Squares
Date: 04/01/23   Time: 17:15
Sample: 2011 2022
Periods included: 12
Cross-sections included: 4
Total panel (unbalanced) observations: 43

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CURR	0.015074	0.054703	0.275564	0.7844
QUKR	-0.026185	0.076415	-0.342670	0.7337
DBAR	-0.006624	0.011036	-0.600255	0.5519
DBER	0.089929	0.011247	7.996129	0.0000
C	-0.011354	0.153143	-0.074140	0.9413

R-squared	0.628403	Mean dependent var	0.271395
Adjusted R-squared	0.589287	S.D. dependent var	1.293365
S.E. of regression	0.828878	Akaike info criterion	2.571455
Sum squared resid	26.10744	Schwarz criterion	2.776246
Log likelihood	-50.28629	Hannan-Quinn criter.	2.646976

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| F-statistic | 16.06530 | Durbin-Watson stat | 1.597495 |
| Prob(F-statistic) | 0.000000 | | |

Source: E-View 8.0 Output

Table 4.2.3 presents the Ordinary Least Square Regression Model, which is the main statistical tool of analysis of the study. Results from the table reveal that the Adjusted Coefficient of Determination (R^2) of the model is 0.589287. This shows that 59% of the variation in return on equity (ROE) of the brewery firms in Nigeria are explained by the independent variables comprising of (Current Ratio, Quick Ratio, Debt Assets Ratio and Debt Equity Ratio) while the remaining 41% is predicted by error terms and other quantitative and qualitative variables not included in the model of the study. This result is in agreement with the F-Statistics result with coefficient of 16.06530, and p-value of 0.000000, which is less than 0.05 (0.000000<0.05). This shows that the predictive power of the independent variables is very strong. The Durbin-Watson Statistics coefficient from the model stands at 1.597495, which is closer to the huddle rate of 2. This implies that there is no auto correlation in the model of the study.

Current Ratio and Return on Equity: The table indicates that the coefficient of Current Ratio is positive, 0.015074 while the p-value is 0.7844, which is greater than 0.05 (0.7844>0.05). Based on these results, we conclude that the effect of Current Ratio on Return on Equity of Brewery firms in Nigeria is positive, but statistically non-significant. This result is consistent with Liquidity Preference Theory developed by John Maynard Keynes in 1936. Keynes (1936) argue that firms' liquidity

for three motives, the transactions-motive, the precautionary-motive and the speculative-motive. The study is also consistent with. Omar; Abdul; Syed and Nour (2016) who investigated the relationship between liquidity ratios and indicators of financial performance (profitability ratios) in the food industrial companies listed in Amman. Findings indicate that a positive relationship exist between current ratio, quick ratio, cash ratio with return on assets. Batrancea (2018) who analyzed the influence of financial performance on long-term financial equilibrium on firms publicly traded on the New York Stock Exchange. Findings show that liquidity has positive & significant effect on banks' profitability ratios. Yameen; Farhan & Tabash (2019) who appraised the impact of liquidity on firms' performance using Indian Pharmaceutical firms listed in Bombay Stock Exchange. It was ascertained that current ratio & quick ratio has a positive and significant impact on ROA, while leverage, firms' size, and age have negative impact on the ROA. Widyastuti (2019) who studied the Effect of liquidity, activity and leverage on firm performance and the value of food and beverage firms. Results show that current ratio, cash ratio, quick ratio has a positive and significant effect on NPM & ROA. The result is not in agreement with: Yusoff (2017) who examined the effect of liquidity and debt on the profitability among large firms in consumer product sector in Malaysia. It was observed that current ratio has negative but insignificant effect on profitability. Kamran (2019) who examined the impact of liquidity

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ratio on profitability of firm using Automobile Industry of Pakistan. Result show that quick ratio positively effects profitability; return on assets. However, there is a negative relationship between liquidity (current ratio and cash ratio) with return on asset.

Quick Ratio and Return on Equity: The table also reveals that the coefficient of Quick Ratio is negative, -0.026185 while the p-value is 0.7337, which is greater than 0.05 (0.7337>0.05). In line with these results we opine that the effect of Quick Ratio on Return on Equity of Brewery firms in Nigeria is negative, but statistically non-significant. This result is not in agreement with some empirical studies, especially: Mustafa; Sethar; Pitafi and Kamran (2019) who examined the impact of liquidity ratio on profitability of firm using Automobile Industry of Pakistan. It was observed that quick ratio positively effects on profitability; return on assets. Khaldun and Muda (2014) who studied the influence of profitability and liquidity ratios on the growth of profit of foods and beverage manufacturing firms in Indonesia. Results show that current ratio, quick ratio, cash ratio, gross profit margin, return on assets and return on equity have significant influence on profit growth. Omar; Abdul; Syed and Nour (2016) who investigated the relationship between liquidity ratios and indicators of financial performance (profitability ratios) in the food industrial companies listed in Amman. Findings indicate a positive relationship also exist between current ratio, quick ratio, cash ratio with return on assets. Yusoff (2017) who examined the effect of liquidity and debt on the profitability among large firms in consumer product sector in Malaysia. The results show that quick ratio has positive and significant effect on

profitability while, current ratio has negative but insignificant effect on profitability. Yameen; Farhan and Tabash (2019) who appraised the impact of liquidity on firms' performance using Indian Pharmaceutical firms listed in Bombay Stock Exchange. It was ascertained that current ratio & quick ratio has a positive and significant impact on ROA, while leverage, firms' size, and age have negative impact on the ROA.
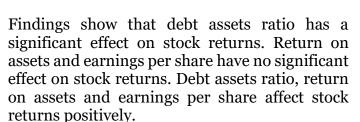
Debt Assets and Return on Equity: The regression results further reveals that the coefficient of Debt Assets Ratio is negative, -0.006624, while the p-value is 0.5519, which is greater than 0.05 (0.5519>0.05). Hence, we postulate that the effect of Debt Assets Ratio on Return on Equity of Brewery firms in Nigeria is negative, but statistically non-significant. This result is consistent with: Ayoush; Toumeh and Shabaneh (2021) who appraised the impact of liquidity, leverage, and solvency on profitability of industrial firms listed in Amman. Negative and significant impact was found between financial leverage and profitability. There was no effect of liquidity and solvency on profitability.
The result is, however, inconsistent with Nguyen and Nguyen (2020) who studied the determinants of profitability for firms listed on the Vietnamese Stock Exchange. It was observed that size and solvency have a positive effect on ROA, but negative effect of ROE. Aliwi (2019) who studied the effect of effect of financial leverage on financial performance in Jordan and found that the effect of debt equity ratio on return on assets are positively and significant. There was no impact of debt equity ratio on ROA. Putro (2021) who studied the effect of debt on asset ratios, return on assets and earnings per share on stock returns in construction and building sub-sector firm listed in Indonesia.

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Findings show that debt assets ratio has a significant effect on stock returns. Return on assets and earnings per share have no significant effect on stock returns. Debt assets ratio, return on assets and earnings per share affect stock returns positively.

Debt Equity and Return on Equity The regression model equally shows that the coefficient of Debt Equity Ratio is positive, 0.089929, while the p-value is 0.0000, which is less than 0.05 (0.0000>0.05). Thus, we assert that the effect of Debt Equity Ratio on Return on Assets of Brewery firms in Nigeria is positive, but statically non-significant. The study is in agreement with: Aliwi (2019) who studied the effect of financial leverage on financial performance in Jordan and found that the effect of debt equity ratio on return on assets are positively and significant. Al-Ali (2018) who explored the relationships among financial leverage, liquidity and profitability of firms listed on the Damascus Stock Exchange and found that equity finance had a significant and positive impact on ROA while the debt ratio had a negative and insignificant relationship on the ROA. Nasution, Putri and Dungga (2019) who studied the effect of debt equity ratio & total asset turnover on ROA of automotive firms and components. Findings show that debt equity ratio had a significant effect on ROE.

The result is inconsistent with: Ayoush; Toumeh and Shabaneh (2021) who appraised the impact of liquidity, leverage, and solvency on profitability of industrial firms listed in the Amman. Results show a negative and significant impact was found between financial leverage and profitability. Affandi; Sunarko & Yunanto (2018) who studied the impact of cash ratio, debt equity ratio, receivables turnover, net profit margin,

return on equity and institutional ownership on dividend payout ratio. Results suggest that debt equity ratio & net profit margin did not significantly effect on dividend payout ratio. Additionally, it was found that there was no impact of debt equity ratio on ROA. Nguyen and Nguyen (2020) who studied the determinants of profitability for the firms listed on the Vietnamese Stock Exchange. It was observed that size and solvency have a positive effect on ROA, but negative effect of ROE.

5. SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings
In line with the data analysis and the ensuing results, we summarize the findings of the study as stated hereunder:

Current ratio positively, but significant affect return on equity of brewery firms in Nigeria. This was observed from the positive coefficient of current ratio of 0.015074 which is significant at 0.05 level (0.015074>0.05).

Quick ratio, however, negatively, but non-significant affect return on equity of the listed brewery firms in Nigeria. This was seen from the negative coefficient of quick ratio of -0.026185 which is not significant at 0.05 level (0.7337>0.05).

i.   Debt assets ratio negatively, but non-significant affect return on equity of the listed brewery firms in Nigeria. This was ascertained from the negative coefficient of debt assets ratio of -0.006624 which is not significant at 0.05 level (0.5519>0.05).

ii. Debt equity ratio positively and significant affect return on equity of

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brewery firms in Nigeria. This was observed from the positive coefficient of debt equity ratio of 0.0899289 which is not significant at 0.05 level (0.0000<0.05).

5.2 Conclusion

The study investigated the effect of liquidity and solvency on profitability of brewery firms in quoted on Nigeria Stock Exchange during 2011 to 2022. Current ratio, Quick Ratio, Debt Assets Ratio and Debt Equity Ratio were the independent variables and surrogates for liquidity and solvency ratio while Return On Equity was the dependent variable and a measure of profitability. In other to conduct the investigation, the four (4) brewery firms quoted on Nigeria Stock Exchange during the period were targeted while time series data covering the period were collected from the brewery firms and analyzed using Ordinary Least Square Regression Analysis. Based on the findings from the sturdy, we conclude that the entire model is significant in predicting return on equity of the breweries firms. The study further concludes that the effect of Current Ratio and Debt Equity Ratio on Return on Equity is positive, but statistically non-significant while the effect of Quick Ratio and Debt Equity Ratio on Return on Equity is negative, but statistically non-significant.

5.3 Recommendations

Based on the findings and the conclusions, we suggest the following recommendations to the firm managers of brewery firms in Nigeria:

i.   The firm managers of brewery firms in Nigeria should mitigate liquidity risk by maintaining their current ratio at the industrial average of at least 2:1 at all times. This will have the effect of increasing return on equity of their firms as revealed by the findings of the study. This can be achieved by investing idle cash in government bonds, treasury bills and other near cash items that can easily be converted to cash.

ii. Also, the firm managers should maintain their quick ratio at the industrial average of at least 1:1 so as to improve their firms' returns on equity. The use of inventory management techniques such as economic order quantity, reorder level and so on can assist the managers achieve this.

iii. Furthermore, the firm managers should increase return on equity and maximize shareholder's wealth by using more of equity financing than debt to fund their assets. Equity financing as seen from the findings of the study will assist the managers mitigate the risk of adverse economic conditions and bankruptcy risk.

iv. Lastly, the firm manager of the brewery firms in Nigeria should maximize return on equity by locating their firms' optimal capital structure and fund their business operations in line with the optimal capital structure.

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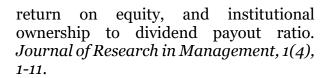
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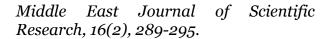
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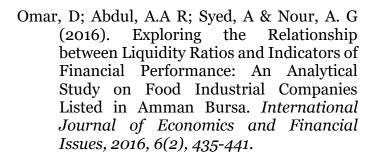
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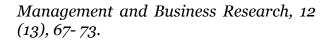
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