

Impact of Retained Earnings on the Financial Performance of Selected Nigerian Breweries in Times of Crises (2012-2020)

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Abstract

On a daily basis, investors are in the valley of decision about creating a leveraged portfolio that will meet or beat growth forecasts and profit margins in a firm over time. This study investigated the effect of retained earnings on financial performance of selected Nigerian breweries in times of crisis. The study reviewed extant literature, while shift-ability theory and anticipated income theory was adopted. The study adopted ex-post-facto research design with an interval scale of measurement and preceding year basis of sampling. The population of study was five (5) breweries quoted on the Nigerian Stock Exchange. The sample size was four (4) selected breweries in Nigeria with each having nine-year observations from 2012 to 2020. Secondary data was collected from published annual reports and accounts of the quoted breweries. The study employed OLS model, ANOVA, F-test and T-test statistics for data presentation, statistical analysis and hypothesis testing using NumXL 2020, MS Excel 2019 and SPSS 20. The study found that there is no significant relationship between retention index, and the return on assets at 0.107, no significant relationship between retention index and the return on equity at 0.142, and no significant relationship between retention index and the earnings per share at 0.776. The study concluded that the capital structure with retained earnings were not adequate to improve the return on assets, return on equity and earnings per share. The study recommended that the breweries should minimize risk of accumulated losses, in subsequent accounting periods.

Keywords: Retained Earnings, Financial Performance, Breweries, Nigeria

Introduction

As a firm experiences growth, the requirement for working or growth capital tends to also increase. Sustainability in all aspects of every business is certainly an emerging trend all business growth and existence. Over the last few decades, finance researchers have identified reliable factors such as managerial skill, tax, price-to-book ratio and size as some of the variables that affect the shareholders' return in the brewery and non-brewery sectors. Nonetheless, leveraged funds have been frequently omitted because it is unobservable and not usually pronounced which explains why these variables are frequently omitted in return model. A firm funds its operation with capital raised from various sources like internal and external structure (Ndulue, Ekechukwu & Opusunju, 2015). A mix of these sources are generally referred to as a firm capital structure (Ndulue, et al 2015). The internal source refers to the funds generated from within which are mostly retained earnings, it is the results of the firm's earnings from commercial activities. Funds sourced not from within the earnings of firm's commercial activities are called external financing (Ndulue, et al 2015). A firm's capital structure affects their financial performance, it determines the success and failure of the firm (Ndulue, et al 2015). It is necessary to note that, when a firm has a good capital structure, such firm can stand in the future against financial crises (Ndulue, et al 2015). Firms build up a good capital structure (debt and equity) so that they can generate return on investment, return on capital employed, return on asset, return on equity, net profit margin, gross profit margin and so on. Firms may also have a high mix of debt and equity but might be unable to generate retained earnings, which could lead to a financial crisis in affected quoted companies. Some of the prior related studies including: Ashutosh & Gurpreet (2018), Banerjee (2018), Evans (2018), Imhanzenobe (2019), Okosun (2019), Pibowei (2019), Yameen and Pervez (2016) were reviewed, and found to have gaps in literature. Likewise, this

study did not focus on profits of the firm, as a measure of financial performance, but rather focused on growth of the firms, which are studied in terms of two factors such as firm turnover and market share. This is because two quoted breweries in Nigeria, specifically International Breweries, recorded 2-year accumulated losses, but still declared and paid dividends to shareholders; while Champion Breweries, recorded 12-year accumulated losses, and could neither declare nor pay dividends to shareholders. The implication is that if the balance in the Accumulated loss account is not cleared-out, future profits would only be used to progressively reduce the loss. The company will be unable to declare dividend or issue bonus shares until the balance in the accumulated loss account is cleared. In the event of a net loss, the loss is carried over into retained earnings as a negative number and is deducted from any balance in retained earnings from prior periods (Clark, 2020). As a result, a negative stockholders' equity could mean a company has incurred losses for multiple periods, so much so, that the existing retained earnings, and any funds received from issuing stock were exceeded (Clark, 2020). Accumulated deficit, or retained loss, crops up on the balance sheet when the company's debts are more than its profits. If the company is newly open, or taking on debt to expand, it may be taking a retained loss now for higher profits later (Sherman, 2019). However, accumulated losses over several years could result in a negative shareholder equity, which is a red flag for stock investors. To the best of our knowledge, none of these prior related studies investigated the significant relationship between retained earnings and financial performance, of quoted breweries in Nigeria. To this end, the content scope included the independent variable known as capital structure proxied by retained earnings; as well as the dependent variable known as financial performance proxied by return on assets, return on equity and earnings per share. The geographical scope is the selected breweries quoted on the Exchange. The measurement scope is an interval scale covering a time period of nine (9) years from 2012 to 2020, because of its ex-post-facto research design, and time series data. The unit of analysis is organizational because data was obtained from the annual reports of quoted breweries, which have been verified by External or Independent Auditors.

Thesis Statement

Two quoted breweries in Nigeria, specifically International Breweries, recorded 2-year accumulated losses, but still declared and paid dividends to shareholders; while Champion Breweries, recorded 12-year accumulated losses, and could neither declare nor pay dividends to shareholders. Accumulated deficit, or retained loss, crops up on the balance sheet when the company's debts are more than its profits. If the company is newly open, or taking on debt to expand, it may be taking a retained loss now for higher profits later (Sherman, 2019). However, accumulated losses over several years could result in a negative shareholder equity, which is a red flag for stock investors. It is apparent that if the balance in the Accumulated loss account is not cleared-out, future profits would only be used to progressively reduce the loss. Likewise, the company will be unable to declare dividend or issue bonus shares until the balance in the accumulated loss account is cleared. In 2016, the Company expressed that its concerns on the inability to pay-out dividend till date has put more pressure on the Board and Management to implement strategies to boost our revenue and profits in order to reduce the Company's accumulated losses (Champions Breweries, 2016). With the drive to re-capitalize the Company as well as pay-off her debts, the shareholders approved an increase in the Company's authorized share capital to N4.5 Billion in 2014 (Champions Breweries, 2017). This provided the opportunity to embark on a Rights Issue for all shareholders and commence the process of a Private Placement for some identified shareholders, including The Raysun Nigeria Limited and Akwa Ibom Investment Corporation in 2014 (Champions Breweries, 2017). The successful conclusion of the Rights Issue led to the Company raising the sum of Thirteen Billion, Seven Hundred Million Naira (N13,700,000,000.00) to pay her pending debts (Champions Breweries, 2017). The Company is also taking steps in undergoing a capital reduction for the purpose of settling her accumulated debt of over 8 billion Naira (Champions Breweries, 2017). The current balance of N8,574,679,000 in the company's Accumulated loss Account as at 31st December 2017 has two implications for the company (Champions Breweries, 2017). First, investors and stakeholders will be worried about the ability of the company to invest residual profits into capital expenditures that will yield long-term profitability, since it is apparent that if the balance in the Accumulated loss account is not cleared-out, future profits would only be used to

progressively reduce the loss. Second the company will be unable to declare dividend or issue Bonus shares until the balance in the Accumulated loss account is cleared. Naturally, there are no retained earnings, in the presence of accumulated losses, and these losses are adjusted due to adoption of IFRS 9 (Financial Instruments) which replaced IAS 39 (Financial Instruments: Recognition and Measurement), so the Company applied IFRS 9 initially on 1 January 2018. The total estimated adjustment to the at 1 January 2018 was N37,924,000 which is an increase in accumulated loss due to the impairment losses on trade receivables, and the adjusted opening balance of accumulated losses was #8,612,603,000 as at 1 January 2018 (Champions Breweries, 2019). However there was no increase in accumulated loss due to the impairment losses on trade receivables, and the opening balance of accumulated losses was #199,928,000 as at 1 January 2019 (Champions Breweries, 2020). From a profitability projection standpoint, it is envisaged that it could take duration of about 10 years for the company to clean up the balance in its accumulated loss account, if it is to rely on ploughed-back profit. It is therefore necessary to consider other legal alternatives in reducing the balance in the accumulated loss account. The company sought to transfer its accumulated losses to Capital Reduction Account and subsequently them write-off losses equivalent to this reduction of the Share Premium Account in the year 2018. In line with the Company's steps to increase the stock's value and eventually leading to the payout of dividends, the capital re-structuring exercise was concluded within the year under review, following the special resolution approved by the shareholders on 26 July 2018. Under the scheme, the balance of N8,574,679,000 in the Company's Accumulated Loss Account as at December 31, 2017 was transferred to the Company's Share Premium Account, thereby reducing it by same amount. The necessary approvals have been obtained including court approval on 23 October 2018, Corporate Affairs Commission (CAC) approval on 6 December 2018, and a letter of no objection from the Financial Reporting Council of Nigeria (FRCN) on 19 December 2018, likewise, the Securities and Exchange Commission (SEC) has been duly notified. Upon approval, the Company reduced its accumulated loss and share premium account by N8,574,679,000. Dividends were not declared nor distributed to shareholders, due to accumulated losses from 2012 to 2020, however, the management of the Company asserts that its capital re-structuring exercise has paved its path to achieving profitability within a short while. Therefore this study investigates whether accumulated losses or retained earnings will significantly affect the financial performance of selected quoted breweries in Nigeria.

Aims and Objectives

The aim of the study is to investigate the significant effect of retained earnings on the financial performance of selected quoted Nigerian breweries in times of crisis. The objectives are to:

- a) Determine the effect of retention index on the return on asset of breweries in Nigeria.
- b) Determine the effect of retention index on the return on equity of breweries in Nigeria.
- c) Determine the effect of retention index on the earnings per share of breweries in Nigeria.

Conceptual Review

One primary and internal source of working capital of a quoted brewery is the Retained Earnings. The management of short-term assets and short-term liabilities available to a company for financing the daily operations of the business is gaining incremental interest (Karankye & Adarquah, 2013). Oxford dictionary of economics define retained earnings as part of a company profits which is not paid out in taxes, or dividends but is ploughed back into a business (John, Nigar and Garrett, 2013). Oxford dictionary of finance and banking, also defined as retained earnings as the net profit available for distribution less, any distribution made, that is, the amount kept within the company (Jonathan, Alan, John, Nicolas, & Brian, 2008). When your company earns a profit, you can do two things with the money: pay your shareholders a dividend or retain the earnings. Each year, quarter, or month – you add your profits for the period to the retained earnings account, or subtract your losses and dividends (Sherman, 2019). It may be used to finance fixed investment, to finance takeovers of other firms, to extend credit to customers, to pay off loans, or to increase liquid assets (John et al, 2013). Retention of

earnings is also an alternative to external borrowing, or raising equity capital through issue of shares for financing new investment (John, et al, 2013). Retained earnings is recorded in the profit and loss reserve (Jonathan, et al, 2008). Within the shareholders' equity section of the balance sheet, retained earnings are the balance left over from profits, or net income that is set aside to be used to pay dividends, reduce debt, or reinvest in the company (Clark, 2020). Retained earnings forms a major part of working capital, and liquid resources, an absence of which would lead to accumulated losses, which could negatively affect profit for the year after income tax deductions, and returns attributable to shareholders for distribution. In the event of a net loss, the loss is carried over into retained earnings as a negative number and is deducted from any balance in retained earnings from prior periods (Clark, 2020). As a result, a negative stockholders' equity could mean a company has incurred losses for multiple periods, so much so, that the existing retained earnings, and any funds received from issuing stock were exceeded (Clark, 2020). Accumulated deficit, or retained loss, crops up on the balance sheet when the company's debts are more than its profits. If the company is newly open, or taking on debt to expand, it may be taking a retained loss now for higher profits later (Sherman, 2019). However, accumulated losses over several years could result in a negative shareholder equity, which is a red flag for stock investors. It is apparent that if the balance in the Accumulated loss account is not cleared-out, future profits would only be used to progressively reduce the loss. Likewise, the company will be unable to declare dividend or issue bonus shares until the balance in the accumulated loss account is cleared.

$$\text{Positive Retention Index} = \frac{\text{Retained Earnings}}{\text{Total Equity}} : 1 \quad \dots \text{formula 1.1.1}$$

$$\text{Negative Retention Index} = \frac{\text{Accumulated Losses}}{\text{Total Equity}} : 1 \quad \dots \text{formula 1.1.2}$$

Firm build up a good capital structure (debt and equity) so it can generate return on investment, return on capital employed, return on asset, return on equity, net profit margin, gross profit margin and so on. Firms may have a high mix of debt and equity because they are unable to generate retained earnings. People are however motivated to invest in a given asset by its expected returns, and that return is the level of profit from the investment, or the reward for investing (Lawrence, Michael and Scott 2011). Investors patronize companies whose policy is either to pursue leveraged growth, and moderate profits. This return or profit on investment can be attributable to shareholders in the form of dividends, and to management in the form of profit, depending on the prevailing situation. This study adopted return on assets, return on equity and earnings per share, as measures of financial performance of quoted breweries. Deloitte (2019) defines an asset as, “a present economic resource controlled by the entity as a result of past events”. A company’s ability to create return for its shareholders (as measured by its return on equity) depends on its ability to generate revenues from assets, known as asset turnover (CFA Institute, 2019). It relates the revenue generated for the period to the company’s expenditure on all its assets (Imhanzenobe, 2019). It also measures the efficiency with which a company’s assets are used to generate sales revenue (Ama, 2015). Equity is a residual interest in the assets of the entity after deducting all its liabilities (Deloitte, 2019). It is also defined as any contract that give owners an interest in the business as at the reporting date. It represents the book value of net assets or share capital (and not their market value). Oxford Dictionary of Accounting defines return on equity as “the net income of an organisation expressed as a percentage of its equity capital (Gary et al, 2005).” AMA (2015) defines return on equity as “one that concentrates on the company is ordinary shareholders and compares their capital with the amount of profit which has been earned on their behalf.”

$$\text{Return on Assets} = \frac{\text{Profit After Tax}}{\text{Total Assets at the End}} \times \frac{100}{1} \quad \dots \text{formula 2.1.3}$$

$$\text{Return on Equity} = \frac{\text{Profit After Tax}}{\text{Total Equity at the End}} \times \frac{100}{1} \quad \dots \text{formula 2.1.4}$$

Theoretical Framework

For the purpose of this study on the effect of retained earnings management on financial performance, we adopted shift-ability theory and anticipated income theory. The shift-ability theory of bank liquidity was propounded in 1918 by M.G. Moulton who published his article named ‘Commercial Banking and Capital Formation’. The theory was supported in 1923 by Mitchell W. F. and was thereafter promoted by Gayer A. D in the year 1935. The theory asserted that if the commercial banks maintain a substantial amount of assets that can be shifted on to the other banks for cash without material loss in case of necessity, then there is no need to rely on maturities. It is an approach which holds that the liquidity of a bank, depends on its ability to shift its assets to someone else without any material or capital loss when the need for liquidity arises. In other words, when a bank is short of ready money, it is able to sell or repo its assets to a more liquid bank. According to Moulton, an asset to be perfectly shift-able must be immediately transferable without capital loss when the need for liquidity arises. The theory proposed that banks, rather than relying on the liquidity of these assets in a crisis, should be able to shift these earning assets to another institution with a better cash position thereby creating the reserves needed. This ability to shift assets provides liquidity to otherwise non-liquid assets, such that there is no material loss of capital in the case of necessity, and there is no need to rely on maturity dates of debtors. The shift-ability theory will be preferred if the quoted manufacturing firms have a high equity multiplier that is greater than or equal to 2:1 industry standard, because the asset value is more than twice the amount of equity. Okosun (2019) stated that a company that has a higher level of debt in its total capital will have a higher return on equity as long as the debt returns more than it costs, that is, as long as its return on assets is greater than its after-tax cost of debt (that is, the cost of its debt after tax deductions). On the other hand, the anticipated income theory was developed in 1949 by H.V. Prochanow, who published an article named “Bank Liquidity and the New Doctrine of Anticipated Income”. The theory was introduced on the basis of the practice of extending term loans by the commercial banks in the USA. Prochanow argued that mere shift-ability of assets does not provide liquidity to the banking system, rather it entirely depends upon the economic circumstances. Likewise, in times of stress or crisis, the effectiveness of these assets for liquidity purposes, while the shares and debentures cannot be shifted on to others by the banks, because there are no buyers and all who possess them want to sell them. If all the banks simultaneously start shifting their assets, it would have disastrous effects on both the lenders and borrowers. According to Prochanow, regardless of the nature and character of a borrower’s business, the bank plans the liquidation of the term-loan from the anticipated income of the borrower. Therefore, an anticipated theory will be preferred if the quoted manufacturing firms have a low equity multiplier that is less than or equal to 1:1 industry standard, because the assets are predominantly financed by equity. This theory is superior to the shift-ability theory because it fulfils the three objectives of liquidity, safety and profitability. Liquidity is assured to the bank when the borrower saves and repays the loan regularly in instalments. This also satisfies the safety principle because the lenders or creditors grant a loan not only based on good security or collateral but also on the ability of the borrower to repay the loan. The lenders can utilize its excess reserves in granting term-loan with a better assurance of a regular income. Lastly, the term-loan is highly beneficial for the business community, which gets funds for medium or longer terms. Based on this adopted theory, financial performance indicators are a function of revenue generated from company assets (return on asset), revenue generated from equity securities (return on equity), and revenue generated from each ordinary shares issued (earnings per share).

Review of Prior Studies

Some of the prior related studies were reviewed, and found to have gaps in literature. Ashutosh & Gurpreet (2018) found that fixed assets net worth ratio and total asset turnover ratio has a positive effect on the profitability of cooperative sugar mills except for the. Banerjee (2018) found that operational efficiency and asset management had a positive significant relationship with financial performance (measured by Return on Assets) and sustainability (measured by Tobin’s Q). Evans (2018) found that a lack of correlation between

operating efficiency (proxied by asset turnover and other efficiency variables) and financial performance (measured by profit after tax). Imhanzenobe (2019) found that asset turnover had a positive significant relationship with return on assets; while inventory turnover and asset turnover had a positive significant relationship with Tobin's Q. Okosun (2019) found that there is no significant relationship between debt to assets ratio and return on assets, return on equity and earnings per share; and that there is no significant relationship between equity multiplier ratio, and return on assets, return on equity and earnings per share of First Bank Holdings. Pibowei (2019) found that there is no significant relationship between equity multiplier and ROA at 0.062 P-Value; and no significant relationship between equity multiplier and ROE at 0.218 P-Value. Yameen and Pervez (2016) found that asset turnover, inventory turnover and account receivables turnover had a positive significant relationship with profitability measured by return on assets; and that asset turnover, inventory turnover and account receivables turnover had no positive significant relationship with profitability measured by return on equity and return on capital employed. Imhanzenobe (2019) revealed that employees' growth, account receivable turnover and inventory turnover were found to be insignificant with ROA. Dioha, Mohammed and Okpanachi (2018) found amongst others, that firm size, sales growth and leverage have significant effects on profitability. Ibrahim and Akinlo (2017) found that transitively, profit has positive effect on growth while growth has positive effect on company size. Isik (2017) found that growth opportunities measured by the ratio of capital expenditure to sales have no statistically significant impact on the profitability of real sector firms. Sorin (2016) found that that leveraging has a positive effect on sales and employee growth, while older firms saw a faster increase in assets and sales. Kazeem (2015) found that age of insurance company and insurance premium growth are not significantly related with financial performance. Mihaela, Michaela, Corneliu and Gabriel (2015) found that the size of the firm and the growth opportunities can also have a negative impact on the leverage, but to a lower extent. Aremu, Ekpo, and Mustapha, (2013) found that only broad money supply growth rate was significant both in the long run and in the short run. Bilal, Khan, Tufail and Sehar (2013) found that leverage, size, earnings volatility and age of the firm, are significant determinants of profitability while growth opportunities and liquidity are not significant determinants of profitability. Pouraghajan and Bagheri (2012) found that there are significant negative relationships between debt ratio and financial performance of companies, and a significant positive relationship between firm size, asset turnover, asset tangibility ratio, and growth opportunities with financial performance measures. Zhao and Wijewardana (2012) found that there is a positive rather than a negative relationship between financial leverage and other growth variables as implied by the negative signals about the future growth of the company. Amarjit and Neil (2011) found that financial leverage of Canadian firms are influenced by the firm size, growth cases, number of subsidiaries, and other factors.

Methodology

The study adopted ex-post-facto research design with interval scale of measurement and preceding year basis of sampling. The area of the study was all manufacturing firms in Nigeria, quoted under the brewers/distillers section, and classified under the beverages and consumer goods group of companies (Nigerian Stock Exchange, 2020). The target population was five (5) quoted breweries such as Nigerian Breweries Plc, Guinness Nigerian Plc, Champion Breweries Plc, International Breweries Plc, and Golden Guinea Breweries Plc. The sample size was four (4) selected breweries, including Nigerian Breweries Plc, Guinness Nigerian Plc, International Breweries Plc and Champion Breweries Plc, with each having nine-year observations from 2012 to 2020. The Golden Guinea Breweries Plc was excluded from the sample scale, though it would have been a very perfect mix for the sample scale, due to its growth problems. However, its management had not published audited financial statements for a minimum term of five years, and a maximum period of ten years. The source of data was secondary, including data on retained earnings and financial performance, obtained from published annual reports and accounts of the four (4) selected quoted breweries in Nigeria. The study adopted univariate analysis, bivariate analysis, and ordinary least square (OLS) model, for data analysis with the aid of MS Excel 2019 and SPSS Statistics 20. Univariate analysis methods were range, minimum, maximum, mean, standard deviation,

variance, skewness and kurtosis. Bivariate analysis methods used were linear regression, ANOVA, F-test statistics and T-test statistic.

An ordinary least square (OLS) technique was used to estimate the regression model. The OLS function is expressed as $y = f(x)$, such that $y = (y_1, y_2, y_3)$, and $x = (x_1, x_2)$. The functional relationship that exists between retained earnings and financial performance, is expressed in the 1st equation. Three (3) sub-variables are expressed as measures of financial performance in the 2nd equation, such as, 1) return on assets (ratio of profit after tax and total assets at year end), 2) return on equity (ratio of profit after tax and total equity at year end), 3) earnings per share. ONE (1) sub-variables are expressed as a measure of retained earnings in the 3rd equation, such as retention index (ratio of retained earnings and total equity at year end). The functional relationship, is hereby converted into a mathematical function, that will form the basis for regression modelling and hypothesis testing. The 4th equation shows that return on assets, return on equity, and earnings per share are a function of retained earnings (measured by retention index).

$$\text{Grow} = f(\text{Fund}) \quad \text{eq. (1)}$$

$$\text{Grow} = (\text{Asset, Equity, Epers}) \quad \text{eq. (2)}$$

$$\text{Fund} = (\text{Earns}) \quad \text{eq. (3)}$$

$$(\text{Asset, Equity, Epers}) = f(\text{Earns}) \quad \text{eq. (4)}$$

The OLS regression model of the study will be expressed as follows,

$$\text{Asset} = \alpha_0 + \beta_1 \text{EARNs} + \varepsilon \quad \text{eq. (5)}$$

$$\text{Equity} = \alpha_0 + \beta_1 \text{EARNs} + \varepsilon \quad \text{eq. (6)}$$

$$\text{Epers} = \alpha_0 + \beta_1 \text{EARNs} + \varepsilon \quad \text{eq. (7)}$$

Where, $X = \text{FUND}$ – retained earnings, $Y = \text{GROW}$ – financial performance, $x_1 = \text{EARNs}$ – retention index, $y_1 = \text{ASSET}$ – return on assets, $y_2 = \text{EQUITY}$ – return on equity, $y_3 = \text{EPERS}$ – earnings per share, α_0 – slope or constant of the model, β_1 , β_2 , and β_3 are the regression co-efficient of the model, and ε – residual or error term of the model.

Presentation of Data

The CBN data used for analysis, was presented in Appendix 1 for dimensions of the independent variable (retained earnings management) and in Appendix 2 for proxies of the dependent variable (financial performance). The proxies were retained earnings (retention index) while the dimensions were return on assets, return on equity and earnings per share. Data presented in Table 1 formed the basis upon which all hypotheses were tested.

Table 1: Presentation of Data (Source: Computed from the Annual Reports of Nigerian Breweries Plc, Guinness Nigerian Plc, International Breweries Plc and Champion Breweries Plc, 2012-2020)

Name of Firm	Retained Earnings #’000	Total Equity #’000	Retention Index	Return on Asset	Return on Equity	Earnings per Share
Nigerian Breweries Plc	84,946,036	93,447,892	0.9090	0.1499	0.4071	5.03
	103,959,751	112,359,185	0.9252	0.1704	0.3834	5.70
	102,726,500	171,882,830	0.5976	0.1216	0.2474	5.62
	102,953,109	172,233,465	0.5964	0.1067	0.2209	4.82
	96,319,782	165,805,542	0.5809	0.0772	0.1713	3.58
	99,633,677	178,150,934	0.5593	0.0862	0.1853	4.13
	88,124,843	166,644,184	0.5288	0.0499	0.1164	2.43

	89,294,198	167,564,562	0.5541	0.0421	0.0961	2.01
	83,167,564	161,150,877	0.5161	0.0169	0.0467	0.94
Guinness Nigerian Plc	36,265,956	38,611,514	0.9393	0.1341	0.3681	9.64
	36,306,239	46,039,111	0.7886	0.0979	0.2577	7.93
	35,328,845	45,061,717	0.7840	0.0723	0.2124	6.38
	38,608,504	48,341,376	0.7987	0.0638	0.1612	5.18
	31,946,315	41,660,605	0.7668	0.0147	0.0484	(1.34)
	33,228,725	42,943,015	0.7738	0.0131	0.0447	1.28
	39,045,954	87,588,174	0.4458	0.0438	0.0767	3.30
	40,518,242	89,060,462	0.4549	0.0342	0.0615	2.50
	24,495,920	73,038,140	0.3354	0.0873	0.1722	5.74
International Breweries Plc	817,449	9,380,173	0.0871	0.1010	0.2481	0.71
	2,107,317	11,269,923	0.1870	0.0864	0.1868	0.64
	2,999,647	12,168,259	0.2465	0.0645	0.1599	0.59
	4,828,779	13,997,391	0.3450	0.0792	0.1895	0.81
	4,048,189	13,216,801	0.3063	0.0237	0.0783	0.81
	28,763,160	39,225,363	0.7333	0.0060	0.0356	0.47
	24,896,862	35,160,923	0.7081	0.0125	0.1099	(0.46)
	(2,940,476)	7,463,700	0.3940	0.0761	3.7234	3.23
	(15,305,558)	151,733,857	0.1009	0.0332	0.0814	0.40
Champion Breweries Plc	(7,710,796)	(3,430,000)	2.2478	0.1966	0.3897	1.49
	(8,889,182)	(4,608,386)	1.9289	0.1289	0.2556	1.31
	(9,683,127)	5,870,431	1.6495	0.0786	0.1285	0.24
	(9,588,502)	7,121,637	1.3464	0.0075	0.0108	0.01
	(9,039,279)	7,670,860	1.1784	0.0532	0.0691	0.07
	(8,574,679)	8,135,460	1.0540	0.0513	0.0636	0.07
	(199,928)	7,935,532	0.0252	0.0251	0.0332	0.03
	(103664)	8,031,796	0.0129	0.0153	0.0209	0.02
	(92,466)	8,042,994	0.0115	0.0139	0.0197	0.02

Statistical Analysis

Table 2: Descriptive Statistics

	N	Mean	Standard Deviation	Variance	Skewness		Kurtosis	
					Statistics	Std. Error	Statistics	Std. Error
EARN\$	36	.678300	.5106414	.261	1.274	.393	2.042	.768
SHARE	36	3.790517	7.8571953	61.736	5.731	.393	33.660	.768
DEBTS	36	.599683	.2833557	.080	1.731	.393	4.429	.768
ASSET	36	.067642	.0485887	.002	.784	.393	.177	.768
EQUITY	36	.252264	.6054376	.367	5.684	.393	33.380	.768
EPERS	36	2.420278	2.5906497	6.711	1.049	.393	.297	.768
Valid (listwise)	N36							

Source: IBM SPSS Statistics 23 Output for Test of Normality.

Table 3: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.510a	.260	.191	.0437011	.891
2	.969a	.940	.934	.1555830	1.028
3	.086a	.007	-.086	2.6993161	.729

a. Predictors: (Constant), Retained earnings

b. Dependent Variable: 1) Return on Assets, 2) Return on equity, 3) Earnings per share

Source: IBM SPSS Statistics 23 Output for Test of Autocorrelation.

Table 4: ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.022	3	.007	3.756	.020b
	Residual	.061	32	.002		
	Total	.083	35			
2	Regression	12.055	3	4.018	166.003	.000b
	Residual	.775	32	.024		
	Total	12.829	35			
3	Regression	1.739	3	.580	.080	.971b
	Residual	233.162	32	7.286		
	Total	234.901	35			

a. Dependent Variable: 1) Return on Assets, 2) Return on equity, 3) Earnings per share

b. Predictors: (Constant), Retained earnings

Source: IBM SPSS Statistics 23 Output for the Test of Significance.

Table 5: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tol.	VIF	
1 (Constant)	.020	.017		1.158	.255	-.015	.056			
	EARNs	.029	.018	.307	1.659	.107	-.007	.065	.677	1.477
	SHARE	.000	.001	-.064	-.383	.704	-.002	.002	.835	1.198
	DEBTS	.049	.033	.284	1.478	.149	-.018	.116	.626	1.598
2 (Constant)	-.077	.062		-1.238	.225	-.203	.049			
	EARNs	.094	.063	.079	1.505	.142	-.033	.222	.677	1.477
	SHARE	.075	.004	.979	20.596	.000	.068	.083	.835	1.198
	DEBTS	-.035	.117	-.016	-.299	.767	-.274	.204	.626	1.598
3 (Constant)	2.034	1.074		1.894	.067	2.034	1.074			
	EARNs	.311	1.086	.061	.287	.776	.311	1.086	.061	.287
	SHARE	.014	.064	.041	.213	.833	.014	.064	.041	.213
	DEBTS	.206	2.036	.023	.101	.920	.206	2.036	.023	.101

a. Dependent Variable: 1) Return on Assets, 2) Return on equity, 3) Earnings per share

Source: IBM SPSS Statistics 23 Output for Test of Multicollinearity.

Tests of Hypotheses

In Model 1, R coefficient of .510 shows a 51.0% correlation between retention index and return on assets. In Model 1, R-square of .260 shows that retention index, has a 26.0% impact on the return on assets. In Model 1, DW is .891, falling between $0 < D \leq 1$, which implies that there is no autocorrelation in the OLS regression, and the error terms of the regression estimates are related. In Model 1, the F-stat of 3.756 is significant at P-value (.020), which shows that retention index has a significant impact on the return on assets. In Model 1, the T-test of retention index are not significant at EARNNS (0.107) for return on assets. Likewise, in Model 1, VIF of EARNNS at 1.477 is less than five ($VIF < 5$), which implies that there is low collinearity or no exact multicollinearity in the regression coefficients of the return on asset model. Results of hypothesis test on HO1 show that there is no significant relationship between retention index, and return on assets of quoted breweries in Nigeria @ 0.107 P-Value.

In Model 1, R coefficient of .510 shows a 51.0% correlation between retention index and return on equity. In Model 1, R-square of .260 shows a 26.0% impact of retention index on the return on equity. In Model 1, DW is .891, falling between $0 < D \leq 1$, which implies that there is no autocorrelation in the OLS regression, and the error terms of the regression estimates are related. In Model 1, the F-stat of 3.756 is significant at P-value (.020), which shows that retention index has a significant impact on the return on equity. In Model 1, the T-test of retention index are not significant at EARNNS (0.107) for return on equity. Similarly, in Model 2, VIF of EARNNS at 1.477, is less than five ($VIF < 5$), which implies that there is a low collinearity or no exact multicollinearity in the regression coefficients of the return on equity model. Results of hypothesis test on HO2, show that there is no significant relationship between retention index, and the return on equity of quoted breweries in Nigeria @ 0.142 P-Value.

In Model 1, R coefficient of .510 shows a 51.0% correlation between retention index and the earnings per share. In Model 1, R-square of .260 shows that retention index has a 26.0% impact on earnings per share. In Model 1, DW is .891, falling between $0 < D \leq 1$, which implies that there is no autocorrelation in the OLS regression, and the error terms of the regression estimates are related. In Model 1, the F-stat of 3.756 is significant at P-value (.020), which shows that retention index have a significant impact on the earnings per share. In Model 1, the T-test of retention index are not significant at EARNNS (0.107) for earnings per share. Correspondingly, in Model 3, VIF of EARNNS at 0.287 is less than five ($VIF < 5$), which implies that there is a low collinearity or no exact multicollinearity in the regression coefficients of the earnings per share model. Results of HO3 testing, show that there is no significant relationship between retention index, and the earnings per share of quoted breweries in Nigeria @ 0.776 P-Value.

Based on the fourth (4th) decision rule adopted this study, and regression analysis shown above, the hypotheses, p-values and findings are summarized in the table below:

Table 2: Test of Hypotheses and Summary of Findings (Source: Statistical Analysis)

Research Hypotheses	P-Value	Findings
HO1 – There is no significant relationship between retention index, and the return on assets of quoted breweries in Nigeria	.107 > 0.05	Not Significant
HO2 – There is no significant relationship between retention index, and the return on equity of quoted breweries in Nigeria	.142 > 0.05	Not Significant
HO3 – There is no significant relationship between retention index, and the earnings per share of quoted breweries in Nigeria	.776 > 0.05	Not Significant

Conclusions

This paper concludes that the retained earnings, were not adequate to meet key performance indicators, proxied by return on assets of quoted breweries in Nigeria from 2012 to 2020. Likewise, it was concluded that the retained earnings were not adequate to meet their key performance indicators, proxied by return on equity of quoted breweries in Nigeria from 2012 to 2020. Similarly, it was concluded that the retained earnings, were not adequate to meet key performance indicators, proxied by earnings per share of quoted breweries in Nigeria from 2012 to 2020.

Recommendations

This paper recommends that the breweries, which recorded accumulated losses, due to debt rising above profit, should write them off legally, and pursue more equity finance, so as make their asset base profitable, make higher returns on investment, as well as start paying dividends again.

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