

THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

The Statistical Evaluation of the Performance of Financial Ratio Analysis in Nigerian Manufacturing Industry: An Empirical Study of Guinness Nigeria PLC

Alo, Ebenezer Adebisi

Lecturer, Department of Business Administration, College of Management Sciences,
Joseph Ayo Babalola University, Ikeji Arakeji, Osun State, Nigeria

Akosile, Akindele Iyiola

Assistant Lecturer, Department of Accounting, College of Management Sciences,
Joseph Ayo Babalola University, Ikeji Arakeji, Osun State, Nigeria

Ayoola, Akinjobi Olayemi

Lecturer, Department of Accounting, College of Management Sciences,
Joseph Ayo Babalola University, Ikeji Arakeji, Osun State, Nigeria

Abstract:

This study examines the applicability of financial ratios analysis as tools for evaluating the performance of manufacturing industries in Nigeria with a view to providing information about the financial position, performance and change in financial statement which are useful in making decisions. The study made use of secondary data to obtain relevant financial information. The data were extracted from annual reports, financial statements, journals and publications of Guinness Nigeria Plc, Lagos. The data collected were analyzed using different categories of ratios. The findings from the computations reveal that net working capital is a good measure of the financial position of an organization over a period of time but this is not enough to get a true and clear picture of the liquidity of the firm. Hence, the application of various categories of ratios becomes more dependable indicators of the liquidity of a company than the net working capital. The study concludes that the application of appropriate financial ratios to interpret the financial statements of the firm is very crucial and useful for decision making. The study recommends that the Financial Reporting Council of Nigeria (FRCN) should endeavor to issue high quality accounting standards and ensure compliance and practical application. It also recommends that exposure drafts be circulated to those who will apply the standard to make inputs before the final issue.

Keywords: Profitability ratios, financial ratios, liquidity ratio, risk measurement analysis

1. Introduction

Many manufacturing organizations in Nigeria have worked hard at improving the financial performances of their businesses; through the application of effective and efficient accounting and financial practices (Adesanya, 2005). This is because most users of accounting and financial statement have developed indents in the financial position of the organization in question (Adesanya, 2005). It is therefore imperative for stakeholders of every organization to familiarize themselves with the financial performance of their organizations. Managers need to improve the financial position of their organizations. It is essential for organizations to assess their financial positions in order to improve their financial performances. Control measures must be put in place to identify and correct deviations and improve financial performance (Abass, 2004). The analysis of financial data should be directed towards the requirements of the users of such information and the nature of the analysis should depend on the types of questions raised (Olowe, 1998).

Two principal users of financial ratios can be identified: They are Internal and External users. External Users are the investors (shareholders) who contribute to the issued capital of the business, usually inform of subscriptions to shares which may be ordinary or preference shares. These groups are interested in the financial position and profitability of the business to enable them ascertain how the money invested is efficiently and effectively allocated and utilized. They are also interested in determining the returns on their investments (Adesanya, 2005). Federal and State governments are equally interested in the financial statement of organizations to assess the tax liabilities and other information like statistics on employment and wages level. Creditors are interested in the ability of the organization to pay interest and repay the principal sum on due date. They are interested in long-term stability of the company in which their jobs depend on the company's to meet wages demands. Debtors who trade with the business organization are interested in the ability of the organization to grant them credit facilities. The financial analysts and advisers are another set of users of financial

statements who need them as inputs in the process of discharging their duties as analyst and investment advisers (Adesanya 2005). Competitors also make use of financial statements for comparison purpose.

The internal users include management who is interested in the financial statements which are useful in the management and control process of the business (Adeniyi, 2004). Financial statement provides a more comprehensive view of the financial position of an organization; financial analysis is performed with the information supplied in the financial statements. The financial statement is used to formulate contractual terms between the company and other organization. A variable of the financial statement like the current debt to equity ratio is important in deciding the amount of long term capital that would be required to be raised. The financial statements of other companies can also provide investment solutions to different companies. Sometimes it becomes difficult to decide the right field in which financial resources may be channeled. In such situations the financial statements of other companies provide the appropriate guideline.

The employees of an organization are interested in the long-term stability of the company in which their jobs depend; and the ability of the company to meet wages and salaries demand for their services, making collective bargaining agreements. Such statements are used for discussing matters of promotion, ranking and salary hike.

The manufacturing industry as an integral part of the Nigerian economy has gone through some transitions to what it is today. The industry has experienced a great decline and consequently, most organizations have closed down due to poor performances. In the light of this, successive governments have made great stride to improve this industry by way of reviving some of the dead organizations (Adeniyi, 2004.). The continued growth of an institution depends largely on its ability to generate adequate funds from its day to day activities. Financial performance measurement or assessment is therefore imperative in assessing the growth and progress of a business organization. This requires a proper examination of its past and current performance in order to forecast its future prospects. The application of financial performance measures to a company's performance can be linked more closely to shareholder's value and wealth. Attention can, thus, be directed to ways in which companies can create more value for shareholders. Therefore, the broad objective of this study is to statistically evaluate the performance of financial ratio analysis in manufacturing industry in Nigeria. Thus, the specific objectives are to: explore the various uses of financial ratio analysis in manufacturing industries, determine the advantages or benefits of financial ratio analysis as a tool for measuring the performance of manufacturing industries in Nigeria and investigate how past financial information can be analyzed to identify financial strengths and weaknesses as a basis for financial planning.

2. Literature Review

Financial ratios are one of the most common tools used for managerial decision-making (Adeniyi, 2004). A ratio is a comparison of one number to another-mathematically. Financial ratios involve the comparison of various figures from the financial statements in order to gain information about a company's performance (Adeniyi, 2004). In accounting, when one figure is expressed as a fraction or percentage or as a decimal to the other; such relationship is referred to as ratio. Many diverse groups of people are interested in analyzing the financial information to indicate the operating efficiency and various aspects of the firm financial position. Financial ratio helps to evaluate the performance of a company to enable investors decide whether to invest in that company (Thachappilly, 2009). Ratio analysis is the most powerful tools of the financial analysis. Thachappilly, (2009), identified two approaches to using ratios. The first is the vertical analysis approach which sets the balance sheet (now known as Statement of Financial Position) account in relation to the total assets and the income statement items in relation to net sales. Changes in these ratios mean that there are other trends which do not depend only on the growth or decrease of net sales and total assets. Second is the horizontal analysis approach which compares each Statement of Financial Position account or income statement items to a base year. It is possible to identify different growth rates and trends.

According to Adeniyi (2004), ratios can be classified according to origin, which comprises of Profit and Loss Account (now known as statement of comprehensive income) and the statement of financial position and secondly, according to users which include Profitability ratios, Liquidity ratios, Activity/efficiency ratios, Debt/leveraging ratios, Market ratios and Capital budgeting ratios

2.1. Profitability Ratio

According to James (2009), profitability ratios provide measures of profit performance that serve to evaluate the periodic financial success of a firm. The profitability ratio of income statement and balance sheet ratio analysis are used to measure a company's profit performance (James, 2009). He identified two very important measures of the firm's profitability as return on assets and return on equity. Thachappilly (2009) identified various measures of profitability ratio as:

(a). Gross Profit Margin- The gross profit margin indicates the percentage of each sale remaining after a business has paid for its goods. It measures the direct production cost of the firm.

- $$\text{Gross Profit Margin} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

(b). Operating Profit Margin- This ratio represents the pure operation profits ignoring interest and taxes. It is also commonly referred to as earnings before interest and taxes, or EBIT. An operating margin would indicate that the firm spends additional cents in sales on non-production expenses, such as sales commission paid to the firm's sales force or administrative labour expenses.

(c). Net Profit Margin- The net profit margin is the measure of a business success with respect to earning on sales. A higher margin means the organization is more profitable.

- Net Profit Margin = $\frac{\text{Net Profit}}{\text{Net Sales}} \times 100$

(d). Return on Capital Employed (ROCE)- This is a standard ratio that is used as a major measure of the performance of a business and the return generated by the total capital used in the business.

(e). Return on Equity (ROE) - This is equal to a fiscal year net income (after preferred stock dividends but before common stock dividends) divided by total equity (excluding preferred shares), expressed as a percentage.

(f). Return on Investment (ROI): A performance measure used to evaluate the efficiency of an investment or to compare the efficiency of a number of different investments. It is calculated as:

- $\text{ROI} = \frac{\text{Net Income}}{\text{Average Total Assets}} \times 100$

(g). Return on Assets (ROA): This shows how profitable a company's assets are in generating revenue.

- $\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}} \times 100$

(h). Return on Net Assets (RONA): This is a measure of financial performance of a company which takes the use of assets into account.

(i). Return on Capital (ROC): ROC is a ratio used in finance, valuation, and accounting. The ratio is estimated by dividing the after-tax operating income by the book value of invested capital. It is calculated as:

- $\text{ROC} = \frac{\text{Earnings Before Interest \& Tax (1-Tax Rate)}}{\text{Invested Capital}} \times 100$

2.2. Liquidity Ratio

James (2009) defined the liquidity of a business as the ability of the business to meet short term obligations when falling due. The analysis focuses on the statement of financial position's relationships for the current assets and current liabilities. The Liquidity Ratios are measures that indicate a firm's ability to repay short-term debt. According to Akeju (2010), the ratios commonly used to measure liquidity ratio includes:

Current Ratio: This measures the proportion of current assets to current liabilities.

- $\text{Current Ratio} = \frac{\text{Current Asset}}{\text{Current Liabilities}}$

Quick Assets/ Acid Test Ratio: This measures the immediate solvency of the business - the ability of the business to meet its immediate financial obligations when they fall due

- $\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liability}}$

3. Risk Measurement Analysis

The ratios refer to the index used to measure organization risk. There are two different types of risk: (a) The Liquidity Risk or Financial Risk which is connected with interest payment, that is, when the fixed interest is due whether or not the business has the ability or capability to meet such payment. It also relates to whether or not the profit generated by the organization is large enough to cover the interest. In measuring the risk, interest cover is used.

- $\text{Interest Cover} = \frac{\text{Net Profit} + \text{Fixed Interest Charge (in times)}}{\text{Fixed Interest Charge}}$

The higher the number of times, the less risky is the safety of that interest.

(b) The Risk of Control or the Risk of Ownership of the Business: - This is referring to a capital gearing or average. If the owner of the business is controlling or is contributing the higher proportion of the long term capital one will refer to this situation as safe or not risky in financial term. It will be referred to as that business lowly geared if otherwise the business is risky since owner can easily lose the control of the organization because the debt capital is in higher proportion to equity. Hence the creditors could gang up in future to take over the business. This type of situation will be referred to as risky or highly geared.

- $\text{Gearing Ratio} = \frac{\text{Fixed Interest Capital}}{\text{Equity}} \times 100$

If the computation above is 100, the business is risky if otherwise is safe.

3.1. Stock Market Ratios

These classes of ratios are normally computed for organizations that are quoted or listed on the stock exchange. The normal characteristic of this ratio is the issue "yield" this is related to the market price. The stock market ratio, according to Shiro, (2004) includes:

Dividend Yield - This ratio tries to express the dividend as a fraction of the market price. That is, the expectation of an investor who purchases the shares of the company from the open market as a return on its investment.

- $\text{Dividend Yield} = \frac{\text{Gross Dividend}}{\text{Market Price}} \times 100$

Earnings Yield - This measures the earning per share as a fraction of the market price.

- Earnings Yield = $\frac{\text{Earnings per Share}}{\text{Market Price}} \times 100$

Price Earnings Ratio: - It shows the number of times which earnings cover the market price. It can be regarded as the payback period. It also shows the length of period which it will take the present investor to recoup its capital invested.

This is calculated as:

- Price/Earnings Ratio = $\frac{\text{Market price per share (in times)}}{\text{Earnings per share}}$

3.2. Activity/Efficiency Ratios

Activity ratios measure the effectiveness of the firms' use of resources. These ratios include:

(i). Average Collection Period: The term Average Collection Period indicates the average time taken to collect trade debts. In other words, a reduced period of time is an indicator of increasing efficiency. It is calculated as:

$$\frac{\text{Accounts Receivable}}{\text{Annual Credit Sales}} \times 365 \text{ Days}$$

(ii). Asset Turnover: This is a financial ratio that measures the efficiency of a company's use of its assets in generating sales revenue or sales income to the company.

$$\text{Asset Turnover} = \frac{\text{Net Sales} \times 100}{\text{Total Sales}}$$

(iii). Stock Turnover Ratio: is a measure of the number of times inventory is sold or used in a time period such as a year.

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold} \times 100}{\text{Average Inventory}}$$

3.3. Debt Ratios/Leveraging Ratios

This ratio measures the firm's ability to repay long-term debt. Debt ratios measure financial leverage. It indicates the percentage of a company's assets that are provided via debt.

$$\frac{\text{Total Debt/Liability} \times 100}{\text{Total Assets}}$$

4. Theoretical Framework

4.1. Univariate Theory

This theory assumes that a single variable can be used for predictive purposes. The univariate theory which was published in the accounting review in October 1968 achieved a moderate level of predictive accuracy. Such a theory will use individual financial ratios to forecast financial failure. William Beaver study classified a company as failed when any one of the following events occurred: bankruptcy, bond default, an overdrawn bank account or nonpayment of a preferred stock dividend.

4.2. Multivariate Theory

Multivariate analysis (also known as Multiple Discriminant Analysis) attempted to overcome the potentially conflicting indications that may result from using single variable. Barnes (1986) proposes five financial ratios weighted in order to maximize the predictive power of the model. The model produces an overall discriminate score, called a Z score or Zeta model. It combines various measures of profitability or risk.

Though, the above two theories are relevant to the present study but the multivariate theory is chosen to serve as the theoretical framework. However, this does not suggest that the adoption of the multivariate theory indicates its superiority over the other theory.

5. Empirical Framework

McDonald and Morris (1985) present the first extensive empirical studies of the statistical validity of the financial ratio method. They used three models with two samples, one with a single industry the other with one randomly selected firm from each industry branch to investigate the implications of homogeneity on proportionality. Their result found that while they found support for financial ratio analysis, comparisons of proportionality of financial ratios is not supported.

Berry and Nix (1991), however cast doubt on the generality of McDonald and Morris results over time, over ratios and over industries. By comparing value and equal weighted aggregate financial ratios, McLeay and Fieldsend (1987) find evidence based on samples of French firms that "the departure from proportionality varies from ratio to ratio, from size class to size class and from sector to sector". The present study therefore evaluates statistically the performance of financial ratio analysis in manufacturing industry in Nigeria

6. Methodology

This study made use of secondary data which were extracted from annual reports, financial statements, journals, seminar papers, periodicals and other related publications of Guinness Nigeria Plc, Lagos. The secondary data collected were analyzed by carrying out

detailed financial analysis in order to identify the financial strengths and weaknesses of the company. This analysis is meant to reveal the diagnostic capability of the financial ratio analysis in the performance of manufacturing industry in Nigeria.

7. Analysis and Discussion

The secondary data collected were subjected to various statistical ratio analyses. These results were computed and analyzed using different categories of ratios. The net profit margin is clearly the measure of business organizations success with respect to earnings on sales. The computation below covers three years (2012-2014) historical performance of Guinness Nigeria Plc.

2014 2013 2012

#'000#'000#'000

Current Assets 41,416,380 34,612,598 35,764,651

Current Liabilities (26,568,215) (23,853,133) (31,141,958)

Net Working Capital 14,848,165 10,759,465 4,622,693

The information presented above shows that net working capital increases from year to year. A higher margin means the firm is more profitable. This can further be explained using the current ratio method which is a more dependable indication of liquidity than the net working capital:

7.1. Current Ratio

2014: $\frac{41416380}{26568215} = 1.08$

2013: $\frac{34612598}{23853133} = 1.45$

2012: $\frac{35764651}{31141958} = 1.15$

From the above, it can be observed that the company was in a more liquidity in 2013. In 2014, the company experienced an increase in current assets but this was not sufficient enough to give an increase net working capital due to increase in current liabilities. The ratio of 2:1 is considered acceptable by most organizations; this may depend on the type of the business. In the case of Guinness Nigeria Plc therefore, in the three years under study, the company did not attain the required standard of 2.1..

7.2. Quick Ratio

Inventory is seen as the most difficult current assets to be easily converted into liquidity. Hence, it is subtracted from the current assets in the quick ratio to give a thorough test of liquidity

2014: $\frac{41416380 - 12720984}{2656821} = 1.08$

2013: $\frac{34612598 - 12867421}{23853133} = 0.91$

2012: $\frac{35764651 - 16847735}{31141958} = 0.61$

A Quick ratio of 1.1 is usually recommended, but this depends on the organization in question. It can be observed from the analysis above that the result of the computation for the three years under study are lesser than the acceptable limit of 1.1. This is an indication of a less profitable position in the three years.

7.3. Return on Capital Employed

A standard ratio has always been used as a major measure of the performance of a business. It measures the return generated by the total capital used in the business.

2014: $\frac{13,541,242 \times 100}{40,520,733} = 33.42\%$

2013: $\frac{11,860,965 \times 100}{47,492,789} = 24.97\%$

2012: $\frac{10,691,118 \times 100}{44,973,004} = 23.77\%$

7.4. Gross Profit Margin

The gross profit margin indicates the percentage of each naira remaining after a business organization has paid for its goods.

	N'000	
2014:	$\frac{43,385,285 \times 100}{80,439,520}$	= 53.94%
2013:	$\frac{33,561,810 \times 100}{61,951,011}$	= 54.18%
2012:	$\frac{28,121,443 \times 100}{54,200,225}$	= 51.88%

The higher the gross profit margin, the better for the business. In 2014, going by the analysis above, the company achieved a 53.94% contribution margin, which means that 53.94% of every naira in sales is left to cover variable, fixed and other expenses. The gross profit margin of Guinness Nigeria Plc increased in 2013 and decreased in 2014.

7.5. Operating Profit Margin

This ratio represents the pure operations profit, ignoring interest and taxes. The higher profit margin is preferred.

	N'000	
2014:	$\frac{21,064,218 \times 100}{80,439,520}$	= 26.19%
2013:	$\frac{17,042,431 \times 100}{61,951,011}$	= 27.51%
2012:	$\frac{14,227,334 \times 100}{54,200,225}$	= 26.25%

The above analysis shows a less profitable position in 2014 than it was in 2013.

7.6. Others Relevant Ratios

	2014	2013	2012
Debtors Collection Period	61 days	39 days	37 days
Creditors Payment Period	42 days	45 days	38 days
Stock Turnover	2.9 times	2.3 times	2.5 times
Gearing Ratio	4.2%	3.1%	2.5%

The debtor's collection period from the analysis above indicates that the management of Guinness Nigeria Plc ensures that money is collected from customers and utilized first, that is, the length of period it takes the organization to collect money from customers is shorter than the length of period it takes the company to pay its suppliers as analyzed above. The stock turnover gives the number of times the average stock holding of the company is utilized in meeting the supply of its product for sales. The gearing ratio shows that a large portion of the company's capital is provided by the equity shareholders.

8. Discussion of Findings

The findings from this study indicate that net working capital is a good measure of the financial position of an organization over a period of time but this is not enough to get a true and clear picture of the liquidity of the firm. Hence, the application of various categories of ratios becomes more dependable indicators of the liquidity of a company than the net working capital.

The result of the application of current ratio to evaluate the liquidity of the firm shows that Guinness Nigeria Plc attained the set standard in the three years under study, though the current ratio dropped in 2014. The application of quick ratio as a test of liquidity shows that the results of the computation for the years 2012 and 2013 were lesser than the acceptable limit of 1.1 which means a less profitable position for the company in 2014 and 2013.

Applying the net profit margin to measure the success of Guinness Nigeria Plc with respect to earnings on sales, it was found that the management needs to investigate the reasons for the decrease in 2012 compared with the increase in 2013. The application of a profitability analysis which was used to measure the ability of the firm to make profit shows that in 2014, the company achieved about 54% contribution margin which indicates that every 54% of every naira in sales is left to cover variables, fixed and other expenses. The gross profit margin of Guinness Nigeria Plc increased in 2013 and decreased in 2015.

9. Conclusion and Recommendations

The private sector of the Nigerian economy has been identified as the engine of growth for its rapid development. The ability of this sector to attract both local and foreign investment depends on their ability to provide high quality financial information on which investment decision can be based. The application of appropriate accounting standards in the preparation and presentation of the financial statements and auditing standards in reporting and computing financial ratios to interpret the financial statements is very crucial and useful for decision making.

Based on the foregoing, it is recommended that the Financial Reporting Council of Nigeria (FRCN) endeavors to issue high quality accounting standards which should be in compliance with relevant international accounting standard and international financial reporting standard. To ensure high quality standards and practicability of the same, exposure drafts should be circulated to those who will really apply the standard to make inputs before the final issue. It is also recommended that FRCN ensures that the computations of financial ratios are made compulsory and enforced on every manufacturing company in Nigeria to publish it with their financial statements annually.

10. References

- i. Abass A. (2004). Financial Management. Lagos: EL-Toda Publishing Ventures
- ii. Adeniyi A. A. (2004) "An Insight into Management Accounting; Lagos: Value Analysis Consult.
- iii. Adesanya A. A. (2005). Financial Accounting, Lagos: JBA Associate Venture.
- iv. Akeju, J. B. (2005). Financial Accounting. Vol. One, Lagos: JBA Associate Limited
- v. Annual Report and Accounts (2012 – 2014). Guinness Nigeria Plc.
- vi. Barnes, P. (1986). "The Statistical Validity of the ratio Method in Financial Analysis: An Empirical Examination". Journal of Business Finance and Accounting.
- vii. Berry, R.H. and Nix, S. (1991). "Regression Analysis versus Ratios in the Cores- Section Analysis of Financial Statement". Accounting and Business Research.
- viii. Fiedsend, S. and McLeay, S. (1987). "Industry Effects and Proportionality Assumptions in Ratio Analysis." Journal of Business Finance and Accounting.
- ix. James, C. (2009). "Financial Statement Analysis in Accounting: Liquidity Ratio Analysis, Balance Sheet Assets and Liabilities". Journal of Financial Statement.
- x. Mc Donald, B. and Morris, M.H. (1985). "The Functional Specification of Financial Ratios: An Empirical Examination. Accounting and Business Research, Vol. 15, pg. 223- 228.
- xi. Olowe, R. A. (1998). "Financial Management Concepts, Analysis and Capital Investment". Lagos: Briery Jones Nigeria Limited.
- xii. Shiro A. (2004) Financial Management, Lagos: EL-Toda Publishing Venture Statement of Accounting Standard.
- xiii. Thachappilly, G. (2009). "Profitability Ratios, Measure Margins and Returns: Profit ratios work with Gross, Operating, Pre tax and Net Profits." Journal of Profitability Ratios, Measure and Return.
- xiv. www.financialratio.com
- xv. www.netmba.com/finance/financial/ratios
- xvi. www.wikipedia.com/financial/statements