



Accounting Ratios as Means for Measuring a Firm's Financial Performance

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Accepted: August 24th, 2022

Published: August 31st, 2022

Citations - APA

Egiyi, M. A., Okafor, V. I. (2022). Accounting Ratios as Means for Measuring a Firm's Financial Performance. Global Journal of Auditing and Finance, 4(3), 18-25. DOI: <https://doi.org/10.5281/zenodo.7192763>

The purpose of this research work is to examine accounting ratios as a means of measuring a firm's financial performance. The ex-post facto research was used to analyze the Data from Manufacturing companies listed on the Nigerian Stock Exchange (NSE) between 2012 and 2021 that were selected for this study. The study's sample included thirteen (13) manufacturing firms that are publicly traded on the Nigerian Stock Exchange (NSE). Secondary Data were used in the study. Panel Data Regression was employed to conduct the study, which made use of Evie 10.0 as its statistical tool. The outcome demonstrates that accounting ratios have a favorable impact on financial success. Another significant finding is that, at the 5% level of significance, the market ratio is not statistically significant to financial performance. The study suggests that management and policyholders acknowledge and effectively use accounting ratios as the most significant performance evaluation indicators and also pay attention to other potential elements that may contribute to performance evaluation through ratio analysis.

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ABSTRACT

Keywords: Accounting Ratio; Firm's Financial Performance; Manufacturing Companies

Introduction

Finance is the provision of money at the appropriate time in our current economic system. Every business, no matter how little or large requires money to keep moving toward its goals. In reality, finance is now so essential. It is true to say that it is an organization's lifeblood. No business can achieve its goals without sufficient funding. People look at the financial statement to know the company's performance to determine whether it is financially good or not (Rashid, 2020). Financial statement analysis is the process of applying analytical methods and tools to general-purpose financial statements and associated information to create projections and factors that can be used in business analysis. It lessens the need for intuition, guesswork, and hunches when making business decisions. Ratio analysis is one of the methods used by management and external stakeholders for financial statement analysis. Ratio analysis is an accounting tool used in presenting accounting variables in a simple, concise, intelligible, and understandable form. Ratio analysis is a study of the relationship among various financial factors in a business (Babalola, 2013). According to Martikainen (2013), financial ratios are numerical values created from two or more values taken from a company's financial statements i.e., its balance sheet, income statement, or statement of cash flow. Financial ratios are typically provided as a quantitative metric in the form of a percentage, multiple, or ratio to assess a company's financial operational performance and competitiveness. Financial ratios are tools used to analyze financial conditions and performance (Sadiq, 2015).

Financial ratios are used to track corporate performance, compare results to those of competitors and make key business choices. Performance indicates how the management of an enterprise has been accomplishing the goals, they had set for the enterprise (Bernstein, 2004). Financial performance indicators, especially financial ratio analysis, have become important financial decision support information used by company management and other stakeholders to evaluate financial stability and growth potential (Chnar, 2021). In recent years, the relationship between company value and the financial ratio has been highly valued. Ratio analysis is used to compare one number with another, the ratio generated will indicate whether there are weaknesses or strengths in the given area. For example, ratio analysis can be used to check a firm's liquidity. Liquidity ratios measure a firm's ability to pay its bills as they come due. Umobong (2015) stated that liquidity ratios are broadly classified into current ratio, liquid ratio, net, and working capital ratio, it is used to ascertain how liquid a firm is and its potential to meet maturing short-term obligations. The ratio can be calculated through the source of information about working capital consisting of current assets and current liabilities. The quick ratio on the other hand indicates the ability of the most liquid current assets to cover the current liabilities. The cash ratio is used to indicate the company's ability to pay liabilities that are due with the available cash in the company (Appah, 2017). Ratio analysis can also be used to measure how well a company performed in the area of its profitability. This can be classified into Returns on Capital Employed (ROCE), Return on Assets (ROA), Return on Equity, etc. These ratios are used by investors in combination with investment ratios to make investment decisions. The term "profitability" refers to a company's capacity to generate profits using all of its available resources, including sales activities, cash flow, capital, the number of employees and branches, and other factors. The business needs to make money to survive. Gross profit margin shows the amount of net income generated from a specific sale as a percentage. While the return on equity shows the company's ability to deliver return on investment to shareholders so it shows what percentage obtained net profits when measured from capital owned. A company is said to have performed well when it has a high ability to generate a satisfactory return on invested capital through which shareholders are happy and prospective investors are motivated to invest (Salman, 2017).

Throughout the last decades, numerous financial and accounting models were created. But the financial ratios nonetheless maintained their traditional and essential strength, either as a component of these financial and accounting models or as a further crucial supporting analysis alongside them. Accounting ratios, their analysis, and their interpretation are topics on which many companies, organizations, and corporations are knowledgeable. Some businesses use these ratios but apply them incorrectly, while others employ the correct procedures but interpret them incorrectly, and the majority of enterprises do not use them at all. However, this study aims to assess the significance of accounting ratios for gauging corporate financial success.

Theoretical Framework

Stakeholders Theory

This study is anchored on the Stakeholders Theory. Stakeholder Theory was propounded by Edwards R Freeman in 1983. It argues that there are other parties involved in a business organization which includes employees, customers, suppliers, financiers, communities, governmental bodies, political groups, trade associations, and trade unions. And their interest must also be satisfied. It posits that companies should align the interest of the shareholders and assess the performance of the firms using financial ratios. Moreover, the effect of financial ratio on firm performance will directly affect the decisions made by the stakeholders of the company, and will also give them an insight into the financial performance and position of the firm (Agbata, 2021).

Empirical Review

Agbata (2021) researched the effect of financial ratios on the firm performance of quoted breweries firms in Nigeria. Data for the study was gotten from secondary sources obtained from the NSE fact books and annual reports/accounts of the selected Breweries Companies. It made use of ex-post facto research design. Out of the thirteen (13) quoted Breweries firms gathered as the population of the study, four (4) were selected to form the sample of the study for the period of nine (9) years (2010-2018). Pearson correlation coefficient and regression analysis were used to analyze the statistical Data obtained. The findings of this study were that Nigerian brewery companies are relatively using an optimal mix of debt and equity which is evident from the significant positive relationship of the debt-to-equity ratio with the financial performance of the Nigerian Breweries.

Ayodele (2015) researched ratio analysis as a corporate performance measuring tool. It examined the importance of ratio analysis to corporate entities by showing its contributions to the performance of the companies. Data were obtained from secondary sources; they were extracted from Zenith bank Plc within the range of twelve (12) years (2000-2011). The ratios examined in this study were, total debt ratio, return on equity ratio, cash ratio, earnings per share ratio, and dividend per share ratio. Simple percentage increments were also estimated on each of the indices mentioned in a tabulated form. The findings show that the use of ratio analysis by the firm has assisted it in making meaningful comparisons and taking appropriate decisions for improvement. Therefore, it can be said that ratio analysis has served as a veritable tool for measuring the company's performance.

Akhor (2015) researched performance evaluation through ratio analysis of selected quoted firms for the periods 2009 and 2013. A simple ordinary least square regression technique, descriptive statistics, and Pearson correlation matrix was employed in this study. The empirical findings using the simple regression techniques revealed that liquidity ratio has a negative and significant impact on firm performance. Leverage and market ratio have a negative and positive insignificant impact on firm performance. The profitability ratio has a significant positive impact on firm performance evaluation as well.

Appah (2021) carried out an empirical study on liquidity and profitability ratios on the growth of profit of listed oil and gas firms in Nigeria. The study employed ex-post facto and correlational design and the Data was obtained from annual reports of sample companies for the period 2014 to 2019. The secondary Data obtained from the published financial statements of the sampled firms were analyzed with descriptive, correlation matrix, and multiple regression. The results obtained from the multivariate analysis suggested that current ratio, acid test ratio, gross profit ratio, net profit ratio, net working capital, return on assets, return on equity and return on capital employed do positively and significantly affect the growth of profit of listed oil and gas firms in Nigeria.

Methods

In this study, ex-post facto research was employed. Manufacturing companies listed on the Nigerian Stock Exchange (NSE) between 2012 and 2021 were selected for this study. Thirteen (11) manufacturing companies that are listed on the Nigerian Stock Exchange made up the study's population (NSE). In the study, secondary data were employed. Evie 10.0 was used as the statistical tool for the study, which was conducted using panel data regression.

The panel data analysis approach was utilized to analyze the data from various firms at the same time. The error term (it) in the model is based on the separation of the components of individual and time effects in the panel data analysis (Baltagi, 2001).

$$Y_{it} = \alpha + X'_{it}\beta + e_{it} \quad (1)$$

In the above model (1) I represent firms while t represents time. When the error term is separated:

$$e_{it} = \mu_i + \lambda_t + \vartheta_{it} \quad (2)$$

is obtained. This equation is called the error component model.

Here, μ_i shows the individual effect and λ_t time effects. It is assumed that the data are independently identically distributed, have variance, and follow a normal distribution. (White noise process). First, panel unit root tests are used in the panel data analysis to look at the series stationarity status. Explanatory factors that are thought to be explained by their tight association must undergo internality tests since internality is detected in the variable. After the model has been estimated, it must be checked to see whether there are any issues with autocorrelation caused by heteroscedasticity.

Panel Unit Root Test

The panel unit root tests, which consider both the time dimension and the horizontal cross-section of the data, are acknowledged as statistically significant only when the time dimension information from the time series unit root tests is considered (Im et al., 1997; Maddala & Wu, 1999; Pesaran, 2006; Beyaert & Camacho, 2008). This is because the addition of the horizontal cross-section dimension increases the data's variability. Because the firms included in this study were not homogeneous, the IPS test was to be utilized. This test validates the model:

$$\Delta Y_{it} = \alpha_i Y_{it-1} + \sum_{j=1}^{p_j} \beta_{ij} \Delta Y_{it-j} + X'_{it} \partial + \varepsilon_{it} \quad (3)$$

The IPS test, for the differentiation of the horizontal cross-section units of α_i allows for a heterogeneous panel structure. The test hypotheses for all the horizontal cross-section units are:

$H_0: \alpha_i = 1$ (There series contains a unit root)

$H_0: \alpha_i < 1$ (The series is stationary for at least one horizontal cross-sectional unit.

When the test resulted in a probability value <0.05 H_0 was rejected and it was decided that the series is not stationary. The IPS panel unit root test results are shown in Table 1.

Table1: IPS Panel Unit Root Test Result

<i>Variable</i>	<i>Level Stage</i>	<i>Prob Value</i>	<i>First Diff Stage</i>	<i>Pro Value</i>
<i>Current Ratio</i>	0.02	0.50	-9.19	0.00
<i>Debt Equity Ratio</i>	1.23	0.89	-11.31	0.00
<i>Leverage Ratio</i>	-1.45	0.07	-14.31	0.00
<i>Market Ratio</i>	-0.99	0.16	-10.95	0.00
<i>Return on Assets</i>	3.166	0.99	-10.90	0.00

When the results in Table 1 are examined, it can be seen that all the series became stationary at the first difference stage. Thus, in the period examined it was seen that the accounting ratio variables and ROA were not static and the effect of the shocks on these variables was not lost over time.

Breush- Pagan Lagrange Multiplier (LM) Test

The LM test was used at this stage of the analysis to characterize the types of individual effects and the time effect (random or fixed). Because the chosen enterprises or firms were not members of the same financial group, it was projected that the individual and time effects would be random. Whether or not the effects are random can be decided with the LM test (Baltagi, 2001, pp. 15).

The LM Test is separated as LM₁ and LM₂

LM₁ represents the randomness test of individual effects while LM₂ represents the randomness test of time effects. In the LM₁ test, the hypothesis H₀: σ_μ⁰ = 0 (no individual effects) is tested with the LM₁ statistic, which is calculated with the following formula.

$$LM_1 = \frac{N \cdot T}{2 \cdot (T - 1)} \left[\frac{\sum_{i=1}^N (\sum_{t=1}^T (\hat{\epsilon}_{it}))^2}{\sum_{i=1}^N \sum_{t=1}^T \hat{\epsilon}_{it}^2} - 1 \right]^2 \quad (4)$$

In the LM₂ test, the H₀: σ_λ² = 0 hypotheses (no time effects) are tested with the LM₂ statistic, which is calculated with the following formula.

$$LM_2 = \frac{N \cdot T}{2 \cdot (T - 1)} \left[\frac{\sum_{i=1}^T (\sum_{t=1}^N (\hat{\epsilon}_{it}))^2}{\sum_{i=1}^N \sum_{t=1}^T \hat{\epsilon}_{it}^2} - 1 \right]^2 \quad (5)$$

Therefore,

$$LM = LM_1 + LM_2;$$

H₀: σ_μ² = σ_λ² = 0 (No individual or time effect)

H₁: σ_μ² ≠ 0 ; σ_λ² ≠ 0 (At least for one or both effects are random)

When the obtained probability value was <0.05, H₀ was rejected and it was decided that both effects were random. In this situation, prediction is made with a two-way random effect model. The results of the LM tests are shown in Table 2.

Table 2: LM Test

<i>Test</i>	<i>Prob Value</i>	<i>Decision</i>
<i>LM₁</i>	0.001	Individual effects are random
<i>LM₂</i>	0.004	Time effects are also random
<i>LM</i>	0.006	Time and Individual effects are random

When the results in Table 2 are examined in general, the individual effects and the time effects are seen to be random. From this result, prediction is made with a two-way random effect model.

Internality Problem Test

At this point in the investigation, the Hausman approach was used to determine whether or not there was a relationship (internality problem) between the factors explaining the individual effects. Hypotheses for testing are:

H₀: Cov(μ_{1i}, x_{1it}) = 0 (No internality problem)

H₁: Cov(μ_{1i}, x_{1it}) ≠ 0 (There is an internality problem)

The Hausman test was used and with the results of X² = 14.86 with probability value = 0.54, this value was >0.05, so H₀ hypothesis was accepted, and it was determined that the model had no internality issues. In this case, the random effects model of the study was required, and the results supported the LM test result.

Two-way Random Effects Model Prediction

The two-way random effects model was used to forecast the panel data analysis, and the findings are shown in Table 3.

Table 3: Estimated Result

Variable	Coefficient	St. Error	t-Statistic	Prob Value
Current Ratio	0.108	0.011	9.358	0.000
Debt Equity Ratio	0.250	0.039	6.280	0.000
Leverage Ratio	0.189	0.025	7.331	0.000
Market Ratio	0.236	0.025	9.380	0.213
Constant term	3.238	0.092	35.02	0.000
Diagnostic Test				
Weighted	R² = 0.58	R²- Adj=0.55	F-Statistic=77.02 (0.001)	
LM (Heteroskedasticity Test)	P-Value (0.2519)			

In the random effect models, weighted statistic values were used (Baltagi, 2001). Examining the weighted test results in Table 3 reveals that the model was statistically dependable. Furthermore, because there were no heteroscedasticity or autocorrelation issues, the estimated results were reliable and interpretable.

When the analysis results in Table 3 are examined, the current ratio, debt equity ratio, and leverage ratio affected Return on Assets at a statistically significant and interpretable level. When there is a unit increase in the current ratio, debt equity ratio, and leverage ratio will cause a corresponding increase in return on an asset will increase by 0.108%, 0.250%, and 0.189% respectively. This result shows that the accounting ratio affects financial performance positively. Another important result is that the market ratio is not statistically significant to financial performance at a 5% level of significance.

Discussion of Findings

The study examined Accounting Ratios as Means for measuring a firm's financial performance, the proxy for accounting ratio were current ratio, debt equity ratio, leverage ratio, and market ratio while the proxy for financial performance was returned on assets. The results firstly accessed the panel unit root test and the stationarity of the variable was confirmed after the first difference using the IPS panel unit root test approach.

The LM test was used to identify the type of specific if the individual or time series effect is fixed or random. The results suggest that effects are typically random as indicated in table 2.

Lastly, the result of the two-way random effect as in table 3 suggests that proxies of accounting ratio used for this study such as (current ratio, debt equity ratio, and leverage ratio) were found to have a statistically significant effect on financial performance at 5% level of significance given that their respective coefficient is 0.108; 0.250; 0.189 with a probability value <0.001 respectively. Also, table 3 indicated that the market ratio does not have a statistically significant effect on the financial performance of the firm considered. This is in line with the findings from Ayodele (2015) that the use of ratio analysis by the firm has assisted it in making meaningful comparisons and taking appropriate decisions for improvement. Hence, it can be said that ratio analysis has served as a veritable tool for measuring the company's performance.

Conclusion

Examining accounting ratios as a way to gauge a company's financial success is the goal of this study. Data from manufacturing companies registered on the Nigerian Stock Exchange (NSE) between 2012 and 2021 were chosen for this study, and ex-post facto research was employed to examine the data. The sample for the study consisted of thirteen (13) manufacturing companies that are listed on the Nigerian Stock Exchange (NSE). In the study, secondary data were employed. The study used Panel Data Regression as its statistical method and Evie 10.0 as its data source. The result shows that accounting ratios have a positive effect on achieving financial success.

The use of financial ratios analysis in a company has made significant contributions to profit maximization, shareholder wealth maximization, financial decision-making, and investment decision-making since financial ratios assist in analyzing the value of shares and the dividend per share. Every financial institution must use the analysis of financial ratios as a tool to improve the effective management of financial assets like stocks, bonds, and other financial instruments.

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