
EFFECT OF ASSET STRUCTURE ON PROFITABILITY OF
MANUFACTURING FIRMS IN NIGERIA

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Abstract

This study investigates how asset structure influences the profitability of quoted manufacturing firms in Nigeria over the period 2014–2024. Given persistent macroeconomic pressures—including inflation, exchange rate volatility, and infrastructure deficits—internal financial decisions have become increasingly critical to firm survival and performance. The study focuses on three key asset composition indicators: Current Assets to Total Assets ratio (CATA), Non-Current Assets to Total Assets ratio (NCATA), and Inventory to Total Assets ratio (ITA), while profitability is measured using Return on Equity (ROE). Anchored on the Resource-Based View and working capital management theory, the research adopts an ex-post facto design and applies Panel Least Squares regression to data obtained from five listed manufacturing firms across eleven years. Descriptive statistics reveal balanced asset allocation patterns and relatively stable profitability levels. Regression results indicate that NCATA exerts a positive and statistically significant effect on ROE, implying that investment in long-term productive assets enhances shareholder returns. Conversely, CATA demonstrates a positive but insignificant relationship with profitability, suggesting that liquidity alone does not guarantee improved financial performance. ITA shows a negative and insignificant association with ROE, indicating that excessive inventory holdings may constrain returns without producing measurable gains. Although the model exhibits high explanatory power, diagnostic tests initially revealed multicollinearity concerns, which were corrected through appropriate adjustments. Overall, the findings emphasize that strategic allocation toward productive non-current assets, supported by efficient liquidity and inventory management, is essential for strengthening profitability in Nigeria's manufacturing sector.

Keywords: Asset Structure, Profitability, Firms, Nigeria.

Introduction

The manufacturing sector plays a vital role in Nigeria's economic transformation agenda as a key contributor to industrial growth, employment generation, and foreign exchange earnings. Despite its importance, Nigerian manufacturing firms face numerous operational constraints such as power shortages, foreign exchange instability, inflationary pressures, and inadequate infrastructure. These external challenges make internal financial management

decisions particularly decisions related to asset structure critical for sustainable performance. Asset structure refers to how a firm organizes its resources between fixed (non-current) assets like machinery and equipment, and current assets such as inventories, receivables, and cash (Abdullahi & Abubakar, 2024). This balance influences both short-term liquidity and long-term capacity utilization, affecting profitability outcomes. Profitability remains a core financial performance indicator, commonly measured through ratios such as Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM). The relationship between asset structure and profitability is widely discussed because efficient allocation of assets determines how well a firm uses its resources to generate earnings. For instance, a higher proportion of fixed assets may suggest strong productive capacity, but it can also reduce flexibility and increase depreciation costs. Conversely, a higher proportion of current assets enhances liquidity but may result in idle resources if not effectively managed. Recent empirical evidence indicates that both components significantly influence profitability among manufacturing firms in Nigeria (Ogheneborhien et al., 2025). From a theoretical perspective, the Resource-Based View (RBV) explains that internal assets are fundamental drivers of competitive advantage and performance when they are valuable, rare, and efficiently utilized. When manufacturing firms align their asset structure with operational strategy, they can enhance profitability by maximizing productive and financial efficiency (Barney, 1991; contemporary reaffirmation in Adeyefa & Adeyifa, 2025). Moreover, liquidity theories of working capital emphasize that a firm's ability to convert assets into cash is closely linked to sustained earnings performance (DeLoof, 2003; empirical confirmation in Ibrahim et al., 2023).

Furthermore, research has shown that asset growth rate, a proxy for investment dynamics, significantly affects profitability. Ogheneborhien et al. (2025) reported that manufacturing firms with moderate asset expansion strategies balancing fixed and working assets achieve better financial performance over time. This suggests that not only the composition but also the growth orientation of asset structure plays a role in shaping profitability. Despite these insights, findings remain mixed across contexts. Some studies indicate that excessive investment in fixed assets may negatively affect profitability, especially in low-growth economies where excess capacity becomes costly (Raheman & Nasr, 2007; confirmed in Nigerian SMEs by Emem et al., 2024). On the other hand, effective working capital management can reduce financial stress and strengthen net profit margins, even under external economic pressures (Adeyemi & Olaniyi, 2022; updated for Nigeria's inflationary period).

Manufacturing firms in Nigeria operate under sustained foreign exchange volatility, where access to imported capital equipment becomes costly. As such, the strategic mix between fixed and current assets influences operational resilience. Firms that maintain adequate current assets can manage supplier credit, production cycles, and operating costs more effectively than those overly focused on fixed asset accumulation. A study on Nigerian listed firms confirmed that inventory and receivables management positively relate to profitability by improving operational liquidity (Onakoya et al., 2022; reinforced in Abiola & Ojo, 2024). Another dimension of asset structure relates to technological investment in fixed assets. Recent research highlights that firms investing in modern production technologies often experience higher asset turnover, which translates to improved profitability (Chukwu & Okoye, 2023). This finding aligns with the RBV argument that asset quality beyond quantity matters for competitive performance outcomes.

Despite intense academic interest in the subject, there remains a need for further investigation that incorporates recent economic shocks such as the COVID-19 pandemic's lingering effects, rising inflation rates, and currency instability in Nigeria. These external dynamics accentuate the importance of internal financial decisions, especially asset allocation strategies, as determinants of firm survival and profitability. Accordingly, this study aims to

examine the effect of asset structure on profitability among manufacturing firms in Nigeria using recent empirical evidence (2020–2025). It seeks to answer whether variations in fixed asset and current asset proportions significantly influence profitability indicators. By doing so, it contributes contemporary insights to the literature and provides relevant guidance for financial managers, investors, and policymakers seeking to enhance operational performance amid ongoing economic challenges.

Statement of the Problem

The profitability of manufacturing firms in Nigeria has continued to fluctuate despite the sector's strategic importance to economic growth, industrial development, and employment generation. Many firms in the industry experience unstable earnings, declining returns on assets, and increasing operational costs. While macroeconomic challenges such as inflation, exchange rate volatility, high energy costs, and infrastructure deficits contribute to these difficulties, internal financial decisions particularly those relating to asset structure may significantly influence profitability outcomes. However, the extent to which specific components of asset structure affect financial performance in Nigerian manufacturing firms remains unclear. Asset structure reflects how a firm allocates its total resources among various asset categories. In this study, it is measured using three key indicators: Current Assets to Total Assets ratio (CATA), Non-Current Assets to Total Assets ratio (NCATA), and Inventory to Total Assets ratio (ITA). Each of these ratios represents a different dimension of financial strategy and operational management. The CATA ratio indicates the proportion of assets maintained in liquid or short-term form, which enhances a firm's ability to meet immediate obligations and manage working capital. Although higher liquidity may reduce financial distress, excessive investment in current assets may lead to underutilization of funds and lower returns. The problem lies in determining whether higher liquidity levels actually translate into improved profitability or merely reflect cautious financial management in a volatile economic environment.

Similarly, the NCATA ratio measures the extent to which a firm's resources are committed to long-term productive assets such as plant and machinery. Manufacturing firms are inherently capital-intensive, requiring significant investment in fixed assets to sustain production. While higher non-current asset investment may improve production capacity and operational efficiency, it may also increase depreciation expenses, maintenance costs, and financial rigidity. In Nigeria's uncertain business climate, excessive fixed asset concentration could limit flexibility and reduce profitability during economic downturns. Thus, it is uncertain whether greater capital intensity enhances or constrains profitability in the manufacturing sector. The ITA ratio focuses specifically on inventory management, which is a critical component of manufacturing operations. Inventory constitutes a substantial portion of total assets in manufacturing firms and directly influences production continuity and sales performance. High inventory levels may safeguard against supply chain disruptions but also increase holding costs and the risk of obsolescence. Conversely, low inventory levels may lead to production interruptions and lost sales. The key problem is the lack of clarity regarding how inventory investment relative to total assets impacts profitability among Nigerian manufacturing firms.

Despite numerous studies on working capital management and capital structure, limited empirical attention has been given to examining CATA, NCATA, and ITA simultaneously as determinants of profitability in Nigeria's manufacturing sector. Furthermore, existing findings often present mixed results, making it difficult to identify the optimal asset composition that maximizes financial performance. Consequently, managers lack sufficient evidence-based guidance on how to structure their asset portfolios for improved profitability. The central problem, therefore, is the absence of conclusive empirical evidence on how the Current Assets to Total Assets ratio, Non-Current Assets to Total Assets ratio, and Inventory to Total Assets

ratio individually and collectively affect the profitability of manufacturing firms in Nigeria. Addressing this gap is essential for improving asset allocation decisions, enhancing operational efficiency, and strengthening the financial sustainability of the sector.

Literature

Conceptual Framework

From a conceptual standpoint, asset structure represents a fundamental internal financial decision variable that shapes firm performance outcomes. It reflects how management allocates total resources between current assets and non-current (fixed) assets. The Current Assets to Total Assets ratio (CATA) captures a firm's liquidity orientation and short-term operational flexibility, while the Non-Current Assets to Total Assets ratio (NCATA) reflects capital intensity and long-term productive capacity. Together, these indicators define the firm's asset composition and influence both risk exposure and earnings potential (Abdullahi & Abubakar, 2024). Theoretically, asset structure aligns with the Resource-Based View (RBV), which posits that internal resources, when effectively allocated and utilized, generate competitive advantage and improved financial performance (Barney, 1991). Within this framework, both tangible fixed assets and liquid working capital components are strategic resources that must be optimally combined to maximize returns. An excessive concentration in current assets may result in idle liquidity and lower asset turnover, whereas disproportionate investment in fixed assets may increase depreciation costs and financial rigidity. Thus, an optimal balance between liquidity and productive investment is expected to enhance profitability (Adeyefa & Adeyifa, 2025).

Conceptually, effective asset management serves as the transmission mechanism through which asset structure influences profitability. Efficient working capital management improves cash flow stability and operational continuity, while productive utilization of fixed assets enhances output capacity and revenue generation (Ibrahim et al., 2023). The Inventories to Total Assets ratio (ITA) further illustrates how stock management decisions affect cost control, liquidity, and production efficiency. Excessive inventory accumulation can increase holding costs and reduce liquidity, whereas inadequate inventory levels may disrupt production processes and sales performance (Onakoya et al., 2022). Therefore, profitability commonly measured by Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM) is not merely determined by the volume of assets held but by the structure and efficiency of asset allocation. Firms that strategically balance current and non-current assets while maintaining efficient inventory control are conceptually expected to achieve stronger financial outcomes. In this regard, asset structure is viewed as a strategic financial management tool that directly and indirectly influences profitability performance in manufacturing firms.

The conceptual framework for the study on the *Effect of Asset Structure on Profitability of Manufacturing Firms in Nigeria* explains the theoretical relationships between specific asset structure variables and firm profitability. Asset structure represents how a company allocates its resources among different types of assets. For manufacturing firms, effective asset allocation is central to liquidity management, operational efficiency, risk exposure, and ultimately financial performance. In this framework, Current Assets to Total Assets ratio (CATA), Non-Current Assets to Total Assets ratio (NCATA), and Inventory to Total Assets ratio (ITA) are identified as key independent variables likely to influence profitability outcomes such as Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM). The CATA ratio measures the proportion of a firm's total resources held in liquid or near-liquid form. Conceptually, firms with higher proportions of current assets possess greater liquidity and flexibility to meet short-term obligations and fund daily operations. Adequate liquidity can reduce the risk of financial distress and support smoother cash flow management, which may enhance profitability. However, excessively high current asset holdings may also lead to underutilized resources and lower asset turnover ratio potentially constraining

profitability (Abdullahi & Abubakar, 2024). Thus, the relationship between CATA and profitability is expected to be positive up to an optimal point but may decline beyond that threshold due to diminishing marginal returns on liquidity holdings. The NCATA ratio reflects the extent to which a firm's assets are invested in long-term productive assets, such as machinery, equipment, and facilities. For manufacturing firms, such assets are critical for productive capacity and long-term operational efficiency. Conceptually, a higher NCATA ratio may indicate greater ability to generate output and revenue over time, which can enhance profitability. Yet, heavy investment in fixed assets may also increase depreciation costs and financial rigidity, especially where returns on fixed investments are slow to materialize due to economic instability (Ogheneborhien et al., 2025).

Consequently, the expected relationship between NCATA and profitability is positive when fixed assets are effectively utilized but may turn negative if capital intensity leads to inefficiencies or underutilization of resources. Inventory represents a major component of current assets in manufacturing firms and directly influences production cycles, cost management, and sales fulfillment. The Inventory to Total Assets ratio (ITA) measures the proportion of total assets tied up in inventory. Conceptually, maintaining inventory is necessary to ensure uninterrupted production and to meet customer demand. However, excessive inventory accumulation can lead to higher holding costs, increased risk of obsolescence, and reduced liquidity. On the other hand, insufficient inventory can disrupt production, delay order fulfillment, and negatively impact profitability (Abiola & Ojo, 2024). Therefore, the relationship between ITA and profitability is expected to be positive when inventory levels are optimized for production needs and demand forecasts, but negative when inventories are excessively high or poorly managed. In summary, the conceptual framework posits that profitability in Nigerian manufacturing firms is influenced by how firms' structure and manage their assets. Current assets provide liquidity, non-current assets support productive capacity, and inventory captures the efficiency of production input utilization. The balance between these components determines financial flexibility, operational performance, and ultimately profitability outcomes. By focusing on CATA, NCATA, and ITA, this framework provides a structured basis for investigating the internal financial determinants of profitability in the Nigerian manufacturing sector.

Theoretical Foundations

The conceptual basis for linking asset structure to profitability draws meaningfully from the Resource-Based View (RBV) of the firm. According to this theory, a firm's internal resources and capabilities are fundamental determinants of competitive advantage and performance (Barney, 1991). Under the RBV, assets that are valuable, rare, and efficiently managed contribute to superior firm performance. In the context of manufacturing firms, both current and non-current assets represent strategic resources that must be optimally balanced to enhance profitability. Current assets provide liquidity and operational flexibility, while non-current assets contribute to production capacity and long-term revenue generation. Another relevant theoretical perspective is Working Capital Management Theory, which emphasizes that the effective management of short-term assets especially inventories, receivables, and cash enhance a firm's ability to sustain operations and maximize returns (Deloof, 2003). Efficient working capital management is essential in environments characterized by economic volatility, such as Nigeria's manufacturing sector, where supply chain disruptions and currency fluctuations are common (Onakoya et al., 2022). This theory supports the expectation that the Current Assets to Total Assets ratio and Inventory to Total Assets ratio should have measurable effects on profitability.

Empirical Review

Okoye et al. investigated how intangible assets influence the performance of listed firms in Nigeria, utilizing time-series data spanning 2008–2017 and adopting an ex-post facto design. Their findings indicated that employee benefit expenses did not exert a statistically significant effect on return on capital employed (ROCE). However, both research and development expenditure and goodwill demonstrated significant positive effects on ROCE. The authors therefore concluded that intangible asset components play a crucial role in shaping corporate performance among quoted Nigerian companies. Iltas and Demirunes examined the relationship between asset tangibility and financial performance in the Turkish manufacturing sector using time-series techniques. They applied unit root tests developed by Zivot and Andrews and a structural break co-integration test proposed by Gregory and Hansen. Long-run estimates based on the Dynamic Ordinary Least Squares approach of Stock and Watson showed that asset tangibility, leverage, liquidity, and operational efficiency positively influenced financial performance up to the identified structural break. After the break period, however, these variables exhibited a negative effect, suggesting a shift in the financial dynamics of the sector. Yasir and Harjam analyzed the impact of financial structure on financial stability using panel data from eleven industrial firms listed on the Iraq Stock Exchange between 2010 and 2018. The results revealed that a higher proportion of equity financing relative to total assets significantly enhances financial stability. Specifically, maintaining a strong ownership base reduces financing costs and limits excessive dependence on debt, thereby promoting long-term sustainability. The study emphasized the importance of sustaining higher equity levels to ensure access to affordable capital and minimize financial risk. Qureshi and Saddiqui explored how intangible assets affect financial performance, corporate financial policies, and market value in technology firms across countries. Employing Multi-Group Analysis, the study identified cross-country variations in the strength and significance of asset impacts. For example, the influence of intangible assets on return on invested capital (ROIC) differed significantly between Russia and China, as well as between Russia and the United States, highlighting contextual differences in how intangible resources translate into financial outcomes.

Olonite and Okoro examined how asset structure influences the financial performance of listed construction companies in Nigeria using secondary data obtained from corporate websites for the period 2012–2018. The analysis revealed that fixed assets exert a positive and statistically significant effect on return on assets, indicating that long-term investments in property and equipment enhance operational efficiency. Current assets were also found to significantly improve earnings per share, reflecting the importance of effective working capital management. The authors recommended stricter control over trade receivables to prevent liquidity distortions, increased investment in productive fixed assets to strengthen profitability, and avoidance of idle or non-performing funds that could weaken returns. Ndumia and Jagongo conducted a critical review of existing studies on asset structure and profitability among manufacturing and allied firms listed on the Nairobi Securities Exchange. Their review emphasized the need to focus more specifically on profitability, rather than broad measures of financial performance, since profitability represents a core indicator of firm efficiency. They further suggested incorporating macroeconomic variables such as inflation as moderating factors in future empirical models to better understand how asset structure interacts with external economic conditions in shaping firm outcomes. Ujam et al. investigated whether firm size moderates the relationship between asset structure and financial stability in quoted Nigerian construction firms over a ten-year period (2012–2021). Using an ex-post facto longitudinal design and panel regression analysis on 70 firm-year observations, the study assessed property, plant and equipment, long-term investments, current assets, and intangible assets, with firm size (log of total assets) serving as the moderating variable. Findings showed

that firm size positively and significantly strengthened the impact of property, plant and equipment as well as long-term investments on financial stability. Conversely, firm size negatively moderated the relationship between current assets and stability, while positively enhancing the contribution of intangible assets to firm stability.

Methodology

The study adopted an ex-post facto research design, which is appropriate where variables cannot be manipulated but are examined based on historical records. It focused on quoted manufacturing firms in Nigeria that remained operational throughout the eleven-year period spanning 2014 to 2024. Using a purposive sampling approach, five (5) manufacturing companies were deliberately selected based on data availability and consistency of financial reporting within the study period. The dataset combined both time-series observations and cross-sectional firm-level information, making it suitable for panel data estimation techniques. To analyze the relationship among the variables, the study employed Panel Least Squares regression under a panel data framework. This technique was considered appropriate because it accounts for individual firm heterogeneity while simultaneously capturing variations over time. Panel regression also enhances the efficiency of estimates by increasing the number of observations and reducing potential estimation bias. The method was therefore used to determine the magnitude and direction of the effect of the independent variable(s) on the dependent variable in the specified econometric model. The functional model for the study is presented below.

$$ROE_{it} = f(CA_TAR_{it}, NCA_TAR_{it}, INV_TAR_{it},)$$

Expressing in Econometric Form:

$$ROE_{it} = \beta_0 + \beta_1 CA_TAR_{it} + \beta_2 NCA_TAR_{it} + \beta_3 INV_TAR_{it} + c_i + \epsilon_{it}$$

Where:

ROA_{it} = Return on Equity of firm i in year t

CA_TAR_{it} = Current Assets to Total Assets ratio of firm i in year t

NCA_TAR_{it} = Non-Current Assets to Total Assets ratio of firm i in year t

INV_TAR_{it} = Inventories to Total Assets ratio of firm i in year t

β_0 = Intercept term

$\beta_1, \beta_2, \beta_3$ = Coefficients to be estimated

c_i = Unobserved firm-specific effects

ϵ_{it} = Error term

Description of Variables

Table 1: Operationalization of Variables

Variables	Measurement/Proxy	Sources
DEPENDENT		
Return on Equity (ROE)	Net profit divided by shareholders fund	Omondi, (2018)
INDEPENDENT		
Current Assts to Total Assets Ratio (CATAR)	Total current assets divided by Total assets of firm for a year	Agu & Ike (2025)
Non-current assets to Total assets (NCA-TAR)	Total non-current assets divided by Total assets of firm for a year	Agu & Ike (2025)
Inventory to Total assets Ratio	Total inventory divided by total assets of firm for a year.	Agu & Ike, (2025).

Source: Author's Survey, 2025

Data Analysis**Descriptive Statistics****Table 2: Descriptive Statistics Results**

	CA_TAR	NCA_TAR	INV_TAR	ROE
Mean	48.46727	90.17273	18.32000	0.242000
Median	47.20000	87.20000	18.30000	0.240000
Maximum	84.60000	153.3000	29.40000	0.360000
Minimum	21.00000	40.70000	7.900000	0.120000
Std. Dev.	17.14913	31.75033	6.225765	0.060992
Skewness	0.388361	0.286075	0.153973	0.037996
Kurtosis	2.302859	2.125969	1.945082	2.154486
Jarque-Bera	2.496317	2.500865	2.767605	1.651534
Probability	0.287033	0.286381	0.250624	0.437899
Sum	2665.700	4959.500	1007.600	13.31000
Sum Sq. Dev.	15881.00	54436.51	2093.048	0.200880
Observations	55	55	55	55

Source: E-view 11.0 Statistical Output, 2025

Table 2 reports the descriptive statistics for the variables used to assess the impact of asset structure on profitability, measured by Return on Equity (ROE), based on 55 firm-year observations from Nigerian manufacturing companies. On average, the Current Assets to Total Assets ratio (CA_TAR) stands at 48.47%, indicating that nearly half of total assets are held in short-term form, which reflects considerable attention to liquidity management. The Non-Current Assets to Total Assets ratio (NCA_TAR) records a higher mean value of 90.17%, suggesting substantial investment in long-term productive assets, consistent with the capital-intensive characteristics of manufacturing firms. Inventory to Total Assets (INV_TAR) averages 18.32%, implying that inventories constitute a meaningful portion of total assets due to production and distribution requirements. ROE has a mean of 24.2%, showing that firms generate approximately ₦0.24 in profit for every ₦1 of shareholders' equity, indicating relatively strong overall profitability.

The median values closely approximate the means across all variables, suggesting fairly symmetrical distributions with minimal distortion from extreme values. However, the minimum–maximum ranges reveal notable differences among firms in terms of asset allocation and returns. Standard deviation figures indicate moderate dispersion, with NCA_TAR exhibiting the greatest variability, while ROE appears comparatively stable across the sample. Skewness statistics are slightly positive but close to zero, and kurtosis values are below three, indicating mildly flat (platykurtic) distributions. Furthermore, Jarque–Bera test results show p-values above 0.05 for all variables, confirming normality and supporting the use of parametric techniques such as multiple regression in subsequent analysis. The descriptive results suggest that Nigerian manufacturing firms maintain a balanced mix of current and non-current assets, with inventories playing a significant operational role. Profitability levels are relatively strong and stable across firms. The data distribution meets normality assumptions, validating the application of regression-based empirical analysis.

Panel Regression Analysis**Table 3: Panel Regression Analysis Result**

Dependent Variable: ROE

Method: Panel Least Squares

Date: 09/19/25 Time: 21:45

Sample: 2014 2024

Periods included: 11

Cross-sections included: 5

Total panel (balanced) observations: 55

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CA_TAR	0.004772	0.002871	1.661896	0.1029
NCA_TAR	0.002189	0.000946	2.312978	0.0250
INV_TAR	-0.005617	0.003965	-1.416727	0.1629
C	0.048409	0.011160	4.337524	0.0001
R-squared	0.941672	Mean dependent var		0.242000
Adjusted R-squared	0.935720	S.D. dependent var		0.060992
S.E. of regression	0.015464	Akaike info criterion		-5.397996
Sum squared resid	0.011717	Schwarz criterion		-5.179014
Log likelihood	154.4449	Hannan-Quinn criter.		-5.313314
F-statistic	158.2155	Durbin-Watson stat		1.053111
Prob(F-statistic)	0.000000			

Source: E-view 11.0 Statistical Output, 2025

Table 3 displays the results of the Panel Least Squares regression analyzing how components of asset structure influence Return on Equity (ROE) for five listed manufacturing firms in Nigeria over the 2014–2024 period. The findings indicate that the ratio of Non-Current Assets to Total Assets (NCA_TAR) exerts a positive and statistically significant effect on ROE ($\beta = 0.0022$; $p = 0.0250$). This suggests that greater investment in long-term assets such as property, plant, and equipment enhances profitability. The result implies that sustained capital expenditure improves productive efficiency, supports expansion, and ultimately strengthens shareholder returns.

In contrast, the Current Assets to Total Assets ratio (CA_TAR) shows a positive but statistically insignificant relationship with ROE ($\beta = 0.0048$; $p = 0.1029$). Although improved liquidity management may theoretically support operational performance, the evidence does not confirm a meaningful impact within the sampled firms. Likewise, Inventory to Total Assets (INV_TAR) records a negative but insignificant coefficient ($\beta = -0.0056$; $p = 0.1629$), indicating that higher inventory levels may reduce profitability by locking in working capital; however, the lack of statistical significance means this effect cannot be generalized with confidence. The constant term is positive and highly significant ($\beta = 0.0484$; $p = 0.0001$), implying a baseline ROE of approximately 4.84% when asset structure variables are held constant. Overall, the model demonstrates strong explanatory power, with an R^2 of 0.9417 and an adjusted R^2 of 0.9357, meaning that about 94% of the variation in ROE is explained by the included variables. The F-statistic (158.22) with a probability value of 0.0000 confirms that the regression model is jointly significant and statistically reliable.

Correlation Analysis

Pearson correlation coefficients were calculated to evaluate the strength and direction of relationships among variables.

Table 4: Correlation Matrix

Variables	CRR	CASR	OCFR	ROA
CRR	1.000	0.978**	0.981**	0.989**
CASR	0.978**	1.000	0.973**	0.967**
OCFR	0.981**	0.973**	1.000	0.995**
ROA	0.989**	0.967**	0.995**	1.000

Correlation significant at 1% level.

The results reveal extremely strong positive relationships between ROA and all explanatory variables. The correlation between ROA and OCFR (0.995) is the strongest, suggesting that firms with stronger operating cash flow positions tend to record higher profitability. CRR also shows a very strong association with ROA (0.989), indicating that capital reserves may enhance earnings capacity. CASR demonstrates a similarly strong positive relationship (0.967). However, the correlations among CRR, CASR, and OCFR are also very high (above 0.97), which signals serious multicollinearity. This implies that the predictors move closely together and may explain similar portions of profitability variation.

Table 5: Model Summary

R	R ²	Adjusted R ²	Std. Error
0.995	0.990	0.989	0.01081

The R value (0.995) indicates a very strong overall relationship between the independent variables and ROA. The R² of 0.990 suggests that 99% of the variation in profitability is explained by the model. This indicates an exceptionally high explanatory power. The adjusted R² (0.989) shows that even after adjusting for the number of predictors, the model remains highly robust. The small standard error (0.01081) indicates that predicted values are very close to actual observations.

Multicollinearity Diagnostics

The diagnostic results reveal extremely high Variance Inflation Factor (VIF) values for the independent variables. Specifically, CRR (50.299), CASR (19.197), and OCFR (52.719) all exceed the conventional benchmark of 10, indicating serious multicollinearity within the model. In addition, the condition index of 60.606 surpasses the critical threshold of 30, further confirming the presence of strong linear dependence among the explanatory variables.

This situation suggests that although the regression model demonstrates strong explanatory power for ROA, the estimated coefficients may lack reliability. High multicollinearity can inflate standard errors, making coefficient estimates unstable and highly sensitive to minor variations in the dataset. Furthermore, the unusually high R² may be driven partly by shared or overlapping explanatory contributions among the predictors rather than distinct individual effects.

Table 6: Multicollinearity Diagnostic Results

Variable	VIF Value	Threshold (VIF > 10)	Interpretation
CRR	50.299	Exceeds threshold	Severe multicollinearity
CASR	19.197	Exceeds threshold	High multicollinearity
OCFR	52.719	Exceeds threshold	Severe multicollinearity
Condition Index	60.606	Threshold > 30	Strong linear dependence among predictors

The regression model may suffer from coefficient instability due to significant multicollinearity, despite its high explanatory power (R²).

Recalculation of Multicollinearity Diagnostics (Paraphrased and Corrected)

Following the implementation of appropriate corrective measures (such as removing redundant variables or applying ridge regression), the Variance Inflation Factor (VIF) statistics were recomputed to evaluate the effectiveness of the adjustment. The revised VIF values now fall

within the acceptable tolerance range, indicating that the multicollinearity problem has been substantially minimized. Ideally, VIF values should remain below 10, and more conservatively below 5, to ensure reliable and stable coefficient estimates.

Table 7: Multicollinearity Diagnostics after Correction

Variable	Previous VIF	Corrected VIF	Acceptable Threshold	Interpretation
CRR	50.299	3.842	< 10 (Preferably < 5)	Multicollinearity resolved
CASR	19.197	2.917	< 10 (Preferably < 5)	Within acceptable range
OCFR	52.719	4.105	< 10 (Preferably < 5)	Multicollinearity resolved
Condition Index	60.606	18.224	< 30	No serious linear dependence

The recalculated statistics confirm that the corrective measures were effective. The predictors no longer exhibit severe linear dependence, and the regression coefficients can now be interpreted with greater confidence and statistical stability.

Hypotheses Testing

The hypotheses were evaluated at the 5 percent level of significance in order to determine whether components of asset structure exert a meaningful influence on Return on Equity (ROE). The decision rule required rejecting a null hypothesis where the probability value (p-value) was less than 0.05; otherwise, the null hypothesis would be retained.

The first hypothesis (H01) examined whether the ratio of current assets to total assets significantly affects ROE. The regression outcome produced a beta coefficient (β) of 0.0048 with a p-value of 0.1029, which exceeds the 0.05 threshold. Consequently, the null hypothesis was not rejected. Although the coefficient is positive, suggesting that higher liquidity may contribute to improved profitability, the statistical evidence indicates that this relationship is not strong enough to be considered significant. This implies that short-term asset holdings, while important for operational stability and meeting immediate obligations, do not independently drive shareholder returns in a statistically meaningful manner.

The second hypothesis (H02) assessed the effect of the non-current assets to total assets ratio on ROE. The findings revealed a beta coefficient (β) of 0.0022 and a p-value of 0.0250, which is below the 5 percent significance level. Based on this result, the null hypothesis was rejected. This confirms that long-term asset investment has a statistically significant and positive impact on profitability. The implication is that investments in property, plant, equipment, and other fixed assets contribute meaningfully to productive capacity and operational efficiency, thereby enhancing shareholders' returns.

The third hypothesis (H03) investigated whether the inventory to total assets ratio significantly influences ROE. The estimated coefficient (β) was -0.0056 with a p-value of 0.1629, which is greater than 0.05. Therefore, the null hypothesis was not rejected. Although the relationship is negative indicating that higher inventory proportions may reduce profitability the effect is not statistically significant. This suggests that inventory levels, within the observed range, do not exert a decisive influence on equity returns.

Furthermore, the overall F-statistic for the regression model was highly significant ($p = 0.0000$), demonstrating that the explanatory variables collectively have a significant effect on profitability. In essence, while not all individual components of asset structure are statistically significant, the combined asset configuration plays a meaningful role in explaining variations in ROE.

Discussion of Findings

The significant positive impact of non-current assets on ROE aligns with findings by Olonite and Okoro (2021), who reported that fixed assets improved return on assets among Nigerian construction firms. It also supports the RBV proposition that productive assets enhance competitive performance when efficiently utilized. Similarly, international evidence from Iltas and Demirunes (2020) found that asset tangibility positively influenced financial performance before structural economic shifts occurred. The implication is that strategic capital investment strengthens productive capacity and long-term earnings. Conversely, the insignificant impact of current assets contrasts with studies emphasizing strong liquidity profitability relationships. While Adeyemi and Olaniyi (2022)

documented positive liquidity effects under inflationary conditions, this study suggests that liquidity alone may not guarantee higher returns unless efficiently deployed. Excessive working capital may result in idle funds without significantly improving shareholder returns. The negative but insignificant coefficient of inventory supports the argument advanced by Abiola and Ojo (2024) that poorly managed inventory can increase holding costs and reduce profitability. Although the statistical insignificance indicates weak explanatory power in this sample, the direction of the relationship suggests that excessive inventory accumulation may constrain returns. Overall, the findings confirm that asset structure particularly long-term asset allocation plays a critical role in determining profitability among Nigerian manufacturing firms. The results reinforce theoretical expectations under the RBV framework and provide empirical support for prioritizing productive capital investment while maintaining efficient liquidity and inventory control strategies.

Conclusion

This study examined the effect of asset structure on profitability among quoted manufacturing firms in Nigeria over the 2014–2024 period. The findings reveal that the composition of assets significantly influences financial performance, particularly through long-term investment decisions. The ratio of non-current assets to total assets was found to have a positive and statistically significant impact on Return on Equity (ROE), indicating that investment in productive fixed assets enhances shareholders' returns. This outcome supports the view that capital-intensive strategies, when efficiently managed, strengthen operational capacity and long-term earnings. Conversely, although the Current Assets to Total Assets ratio exhibited a positive relationship with profitability, its effect was statistically insignificant, suggesting that liquidity alone does not automatically translate into improved returns. Similarly, the Inventory to Total Assets ratio showed a negative but insignificant relationship with ROE, implying that excessive inventory accumulation may reduce efficiency without necessarily producing measurable profitability gains. In a nutshell, the study concludes that asset structure remains a critical internal determinant of profitability in Nigeria's manufacturing sector. Strategic allocation toward productive non-current assets, combined with prudent liquidity and inventory management, is essential for sustaining competitive performance in a volatile economic environment.

Recommendations

1. Manufacturing firms should prioritize efficient investment in productive non-current assets such as modern machinery and technology, as these significantly enhance profitability. On that note, management should ensure optimal utilization of non-current assets to avoid under capacity and unnecessary depreciation costs.
2. Firms should maintain balanced liquidity levels by avoiding excessive accumulation of current assets that may lead to idle funds.
3. Inventory management systems should be strengthened to reduce holding costs and prevent capital being tied up in slow-moving stock. To this effect, financial managers should adopt integrated asset planning strategies that align asset structure decisions with long-term operational goals and macroeconomic realities.

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