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# Financial Management and Firms' Profitability: Evidence from Nigerian Manufacturing Listed Firms

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**Abstract**

The Nigerian manufacturing industry is one of the country's key economic growth engines. Since firms in the manufacturing sector are considered as high-risk ventures, they encounter significant difficulty in raising funds, especially from financial institutions. The manufacturing sector reported a significant decline in its economic activity and job creation compared to other sectors due to the difficulties faced by firms in attaining an optimal financial management strategy to support their business operations. In the attempt to identify optimal finance for maximizing firms' profitability, this study aims to examine the relationship between financial management practices and the financial performance of quoted Nigerian manufacturing firms. A sample of 33 quoted Nigerian manufacturing companies from the year 2015 to 2018 were selected. A multivariate regression analysis was performed based on 132 firm-year observations, where it is documented that solvency, proxies by debt to assets ratio, is positively and significantly related to firm's profitability. Results however revealed an insignificant relationship between liquidity and firm's profitability. The findings of this study reveal that firms should sustain in being solvent in order to generate business growth and achieve set development goals. Besides being solvent, companies should manage their liquidity position effectively, thus enabling firms to reap competitive advantage. The findings support the trade-off theory, which claims that firm profitability increases as a firm's debt increases, but only to the point where any further increases in the firms' debt after it

reaches its optimum level causes profitability to decline.

**Keywords:** Financial management, Liquidity, Solvency, Profitability, Nigeria

## 1. Introduction

Financial management is a managerial tool that focuses on vigilant identification, evaluation, and deployment of financial matters and decisions relating to sources of fund, associated risks, and projected returns (Oyelade, 2019). Financial management examines key aspects of a company's investment activity, particularly on the financing structure that optimizes a company's returns. It entails structuring a company's funding for long-term product development and business growth. It also involves the establishment of a business fund comprised of current assets with the goal of generating short-term cash and long-term profits (Ramli et al., 2019; Veeraraghavan, 2018; Basit & Irwan, 2017).

A financial management activity identifies the ideal choice of funding to ensure the accomplishment of a corporation's primary objective of maximizing profit. Demonstrating a sound financial performance is essential as it curtails the barriers to corporate development as well as the risk of a company going bankrupt. It is also crucial in order for the firm to get the most out of its efforts in dealing with the competitive environment. (Oyelade, 2019; Yazdanfar & Öhman, 2014). Specifically, financial performance can be measured based on a firm's liquidity, solvency, and long-term returns of an investment (Getahun, 2016). It provides investors and stakeholders with the information they need to aid in informed decision-making and can be used as a basis of comparison between similar businesses in an industry that shows a firm's progress, achievement, and financial position (Ramli et al., 2019; Wolmarans & Meintjes, 2015).

The literature on financial performance shows that a company's resources are managed for business continuity and wealth maximization (Veeraraghavan, 2018). Prior studies have discovered that managers have a significant influence in re-instituting a standardized method of selecting optimal funding practices that will improve firm performance. Financial managers of manufacturing industries, in particular, are obligated to refine financial management practices effectively to ensure favorable impacts on the business life cycle, which is paramount to stimulating global investment. From this perspective, managers need to closely evaluate risks and returns associated with firms' optimal capital for managing business operational activities and carefully selecting suitable investment opportunities that will yield consistent and maximum shareholder returns (Nketsiah, 2018). Insufficient funding for operational activities, on the other hand, along with volatility in a firm's environment, often generates a problematic business situation (Getahun, 2016).

## 2. Literature Review and Hypotheses Development

The manufacturing industry is a prominent avenue for productivity development that deals with the import and export of goods and forms a productive business partnership with businesses from other industries. The manufacturing sector has a high level of technological expertise and includes activities that relate to producing consumer products, industrial products, and healthcare (Tan & Hamid, 2014). Oyelade (2019) examined the impact of

financial management practices in the Nigerian construction industry and discovered that financial management practices have a significant impact on firms' financial performance.

The Nigerian manufacturing sector, which has been identified as the country's primary economic growth engine, face considerable challenges in achieving an effective financial management practice. In particular, the Nigerian manufacturing firms have encountered significant difficulties in raising loan capital since independence due to inefficient and ineffective financial policies. Banks perceive manufacturing firms as high-risk ventures, which compromise firms' liquidity and their ability to payback their loan obligations, resulting in banks' hesitation to offer credit to the firms. This is exacerbated by the fact that returns on investments of manufacturing companies have consistently been lower than the rate of borrowing. Nigeria was once hit by the 2016 economic downturn, which impacted the sector's numerous activities and resulted in an unpredictably poor performance (Ali Qalati et al., 2019). Iqbal & Usman (2018) claim that the manufacturing sector's contribution to the gross domestic product (GDP) declined by around N80 billion during the 2016 fiscal year, causing a period of instability. Based on the Nigeria Bureau of Statistics (NBS, 2019), most of the manufacturing firms listed on the NSE experienced considerable challenges in implementing an optimum financial management strategy, making it difficult for the firms to achieve favorable performance, and gain a competitive advantage. Faced with such issues, Nigerian manufacturing firms reported a significant decline in economic activities and job creation compared to firms from other sectors. Hence, it appears vital that research on the manufacturing sector is conducted to examine firms' ability to bring in multiplier factor effects in restoring a depressed economy like Nigeria and their capability of exploiting the country's resources in order to establish a healthier economic condition.

A firm's profitability is used to indicate the health of a firm's business performance and measures a firm's efficiency in the deployment of its assets and capital resources to generate positive returns (Ibrahim & Mustapha, 2019). It illustrates an organizational accomplishment over the period of business operations, which may be used as a benchmark of progression across different industries and sectors (Rao et al., 2011). Firm performance can be measured based on two different perspectives, i.e., the accounting-based measure and market-based measure. The former accounting-based measure depicts a firm's historical business performance and includes measurements such as return on assets, return on investment, gross profit margin, net profit ratio, and return on capital employed. Whereas the latter market-based measure predicts a firm's future performance and business going concern. Relevant measurements include Tobin-q, market-to-book value, dividend yield, annual stock return, stock repurchases. Whilst prior research examined firm performance using a variety of different measures, there is no single accepted yardstick for determining firm performance.

Liquidity is another important aspect that is commonly used to assess a firm's capability to repay its short-term obligations. It is defined as the ratio of a firm's current assets to current liabilities, with a higher liquidity ratio indicating a higher likelihood of meeting projected arrears and maintaining prudent financial management (Kimondo et al., 2016). Proper financial management is critical for sustaining adequate liquidity in day-to-day business tasks to enable effective business operations and fulfillment of commitments when they become

due (Awais et al., 2016).

An enterprise with a high ratio of liquidity depicts its ability to balance-off both inflows and outflows of finance, which does not create a doubtful signal of bankruptcy for the creditors and creates an instance to deal with unexpected contingencies (Frank, 2008). There is a stimulation of profits level where current liabilities are utilized for corporate investment, since short-term finances are relatively cheap to foster the smooth operation of enterprise activities. This is supported by the pecking-order theory whereby firms that generate greater revenue employ a lesser amount of long-term debt in the finance of their investments and activities (Myers, 1983). This emphasizes that an increase in enterprises' borrowings creates abnormal and inefficient coverage that decreases an enterprise's future returns identified with high risk. The pecking order predicts a positive relationship between the current ratio and the profitability of quoted Nigeria manufacturing firms.

A firm's liquidity position is affected by the reduction in cash inflows or increase in cash outflows. Based on prior studies, current asset ratio and cash to assets ratio, which measures liquidity, reveal significant relationships that could help predict firms' profitability (Shimenga & Miroga, 2019; Warrad, 2018; Zulkipli et al., 2019). For example, studies have shown that liquidity is significantly and negatively related to profitability (Daryanto et al., 2018; Moch et al., 2019; Sahni & Kulkarni, 2018; Muinamia & Atheru, 2018), whereas other studies found a significant positive relationship between liquidity and profitability (Naz et al., 2016; Sattar, 2020; Kajola et al., 2019; Akenga, 2017). The importance of liquidity and its impact on financial performance cannot be overstated, as it affects the confidence among investors and creditors (Naz et al., 2016).

*H1: There is a significant relationship between liquidity and firm performance.*

Another aspect of financial management is solvency that describe the debt capacity of a company's capital structure (Ramadan, 2015). A company's solvency shows its capacity to meet its long-term financial obligations, including interest payments. This is a budgetary portion that reflects the amount of debt financing a firm has taken on as part of its funding mix as shown in its financial statements (Ahmed et al., 2018). A high debt-to-equity capital ratio implies a firm's likelihood of being insolvent. Previous studies have shown a significant relationship between solvency and profitability which corresponds to the expectations of the trade-off theory (Fajaria, 2018; Veeraraghavan, 2018). The trade-off theory explains how firms achieve an optimum capital structure. The theory claimed that a trade-off between tax benefits and financial distress costs could enhance managers' target of optimal financing (Myers, 1977). Moreover, profitable companies in a country where interest on the debt is a tax-deductible expense should increase their leverage, which ought to shield their revenue generated from the tax. This promotes the application of debt, and it increases with the existence of non-debt tax protection. Long-term debt will have a significant influence on profitability but eventually shifts to become negative at some point where there exists an equilibrium of benefits and costs as well as leverage increases (Titman & Wessel, 1988).

Previous studies have shown mixed findings on the relationship between solvency and firm performance. On the one hand, solvency was shown to have a positive significant relationship

with profitability (Ebrati et al., 2013; Kartikasari & Merianti, 2016; Moch et al., 2019; Muinamia & Atheru, 2018; Ahmed et al., 2018). Profitable firms demonstrated quality by leveraging up, which resulted in a positive relationship between profitability and debt to equity ratio (Modigliani Miller, 1958). On the other hand, numerous studies have discovered that solvency has a negatively significant relationship with profitability (Soumadi & Hayajneh, 2011; Khalid et al., 2014; Yazdanfar & Öhman, 2014; Ramadan, 2015; Awais et al., 2016; Yang et al., 2016; Chang et al., 2019; Ibrahim, 2020; Zelalem, 2020).

On a practical scale, there is no optimal mix of finance that could secure greater profitability for firms. Thus, every enterprise's management is encumbered to identify where the marginal cost of capital equates to the marginal benefits of borrowing for concrete maintenance in the long-run (Anh et al., 2018). According to Majluf (1984); & Myers (1977), a particular order of financing (internal finance, debt, equity) is necessary under the pecking order theory, where retained earnings are preferred and debt financing is opted for as an external source when necessary. The trade-off theory asserts to maximizing enterprise profitability and value through the minimization of the average cost of capital and the establishment of a favorable debt-assets ratio. This posits the conclusion that there is a significant relationship between the debt to assets ratio and the profitability of quoted Nigeria manufacturing firms.

*H2: There is a significant relationship between solvency and firm performance*

## 3. Research Methodology and Results

The sample utilized for this study comprises 35 manufacturing firms from the total population of 39 Nigerian listed manufacturing firms. This study covers a period of 4 years ranging from 2015 to 2018. Financial data was collected based on manual content analysis of companies audited financial statements that were published on Nigeria Stock Exchange (NSE) official website.

### *3.1 Model Specification*

Firm profitability, being the dependent variable, is measured by Return on Asset (ROA). As for the independent variables, liquidity (measured by current ratio and cash to asset ratio) and solvency (measured by debt to asset ratio) will be tested, with firm size as the control variable. For analysis purposes, the following model has been developed for the study as follows:

$$ROA = \alpha + \beta 1\ (CR) + \beta 2\ (CAR) + \beta 3\ (DAR) + \beta 4\ (SIZE) + \sum \quad (1)$$

Where,

ROA = Return on asset;
CR = Current ratio;
CAR = Cash to assets ratio;
DAR = Debt to assets ratio;
SIZE = Firm size;
$\alpha$ = Constant term;
$\beta$ = Coefficients of the explanatory variables;
$\sum$ = Error term

*3.2 Descriptive Analysis*

Table 1. Descriptive Statistics

| | N | Mean | Standard Deviation | Skewness | Kurtosis |
|---|---|---|---|---|---|
| Return on assets | 132 | -.851 | .550 | .803 | 1.426 |
| Current ratio | 132 | 1.322 | 1.515 | .029 | 1.644 |
| Cash to assets ratio | 132 | .322 | .463 | .422 | 1.187 |
| Debt to assets ratio | 132 | 2.203 | 8.214 | 1.031 | 2.519 |
| Firm size | 132 | 7.146 | .938 | 0.823 | 1.69 |

Table 1 presents the descriptive statistics of 33 sample firms for the four-year study period comprising a total of 132 firm-year observations. Based on the mean and standard deviation (SD) of -.851±0.550 for ROA, it is shown that the sampled firms trended toward having lower return on assets, hence implying a generally weak firm performance. The current ratio presents a mean and SD of 1.322±1.515 indicating that manufacturing firms have current assets which are just able to sufficiently meet their current liabilities' obligations. The mean and SD for cash to assets ratio is .322±0.463, where the mean is less than the preferred ratio of 0.5 to 1. The result reveals that the firm's level of cash and cash equivalents are inadequate to fulfil its current liabilities. Creditors generally prefer higher cash to assets ratio to ensure easier pay-off of debts by the firms. The debt to assets ratio depicts a mean and SD of 2.203±8.214, where a mean greater than 1 reveals that the company owns more long-term liabilities compared to long term assets, indicating an extremely leveraged firm and thus is highly risky to invest in or lend to. Firms may have difficulty to meeting their long-term obligations, which could lead to the risk of being insolvent. As for the firm size, the mean and SD is 7.146±.938. Overall, the reported skewness and kurtosis for each variable varies between -3.00 to +3.00, suggesting that the data are normally distributed (Mustapha and Siaw, 2012).

*3.3 Correlation Analysis*

Table 2. Correlation Matrix

| | Return on assets | Currentratio | Cash to assets ratio | Debt to assets ratio | Firm size |
|---|---|---|---|---|---|
| Return on assets | 1 | | | | |
| Current ratio | 0.156 | 1 | | | |
| Cash to assets ratio | 0.042 | 0.725** | 1 | | |
| Debt to assets ratio | 0.292** | 0.251** | -0.049 | 1 | |
| Firm size | -0.044 | 0.048 | 0.110 | -0.210* | 1 |

** Correlation is significant at the 0.01 level.

* Correlation is significant at the 0.05 level.

Table 2 displays the correlation matrix among variables for the Nigerian manufacturing firm-year observations. Based on the Pearson correlation analysis, certain variables demonstrate significant correlations. The highest correlation is recorded between current ratio (CR) and cash to assets ratio (CAR) with coefficient .725, $p < 0.01$. Whilst CR measures the proportion of current assets to current liabilities, CAR takes only the proportion of cash and cash equivalents (quick or liquid assets) in relation to current liabilities. Although the correlation is significantly high; nonetheless, the correlation coefficient is less than 0.80, which indicates the absent of a multicollinearity problem (Gujarati & Porter, 2003). The correlations between other independent variables are seen to be comparatively low and do not appear to suggest any multicollinearity problem. An additional test on VIF further shows that all independent variables are below 3, which indicates the absence of a harmful collinearity problem. The results from the Pearson correlation are solely indicative and may not determine the potential determinants of firm profitability.

*3.3 Regression Analysis*

Table 3. Multivariate Regression Analysis

| | B | Std. Error | Beta | T-stats | Sig |
|---|---|---|---|---|---|
| (Constant) | -.961 | .369 | | -2.607 | .010 |
| Current ratio | .038 | .049 | .105 | .777 | .438 |
| Cash to assets ratio | -.022 | .156 | -.019 | -.142 | .887 |
| Debt to assets ratio | .018 | .006 | .267 | 2.808 | .006 |
| Firm size | .003 | .051 | .006 | .064 | .949 |
| R Square | .099 | | | | |
| Adjusted R Square | .063 | | | | |

The results of the regression analysis are presented in Table 3. The finding shows that current ratio (CR) has an insignificant positive relationship with profitability ($\beta = 0.038$, $p > 0.01$), hence rejecting H1. This is in line with prior studies that show insignificant impact, such as Innocent et al. (2014), Ahmad et al. (2015); and Nassar (2016). Similarly, the cash to assets ratio show an insignificant relationship but in an opposite negative direction ($\beta = -0.022$, $p > 0.01$). The debt to assets ratio however reveals a positive and significant relationship with profitability, accepting the hypothesis H2 ($\beta = 0.018$, $p < 0.01$) and is in line with Shibanda & Damianus (2015), and Yang et al. (2016). The overall results reveal that solvency significantly affects firm's profitability, in contrast to liquidity that demonstrates an insignificant impact.

## 3. Discussion and Conclusion

Given the fact that the manufacturing sector occupies a large portion of the economy compared to other sectors, its financial performance is very important, not only in the view of the objective of shareholders but also in developing the Nigerian Economy as a whole. The findings of this study reveal that firms should sustain in being solvent in order to generate business growth and achieve set development goals. The descriptive analyses have shown

that the Nigerian manufacturing firms generally rely heavily on debt financing to fund its business activities. It is further shown that the high level of debt constitutes firms' main capital funding which serves as the main engine that drives a firm's profitability. With a sufficient level of debt capital in support of its internal fund, firms could then focus on improving their business performance and position to achieve an optimum return for shareholders. The result is in line with the trade-off theory where firms maximize their profitability and value through the minimization of the average cost of capital and the establishment of a favorable debt-assets ratio. Besides being solvent, companies should manage their liquidity position effectively, thus enabling firms to reap competitive advantage.

The government and the private sectors must collaborate for the development of the manufacturing sector of the country. Manufacturing activity can only flourish in a good investment climate. The importance of physical infrastructure, sound financial markets, and affordable credit cannot be overemphasized. This research contributes to reference material related to the field of management and accounting discipline for academicians, shareholders, investors, future researchers, and financial managers to assist them with informed decision-making. Corporate managers need to instill due attention and plan towards debt financing because a too high debt ratio is susceptible to deteriorating firms' performance. The attempt at upgrading intrinsic practices of managing finances optimally is part of the efforts of Nigerian manufacturing corporations towards reviving ailing corporations to retrieve their financial stand.

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